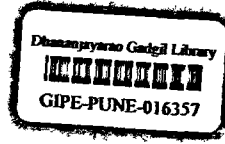


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EXPLANATIONS AND ABBREVIATIONS.

In referring to the summaries of evidence in Chapters IV and V the following abbreviations are employed :—

U. P.	...	United Provinces
B.	...	Bengal.
M.	...	Madras
B O.	...	Bihar and Orissa.
P.	...	Punjab.
Bo.	...	Bombay.
C. P.	...	Central Provinces.
Bu.	...	Burma
As.	...	Assam.
N. W. F.	...	North-West Frontier Province
Aj.	...	Ajmer-Merwara.
Ba.	...	Baluchistan.
D.	...	Delhi.
C.	...	Coorg.
Ba.	...	Bangalore.
N. S.	...	Native States.
O.	...	Oral Evidence.

The paragraphs in Chapters IV and V are numbered provincially, and references are given showing both the province and paragraph, thus Chapter V, U. P., 7 means paragraph 7 of the digest of the evidence regarding opinions expressed in the United Provinces in Chapter V.

No. 939, dated Simla, the 10th July 1914.

From—C. A. SILBERRAD, Esq., I.C.S., President, Weights and Measures Committee,

To—The Secretary to the Government of India, Department of Commerce and Industry, Simla.

In submitting the report of the Weights and Measures Committee I have the honour to say that I regret we are not able to submit a unanimous report. Mr. Rustomji Faridoonji and myself are in substantial agreement save in respect to one or two points of comparatively minor importance. Mr. Campbell has put in a note of dissent in which he recommends the metric system.

2. To make it more possible for a correct estimate of the opinions expressed to be arrived at, I think it should be noted that Mr. Campbell's service has been mainly that of an Under Secretary or Private Secretary, that of Mr. Rustomji Faridoonji and myself almost entirely that of a District Officer.

3. It is possibly also of interest to place on record the manner in which the work was distributed among the members of the Committee. The selection and editing of the evidence, the preparation of the summaries thereof and of the statements showing the weights and measures at present in use was divided amongst us, and though of course the work was to-ordinated as far as possible, the member concerned is primarily responsible for what he did. Accordingly Mr. Rustomji Faridoonji dealt with Bombay, the Central Provinces and Baluchistan; Mr. Campbell with Bengal, Madras, Bihar and Orissa, Assam, Coorg and Bangalore; while I myself took the United Provinces, the Punjab, Burma, North-West Frontier Province, Ajmer and Delhi.

4. Chapters I, II and III were almost entirely drafted by Mr. G. Findlay Shirras, Director of Statistics, to whose ungrudging assistance we are deeply indebted, an assistance without which it would have been quite impossible for us to have completed the work within the time prescribed.

5. Lastly, I wish to mention the good work of the head clerk, Babu Hari Narayan Ghosh, who did not spare himself in any way.

CHAPTER I.—INTRODUCTORY.

1. It is well known that the weights and measures of India have never been settled upon an organized system for the country as a whole, or for provinces. In India, as in other countries, the increase of communications and of commerce and industry has resulted in a widespread demand for greater uniformity in marketing, and therefore in a demand for a more uniform system of weights and measures applicable to larger areas, if not to the country as a whole. In the United Provinces, for example, the maund of sugar weighs $48\frac{1}{2}$ seers in Cawnpore, 40 in Muttra, $72\frac{1}{2}$ in Gorakhpur, 40 in Agra, 50 in Moradabad, $43\frac{1}{2}$ in Saharanpur, 50 in Bareilly, 46 in Fyzabad, and $48\frac{1}{2}$ in Shahjahanpur. The maund varies throughout India from the Bengal or railway maund of $82\frac{1}{2}$ lbs. to the Madras maund of 24 or 25 lbs., the Bombay maund being 28 lbs and the factory maund a little over 72 lbs. 10 oz. In the United Kingdom also, weights and measures, although uniform, are yet far from perfect, and recently attention has been called in the "Times" to the difficulties of marketing, especially in the case of food-grains. The English stone usually known as the equivalent of 14 lbs. is only 8 lbs for meat, 6 lbs. for cheese, and 5 lbs. for weighing glass.

The great diversity in weights and measures in different districts, even in different parts of the same town and of the same district, tends to create an element of uncertainty in trade, and renders fraud on the part of retailers as easy as it is profitable, and it exposes the poorer and silent classes to the constant liability of being cheated. Gover in his "Indian Weights and Measures, their Condition and Remedy" quotes with approval the remarks of one of the chief traders in Madras. He said "I can never tell what I am buying, nor how I am selling. My agents inform me that rice is at so much the seer, while in another quarter it is double that price. I take advantage of the opportunity, invest largely, and expect great profits. When the transaction is closed I find I have lost greatly. The seer in the first place was perhaps less than half the size of that in the other. No two villages hardly have the same measures, and to ensure success, I should need an agent in every place, each with infinite opportunity for deception. The expense and risk of employing these agents more than neutralizes the enormous advantages that might otherwise be gained, while the attendant labour and anxiety are more than you can imagine." This was written as long ago as 1865, and it applies with emphasis at the present time, especially in the Madras Presidency, where uniformity, except in homogeneous areas, may be said to be almost non-existent.

2 During the last 40 years the Government of India and the Provincial Governments have attempted to solve the problem of weights and measures. By Act XXXI of 1871, and events immediately preceding appointment of the Committee. Section 8 of the Indian Weights and Measures of Capacity Act (XXXI of 1871), the Governor General in Council was empowered to introduce a system of weights and measures of capacity consistent with a statutory unit prescribed by Section 3. Section 8 reads as follows:—"Whenever the Governor General in Council considers that proper standard weights and measures of capacity have been made available for the verification of the weights and measures of capacity to be used by any Government office or Municipal body or Railway Company, the Governor General in Council may, by notification in the Gazette of India, direct that, after a date to be fixed therein, all or any of the weights and measures of capacity authorized as aforesaid shall be used in dealings and contracts by such office, body, or company; and may, in like manner, from time to time, alter or revoke, such direction."

Section 2 is as follows:—"The primary standard of weight shall be called a Seer, and shall be a weight of metal in the possession of the Government of India, equal, when weighed in a vacuum, to the weight known in France as the Kilogramme des Archives."

Section 3 runs :—“ The units of weight and of measure of capacity shall be :—for weights, the said seer ; and for measures of capacity, a measure containing one such seer of water at its maximum density, weighed in a vacuum

Although this Act has been in existence for more than 42 years no notifications have yet been issued under it, because it was hoped that weights and measures based on the statutory unit would be gradually and generally adopted without further intervention on the part of Government. This pious hope, however, has not been realized, although the Indian railways and Government Departments have adopted as standards the tola of 130 grains, the seer of 80 tolas, and the maund of 40 seers. In March 1911 the Government of Bombay considered that it would be profitable to re-open proposals for the standardization of weights and measures in the Bombay Presidency, apart from Sind, and they appointed a Committee of the Legislative Council to discuss (1) whether it would be desirable to undertake the standardization of weights and measures, (2) what weights and measures should be dealt with, (3) what districts or localities should be first brought to standard and (4) what steps the Government should take to bring about the object in view. The final report of the Committee was presented on the 21st of May 1913, in which it was stated “we now unanimously recommend that Government should forthwith undertake legislation to secure for themselves power to prescribe the weights and measures which alone shall, after a certain date of which six months' public notice will be given, be used in specified areas in retail or wholesale trade in all commodities not specially exempted by Government. After that date, any Government, local board, or municipal officer should be empowered to impound and send to the nearest Magistrate or Police Sub-Inspector for destruction any other weight or measure that he finds in the possession of any one trading in any of those specified commodities in the said areas. The new Act should also definitely prescribe a penalty for use of any but the prescribed weights and measures, to cover cases to which Chapter XIII of the Indian Penal Code does not exactly apply and in which prosecution is thought necessary in addition to the destruction of the false weights and measures”. In 1911 the Upper India Chamber of Commerce addressed the Government of India on the desirability of the unification of Indian weights and measures, and suggested the feasibility of requiring all the Railway Administrations in India to adopt, “in substitution of the present cumbersome maund, a unit of 100 lbs. (avoirdupois) with convenient multiples and subdivisions based on the decimal system.” This Chamber also suggested that Local Governments should be asked to bring about the adoption of this standard with convenient decimal multiples and subdivisions. In May 1911 and September 1912 the Government of Madras forwarded to the Government of India a Resolution from the Planters' Association of Southern India on the unification of weights and measures. The Resolution of 1912 was as follows :—“That this Association approaches the Government of India (through the Government of Madras), Mysore, Travancore and Cochin, and begs that further steps be taken towards the general standardization of all weights and measures in India”.

3. At the same time (1912-13) the Government of India considered the question of the feasibility of securing uniform weights and measures in India, and owing to the fact that commerce and railway communications had developed greatly, and the Chambers of Commerce and Municipal and Trade Associations had been formed in various parts of India, they believed the time had now arrived for a Committee to inquire into the whole subject. The Hon'ble Mr. S. R. Arthur, I.C.S., Commissioner, Central Division, Poona, was appointed President, and Messrs. C. A. Silberrad, B.A., B.Sc., I.C.S., United Provinces, A. Y. G. Campbell, B.A., C.I.E., I.C.S., Madras, and Rustomji Faridoonji, U.C.S., Central Provinces, were appointed members. Mr. Arthur resigned his appointment at the outset of the inquiry owing to ill-health and Mr. Silberrad was appointed President in his place. No new member was added to the Committee.

4. No specific terms of reference were given to the Committee beyond the opening sentence of paragraph 3 of the Resolution dated Simla, the 10th October 1913 (printed as Appendix A), appointing the Committee in which it was laid down that it was decided "to re-open the question of the feasibility of securing the use of uniform weights and measures in India, and to appoint a Committee to inquire into the whole subject." The Committee decided that this reference involved three distinct questions:—

- (1) how far was a uniform system of weights and measures possible for India as a whole or for provinces;
- (2) if unification were possible, what would be the best system of weights and measures, *e.g.*, the metric, British or some Indian system;
- (3) the system having been decided on, what would be the best means of introducing it, *e.g.*, by legislation, with special reference to time after which only the prescribed weights and measures would be used, the penalty for the use of any but the authorized weights and measures, the provision for inspection and stamping of weights and measures, the supply of standards in all important market towns, and the facilities to be given to traders for the purchase of new weights and measures within the time limit.

5. The Committee met in Bombay on November 10th, 1913, and proceeded to frame two sets of questions, which are printed in Appendix B, the longer (a) was issued to the more highly educated witnesses, while the shorter (b) was for others. The Committee felt, however, that it was most necessary that they should get into touch with the agricultural and petty trader class, and equally that they were as a rule unable to do so themselves. They, therefore, addressed Collectors through Local Governments or directly, sending them copies of the shorter set of questions in the vernacular, the translations being either carried out directly by the Committee or by the Local Government,* and requested them to make inquiries of persons of these classes, who, it must be remembered, form the bulk of the population of the country. The letters issued are printed in Appendix B. The results of these inquiries were valuable.

Local Governments were requested to intimate the places in the various provinces which they considered the Committee should visit, and a tour programme was framed accordingly. The District Officers and Local Governments selected witnesses among whom were included the leading citizens, merchants, etc. With rare exceptions all witnesses received copies of the questions before being examined. The Committee also requested District Officers to arrange for groups of petty traders, agriculturists, and the lower professional classes to be ready to meet them and discuss the questions before them. They found that they frequently got more useful information by examining a group of persons together than by examining them singly. One member of a group would advance some statement and another would disagree with the result that points were discussed and considered from various sides. The Committee consider the evidence of these groups of witnesses among the most valuable they received. As far as possible witnesses were examined directly without the intervention of an interpreter. This was usually the case when witnesses spoke Urdu, Hindi, Marathi or Gujarati; in the case of all other languages an interpreter was employed, an inevitably less satisfactory method of examination.

* The questions were translated into Assamese, Bengali, Burmese, Chinese, Gujarati, Hindi, Canarase, Malayalam, Marathi, Tamil, Telugu, Urdu and Uryia.

The number of places visited, witnesses examined, etc., in each province is as follows:—

Provinces.	Population in thousands	No of places visited.	Written replies received.	Number of witnesses examined	
				Individually	In groups.
United Provinces ...	47,182	10	113	7	250 in 25 groups.
Bengal . . .	46,483	7	109	15	297 ,, 19 ,,
Madras	41,405	13	248	31	244 ,, 34 ,,
Bihar and Orissa ...	34,490	6	143	19	130 ,, 13 ,,
Punjab	19,975	7	81	6	210 ,, 16 ,,
Bombay	19,673	8	238	44	111 ,, 12 ,,
Central Provinces ..	13,916	7	82	26	88 ,, 9 ,,
Burma	12,115	10	284	20	227 ,, 24 ,,
Assam	6,714	3	18	2	48 ,, 7 ,,
North-West Frontier Province	2,197	2	33	..	49 ,, 5 ,,
Ajmer-Merwara ...	501	1	21	...	25 ,, 5 ,,
Baluchistan	414	2	5	...	41 ,, 4 ,,
Delhi	225	1	26	3	27 ,, 3 ,,
Coorg	175	1	4	...	...
Bangalore . . .	101	1	8	1	11 ,, 2 ,,
Total	2,44,566	79	1,413	174	1768 ,, 178 ,,

It was not possible for the whole Committee to visit every place in the time at their disposal and they accordingly divided up, all of them visiting the more important places as far as was possible, and one or two members the smaller ones. They were on tour, with but short intervals, from November 19th, 1913 until April 28th, 1914.

The tour was an invaluable means of obtaining information regarding the subject of the Committee's inquiries, more especially in respect of local opinion as to the desirability and feasibility of introducing some uniform system, and of the difficulty or opposition likely to be encountered as a result of various lines of action. As a rule the Committee met with every assistance from the local authorities, but in some cases these did not appear to take any great amount of interest therein.

The amount of interest displayed in the various provinces varies considerably, being greatest in the United Provinces, Madras, the Central Provinces, Burma and Baluchistan. The apathy of not a few of the European merchants was noteworthy; on the whole the middle class trading class was probably most interested.

CHAPTER II.—ACTION TAKEN TOWARDS SECURING UNIFORMITY UP TO 1900

As early as the reign of Akbar attempts were made to unify measures, and it would appear, also weights. The gaz was, for example, so infinitely varied as regards length that reform was decided on, and after considerable inquiry and deliberation Akbar introduced the Iláhi gaz, which we know to have been between 33 and 34 inches. The *Ain-i-Akbari* informs us that this official gaz was taken as the mean of the three chief gaz then existing, and around which most of the existing measures may be grouped. The Iláhi gaz we know to have been between 33 and 34 inches. For some time the result of this unification was inestimable. At the present time, it may be said that there are 4 main gaz measures in the greater part of India—Akbar's and those he endeavoured to supersede—all with their own variations and no acknowledged standard. Jonathan Duncan employed a gaz of $33\frac{1}{2}$ inches when he introduced the permanent settlement into part of the North-West Provinces. In the coast districts of the west, the most common gaz is that of about 28 inches. In other parts there is a group whose average is about 39 inches. It is necessary to note that frequently in one locality merchants will buy by the gaz of 34 inches and sell by that of 30 or they will measure cloth by one measure and silk by another, while carpenters and bricklayers will each use a different measure. Akbar's attempts at unification were not successful owing to the decline of the central power, and the internal confusion and anarchy that followed.

In March 1801, a Government proclamation was issued in Madras directing the introduction of what appears to be a revised system of weights and measures. In 1801, Mr. Ellis, Sub-Secretary of the Board of Revenue, drew up a plan for re-modelling the measures of capacity so that when heaped, they should correspond with the old 'struck' measures, and this was approved by the Government of Madras in 1802. "The accuracy of Mr. Ellis's calculation," said the Government in their letter of the 17th April 1802, "and the simplicity of the means to be employed in the organization of a general uniformity in weights and measures have satisfied His Lordship in Council, not only of the practicability of the plan, but that the public and individual interests will experience advantages not easily to be estimated from the establishment of a standard of weights and measures on the principles recommended by Mr. Ellis. His Lordship in Council has, therefore, resolved that these principles shall be practically applied to the construction of all weights and measures to be henceforward in use in the districts under the Presidency of Fort St. George." Mr Ellis's plan does not seem to have ever been carried out owing to the fact that the supply of weights and measures required was so great. In the first quarter of the 19th century a careful perusal of proceedings of Madras, Bombay and Bengal will show that a few futile attempts were made to rectify the prevailing confusion of weights and measures, especially in landlocked areas.

2. The first attempt to adopt a unified system of weights was in 1833 when Mr. James Prinsep, the Assay Master of Calcutta, addressed a letter to the Mint Committee proposing that the Furruckabad rupee for the North-West Provinces should be 180 grains instead of the 180.234; and he suggested the adoption of 180 grains as the standard for the tola weight, and the making of seer weights of 50 of these tolas. He pointed out that the Madras and Bombay rupees were already of a weight of 180 grains, the Sicca rupee only remaining 191.916 grains. He also pointed out the fact that with a tola of 180 grains the seer of 80 tolas would be exactly $2\frac{1}{2}$ lbs. troy, and 40 seers or a maund, 100 lbs troy. Mr. Prinsep had outlined this scheme in the *Journal of the Asiatic Society* for October 1832. The Government of India in May 1833 passed Regulation VII of 1833, which altered the weight of the Furruckabad rupee to that of the Bombay and Madras rupee (180 grains English weight), and fixed 192 grains for the Sicca rupee. The Regulation declared in the preamble "that it is convenient to introduce the weight of the Furruckabad rupee (180 grains) as the unit of a general system of weights for Government transactions throughout

India, under the native and well-known denomination of tola." By Act VII of 1835, the Sicca rupee was abolished, and since that date the only rupee coin has been the rupee of a 180 grains in order that the above standard of weight introduced into Bengal might be general throughout British India. This standard was adopted by the Customs authorities, and also by the merchants and traders of Calcutta in a meeting held in 1836, when it was resolved that the new maund should be of 82½ lbs. avoirdupois. In 1840, the standard was extended to Bombay, but throughout the Madras Presidency little was done for its introduction for at least 20 years after Act VII had been passed

3 Between 1825 and 1853, the question of weights and measures was frequently discussed although no result seems to have been achieved. In Bombay Act VII of 1835. Regulation XII of 1827 (Chapter II, Section XX), it was laid down that "the Magistrate shall keep weights of such standards and measures as are used in retail dealings throughout the district under his charge, and they shall be open to inspection by anyone who may desire to examine them." In 1839, the Madras Government appointed a Committee to adjust the value of the ordinary weights and measures in use in the Presidency to the Imperial standard. In their report they observed that "the weights and measures sent to them by the Ordnance are the English ones, but those sent to them by the Commissariat are the country ones made of all materials and very discordant; so much so that it was impossible to determine from the weights themselves the actual weight they are designed to represent". They refer to the discrepancy between the *pagoda* and *pollum* observing that if a pollum is 10 pagodas it should weigh 1 oz 83 grains avoirdupois, and the maund 24 lbs. 19½ grains, for the mint weight of the pagoda is 52.56 grains, whereas the pollum is always reckoned as 1½ oz. and the maund 25 lbs. The Committee had no hesitation in recommending at once the introduction of British Imperial measures. In May, 1840, the Madras Government referred the question to the Government of India, and a reply, dated August 1840, stated that "the Governor General in Council considered the pollum a less perfect unit of weight than the tola, and it was desirable to adhere to one system." In September, 1840, in consequence of the Imperial Government's refusing to sanction any but the tola unit another Committee was appointed, and this Committee consulted the Madras Chamber of Commerce regarding the feasibility of making the pollum either 2½ or 3 tolas. By the first plan the pollum would be half the Bengal chatak, and by the second it would approach the existing commercial pollum of the town of Madras. The Chamber replied that "they consider no system can be perfect that does not reduce the weights and measures at the three Presidencies to the same standard; and any change, if to be made, might as well be a change that would ensure unification with the Bengal scale. If this standard be adopted so as to make the tola the unit, the second scale should be introduced." The Committee sent in their report in February 1841 recommending the tola unit and the pollum of 3 tolas by which the viss became 3 lbs. 1 oz. 5 24 drs. and the maund 24 lbs. 10 oz. 15 54 drs. The Committee also expressed themselves in favour of a decimal scale. In March, 1841, the Government of India approved of the second Committee's proposal as an adjustment promising local convenience, and the Madras Government asked the Committee for suggestions as to the carrying out of the proposals. The Committee replied that it would be useless to attempt to reconcile the discrepancies existing in the ordinary Indian weights and measures, and they agreed with the former Committee that it is in the power of Government, leaving untouched the provincial systems, to declare the value which they think proper to attach to the country weights and measures, and to recognize in the public accounts no weight or measure except those which correspond with the revised tables. They also proposed that every Department, Civil and Military, should be supplied with 'counterparts,' as soon as they were prepared, that Government should issue a proclamation prescribing the date from which the new tables should be introduced in the Public Departments. In June, 1841, the Government of Madras approved the report of the second Committee. In 1846, the following proclamation

was issued by the Government of Madras:—"The Governor in Council hereby notifies that on and after the first January 1847, the weights and measures herein particularized shall alone be used in the Revenue, Commissariat, and other Public Departments throughout the Presidency of Fort St. George, Madras, and that all the public accounts shall be kept therein, duly authenticated standards having been furnished to the several Heads of Departments throughout the Presidency for that purpose."

The following are the tables given —

Weights.

	Equivalents in avoirdupois weights.	Equivalents in tolas
	Lbs. oz. drs.	
180 grains = 1 tola	0 0 6·58	1
3 tolas = 1 pollum	0 1 3 75	3
40 pollums = 1 viss	3 1 5 94	120
8 viss = 1 maund	24 10 15·54	960

Measures.

	CYLINDRICAL		Cubic inches.	Weight (avoir) of water at 80° Fahr.
	Diameter in inches	Depth in inches.		
1 olluck	2·6	2·4	12½	lbs oz. dr. gr. 0 7 3 6
3 ollucks = 1 measure	5 0	5 1	100	3 9 9 20
3 measures = 1 mercal	10·8	9·6	800	28 12 13 22
Half measure	4 0	4 0	50	1 12 12 23
Half mercal	8 2	7·6	400	14 6 6 24

This proclamation, however, was entirely a dead letter with the exception of a limited application in Public Departments. The Commissariat, for example, used the old measure for 6 years after. The case of Madras clearly shows the difficulties that existed and the futile efforts made by Local Governments in this period.

4. The Director General of Post Office in India had called the attention of Government in October 1854 to the inconvenience which had arisen in consequence of the railways having adopted English standards of weight instead of the standard of the Indian maund. In November 1854 the Government of India resolved that the railway weights should be the Indian maund for the same reasons that railway payments were in Rupee currency.

5. In 1857 the Court of Directors forwarded to the Government of India for its consideration a proposed reform
Mr. Bayley's proposals in 1857. of the weights and measures by Mr. W.

H. Bayley of the Madras Civil Service, whose scheme was shortly as follows:—

“Taking the Bengal seer as the most generally used of the existing Indian weights, he adopted it as the unit, and proposed that it should be fixed at 2 lbs. avoirdupois. The existing unit—the tola of 180 grains—being incompatible with the avoirdupois scale, he abandoned it, but the natives of India being in the habit of testing weights by rupees, he suggested at first that $77\frac{1}{2}$ rupees or very approximately 2 lbs., should be taken as the equivalent of the seer. In a later paper, drawn up in 1864, he modified this suggestion, and stating as a fact that rupees in use lose weight, which on an average may be set down at half a grain on each rupee, he considered that as an approximation and a practical test for the people, 78 worn rupees would represent with sufficient accuracy the new 2 lbs. unit. For the unit of capacity Mr. Bayley recommended the imperial quart. Both the units of weight and capacity were to have decimal multiples and binary subdivisions. For linear and superficial measure he recommended the adoption of the English scales taking the yard and mile for length, and the acre, “decimally divided, for area.”*

6. Until May 1863 no action seems to have been taken on Mr. Bayley's proposals when the Government of Madras drew the attention of the Government of India to the importance of steps being taken to reform the various systems of weights and measures in use in British India. The Madras Government also suggested that a Committee should be appointed consisting of properly qualified persons from each Presidency to report on a system which it would be desirable to adopt for all India. In July of the same year the Calcutta Trades Association also addressed the Government of India, and proposed that a mixed commission should be appointed to inquire into the existing system of weights and measures and to suggest one uniform system which should be enforced by legislation.

7. In a Resolution, therefore, dated 20th June 1864, the Government of India ordered a separate Committee for each Presidency and Province which should meet and deliberate on the subject of weights and measures, and report the result to the Local Governments for submission to the Government of India. “His Excellency” said the Resolution, “observed that a uniform system of weights and measures for all India would, doubtless, be of great advantage, but that the difficulties in the way of attaining so useful an object were grave and numerous. There was much to be done before a practical scheme for general adoption could be discovered, and it was anticipated that, when discovered, it would be better introduced by indirect means than by penal legislation.”

The mode of dealing with the subject, which most recommended itself to His Excellency in Council, was to constitute a separate Committee of well selected persons for each Presidency and Province, each Committee to consist of three or five members (for preference three, *viz.*, a civil servant, a merchant, and an Engineer Officer), who should meet together in the chief city of such Presidency or Province, and deliberate on the subject, reporting the result of their labours to the Local Government or Administration, for submission to the Government of India, with any further remarks which the local authorities might deem necessary. For a Central Committee for all India, as proposed by the Madras Government, there was not at that time sufficient information available, and His Excellency in Council, therefore, believed that, as a preliminary measure at any rate, Local Committees would be more useful besides being far less expensive.

A copy of the Resolution was also sent to the Secretary of State, who suggested caution so as not to interfere unduly with a question so closely connected with the interests and habits of the people of India.

* *Vide* Minohia's Report, 1868.

8. It is interesting to give in this connection a summary of the Local Governments' opinion * The Bengal Committee opposed Mr. Bayley's scheme.

Views of Bengal.

They considered it a fallacy to seek for approximation with English weights and measures when those were on the brink of a tremendous change. When the rest of the world has adopted, or is about to adopt, the metre as its unit of length, they considered that it would be a retrograde step to adopt the English foot. In their opinion the days of the foot, acre, and pound were in all probability numbered. They objected to Mr. Bayley's measure of capacity being based on his weight as in a natural system it would be based on the linear measure. Lastly they objected to his weight as being neither true to the pound, the tola, or practical usage, though it ingeniously combined an approximation to all the three. They opposed, therefore, all previous propositions, as involving considerable change without simplifying calculations, as tending only to approximate Indian to the British scales which are in an unsettled state, and as being unscientific and possessing no clear connection between weights and measures. They, therefore, proposed the gradual, but finally complete, adoption of the French metric system, and that recommendation received the support of the Bengal Government.

9. The Madras Committee adopted Mr. Bayley's scheme, modified in one point only They would lower the weight of the tola from 180 to 175 grains, in

Views of Madras.

order that a seer of 50 tolas should exactly equal 2 lbs. They would thus have the tola weight different from the rupee weight, any alteration in which they did not contemplate. Sir T. Pycroft, late of the Madras Council, objected to this proposal, urging that it invented a new weight to form a submultiple of one already known. He preferred to have the seer of 2 lbs. the unit of weight, and to divide it into 16 or 32 parts.

10. The Bombay Committee recommended a decimal system of multiples and submultiples of the pound avoirdupois and gallon; for linear measure, the

Views of Bombay.

inch, foot, yard and mile; and for area, the acre decimally divided. The Government recommended the adoption of the English pound and foot or yard as unit of weight and length; square foot or yard for area; and cubic foot or yard for capacity. They did not object to decimal multiples but recommended division into sixteenths.

11. The Committee and Government of the North-West Provinces supported the units of length, weight, measure, and capacity recommended by Mr. Bayley,

Views of North-West Provinces.

confining the use of the acre, decimally subdivided, to Government records. They suggested that the copper coinage should be taken as the standard of weight in lieu of the rupee, and that, the copper pice being fixed by Government to weigh 100 grains, 140 such pice should be declared equivalent to the seer. It would seem, however, that this assimilation to the weights of the copper coinage was recommended only as a popular test for weights and no particular coin was taken to serve as the unit of weight, as the rupee does under the present system

12. The Punjab Committee supported Mr Bayley's scheme, except for the unit of weight. For this they would preserve the present tola, and adopting

Views of the Punjab.

troy weight, would make the seer the equivalent of 2 lbs. troy. The Punjab Government disapproved of the suggestion to adopt troy weight for the Indian standard when this scale had been abandoned in commerce. They advocated as the unit of weight the tola of 175 grains; and if the rupee could not be reduced to this weight, they would abandon an imaginary connection with the coinage, and like the Madras Committee, would advocate the introduction of a new tola differing from the rupee as a unit of weight.

13. The Committee and Chief Commissioner of British Burma deprecated any alteration of existing weights, but recommended that the basket or native

Views of Burma.

measure should be assimilated with the English bushel.

* *Vide* Minchin's Report, 1868.

14. With the exception of the Report of the Bengal and Oudh Committees, none of the other papers forwarded to the present Committee contained any suggestion of importance.

15. In a Resolution of 25th January 1867 when all the replies of Local Governments had been received the Governor General in Council decided that,

The Resolution of 1867.

since the proposals of Local Governments differed so greatly, a well selected Central Committee should meet in Calcutta to decide the best method of dealing with the question. The Committee was to consist of the Master of the Calcutta Mint, the Comptroller-General of Accounts, two members of the Bengal Chamber of Commerce, three Indian members appointed by the Government of Bengal and two Civilians representing Bengal, Bombay and Madras and any Indian gentlemen recommended by the Governments of Madras and Bombay. The Committee was to meet in Calcutta in February 1867 and the terms of reference were:—"It will be sufficient instruction to the Committee to accept generally the views of the Government of Madras expressed in their letter of the 13th May 1863, and already quoted above. Although the Governor in Council does not wish entirely to preclude the Committee from examining what may be theoretically the best system of weights and measures, His Excellency desires that they may be guided in their selection of a system rather by considerations of its practical convenience for adoption in India generally and its capability of being placed in easy relation with that now existing in England. Nor does the Governor in Council consider it expedient that the Committee should narrow their inquiries by the arbitrary adoption of any particular standard unit from any existing system of measurement or weight." The Resolution was communicated to the Secretary of State who in approving of it forwarded a report on the representations made by a deputation from the Metric Committee of the British Association on the subject of the introduction into India of the metric system. The Secretary of State did not believe it to be advisable to introduce the present English system, but that it would be more expedient to establish a system on the best theoretical model, although extreme caution should be used not to sacrifice practical convenience to theoretical symmetry.

16. Between July and December 1867 the Bombay and Madras Governments forwarded to the Government of India copies of communications from the

Colonel Strachey's proposals of 1867

Agents of Railways, recommending the adoption of English weights, and were informed that until the receipt of the report of Colonel Strachey's Committee no action could be taken in the matter. On the 1st of October 1867 Colonel Strachey issued a pamphlet containing proposals relating to the introduction of new standards of weights and measures in India in which he pointed out that weights and measures were as diverse as was well-nigh possible, but that India differed in no respect from other countries in which uniformity had not been prescribed by authority. He showed that throughout India the old standard of weight was based upon the current coin of the locality, and that weights and measures varied from town to town and even within the same town or rural area for various commodities. In Northern India the usual unit of weight was the tola, which was the weight of the current rupee coin, while the seer varied from 70 to 100 tolas. The maund was usually 40 seers, and 5 seers was called the *panseri* and the seer was divided into 16 chatáks. In Southern India, however, the original unit of weight was the pagoda and the common kachha seer was 80 pagodas equivalent to 24 current rupees. The maund of Southern India containing 40 such seers was divided into 8 viss (5 seers) weights and 40 pollums, and in Bombay the old seer was reckoned as equal to 30 pice or about 10 or 12 oz. avoirdupois. The Bombay maund was 40 such seers or nearly 28 lbs. Measures of capacity were hardly known in Northern India. In Bengal and Southern India they were more frequently used, and in Burma grain was universally sold by measure. The usual length measures were the cubit or háth and gaz, and measures of area based on the háth or gaz varied so exceedingly from one district to another that no general account could be given of them. In view of this condition of things he suggested firstly that it would be necessary to set aside the whole of the existing weights and measures

of all sorts in order to establish uniformity, and secondly that the introduction of the metric system would have to follow as a corollary.

17. In March 1868 the report of the Committee was issued signed by the majority of members, in which a draft Bill was submitted adopting the English

Report of the Committee of 1868.

standard of weights and measures and length, on the ground that such weights and measures would best afford facilities of English trade. This report pointed out that the English system had to some extent been introduced into India and was more likely to meet with approval from English officials who would therefore be more willing to further its introduction. There was no probability, the Committee believed, of the English system giving way to the metric system in England. Colonel Strachey recorded a strong minute of dissent with which Colonel Hyde and Mr Harrison agreed. He held that the Committee's arguments for the English system were not based on facts; that the English standard had not been introduced into India to any considerable extent; that the English system must give way to the metric system before very long; that the Committee's proposals do not even attempt the adoption of the English system, nor do they bring Indian weights into line with the English

18. In November 1868 the report was forwarded to the Secretary of State.

The Government of India's views on the Report

The Governor General in Council pointed out that a reform of Indian weights and measures was urgently required and that for the present time attention should be given to weights only. The Governor General in Council did not believe the adoption of the English weights to be desirable since it would reduce the seer average of 2½ lbs. to 2 lbs., while the kilogramme of 2·205 lbs. would more readily be accepted by the people. The metric system was therefore proposed so that (1) the standard of weight should be the kilogramme or seer of 2·205 lbs. a voidupois, (2) the system of decimal subdivision should be adopted as far as possible, and (3) the Public Departments, municipalities and railways should use the system as soon as possible. In June 1869 the Secretary of State sanctioned the proposal and the Indian Weights and Measures Act of 1870 (XI of 1870)

Indian Weights and Measures Act (XI of 1870).

was passed in March, and forwarded to the Secretary of State for sanction with the request to allow Colonel Strachey means of obtaining the required standards in England.

In November 1870 the Secretary of State refused sanction to the Bill, because in his opinion it went further than had been intended in treating of other standards besides those of weights and because the compulsory clauses of the Act were too severe, and too extensive as they applied to all persons engaged in trade. He was dissatisfied with the explanation given by Colonel Strachey, and revision of the Act was ordered.

19. In August 1871 a new Act was introduced—Act XXXI of 1871—in

Indian Weights and Measures of Capacity Act, (XXXI of 1871)

conformity with the suggestions of the Secretary of State (Sections 2, 3 and 8 of this Act have already been referred to in Chapter I, pages 7 and 8.) In January 1872 this Act was submitted to the Secretary of State, with the suggestion that Colonel Tennant should be deputed to England to procure the necessary standards, and it was stated that Indian Railways were prepared to introduce the new system if it were introduced simultaneously; the new standards, however, were required before it could be so introduced. In March 1872 the Secretary of State ordered all steps for introducing the Act to be suspended until the arrival of the new Viceroy (Lord Northbrook),

Orders of 1872.

who, in the following September recommended that the compulsory clauses of the Act be not put in force so far as concerned the railway companies, but that the Directors should be consulted at Home and if they agreed the new seer should be adopted for all railways, but that otherwise the new Act must become a dead letter. Meantime negotiations for procuring standards of weight were in progress.* The Boards of Directors of the various Indian Railways were ac-

* *Vide* despatch from the Secretary of State, dated 30th March 1873, and despatch from the Government of India to the Secretary of State, dated 9th June 1873.

cordingly consulted. Three Railways—the Madras, the Carnatic, and the Great Southern of India—were favourable to the simultaneous introduction of the Act. The East Indian, Bombay, Baroda and Central India, and the Great Indian Peninsula Railways opposed the proposals. The Eastern Bengal Company also dissented, but as they were not connected with any other Railway their dissent was unimportant. The Oudh and Rohilkhand Railway objected on the

Despatch of November 1873

ground that it was inexpedient for such a change to be imposed upon the people. In November 1873 a despatch was sent to the Secretary of State to the effect that the Railways were unwilling for the most part to introduce the new weights on their lines, that it was inexpedient to introduce their use on State Railways, and that therefore no steps would be taken to bring the Act into operation. One Member of Council (The Hon'ble Mr. Ellis) objected on the ground that no inconvenience would be caused by Government altering the seer by 7 per cent—the new seer of Act XXXI of 1871. In 1874 the Government of Bombay forwarded to the Government of India representations from the Bombay, Baroda and Central India Railway for the cost of altering their weighing machines to suit the system in anticipation of the introduction of Act XXXI of 1871. These representations were referred to the Secretary of State in June

Despatch of Secretary of State of July 1874

1874, whose reply was to the effect that (1) no decision had been passed by the Secretary of State adversely to the introduction of the metric system and (2) that the matter was still under consideration.

No further action seems to have been taken regarding the introduction of the Act until February 1877 when the Bengal Chamber of Commerce requested the Government of India to enforce the Act at the earliest possible date, and the Chamber stated that the Lieutenant-Governor of Bengal had informed them that a corrected set of standards of weight was expected from England.

20. At this time the difficulty experienced in obtaining correct agricultural, railway and trade statistics owing to the diversity of weights throughout India reopened the question of weights. In October 1875 the Government of India decided * that the Indian maund of 40 seers (of 80 tolas) should be the standard in use on Guaranteed and State Railways.

In December 1877 it was decided that the half-yearly abstract of traffic should be prepared in tons and pounds and that the standard maund should be equal to 82½ lbs.

21. On the 15th February 1889 an Act was passed, known as the Measures of Length Act (Act II of 1889)†, and by Act XIII of 1898, section 4, it was extended to Upper Burma, except the Shan States. By sections 2 and 4 of this Act the primary unit is the imperial standard yard, which is subdivided into feet and inches, and these are the only legal standard measures of length. It will be noted that nothing has been done as regards square or cubic measures.

* Resolution No. 21-R., dated 9th October 1875.

† Gazette of India, 1889, Part I, page 305.

Act II of 1889 —(1) This Act may be called the Measures of Length Act, 1889.

(2) It extends to the whole of British India, and

(3) It shall come into force on such day as the Governor General in Council may appoint in this behalf.

The imperial standard yard for the United Kingdom shall be the legal standard measure of length in British India, and be called the standard yard.

A copy, approved by the Governor General in Council, of the imperial standard for determining the length of the imperial standard yard for the United Kingdom shall be kept in such place within the limits of the Town of Calcutta as the Governor General in Council may prescribe, and shall be the standard for determining the length of the standard yard.

One-third part of the standard yard shall be called a standard foot, and one thirty-sixth part of such a yard shall be called a standard inch.

22. In 1889 the Government of Bombay addressed the Government of India recommending that uniform weights and measures of capacity should be adopted in the various districts of that Presidency. They pointed out that in 1887 Mr. W. P. Symonds, then acting as Director of Land Records and Agriculture, had made a similar recommendation, and that all Taluq and Mahal offices should be supplied with measures from the Mint, and that District Magistrates should be directed to issue a proclamation calling attention to the fact that all persons using, making or selling measures that did not correspond in capacity and aperture with the standard measures, would be liable to prosecution under Chapter XIII of the Penal Code. The weights and measures recommended for universal adoption were :—

Weights.

180 grains (English) make	...	...	...	...	1 tola.
80 tolas	...	..	...	...	1 seer.
40 seers	...	..	...	...	1 khandi.

Liquid Measure.

Measure containing 1 seer of water is 1 liquid seer.

Its capacity is 57.7392 cubic inches.

Dry Measure.

Measure containing 1 seer of grain is 1 dry seer.

4 seers make...	...	...	...	...	1 pahi.
10 pahi	...	..	...	...	1 dry maund.
20 maunds	...	..	...	...	1 dry khandi.

Mr. Symonds' proposals were circulated throughout the Presidency and forwarded to the Government of India, with the request that the subject be dealt with on the same principle already followed in respect of measures of length. The Government of India thereupon consulted other Local Governments, the specific points on which information was asked for being :—

- (1) The nature of the different measures of capacity in use and the extent to which they are respectively used.
- (2) The best system of weights and measures capable of being generally adopted.
- (3) The steps, if any, besides those indicated in Section 8 of Act XXXI of 1871, which may be taken to promote its general application.

In this connection it was suggested that the system which promised the best solution of the question was that of the tola of 180 grains, the seer of 80 tolas and the maund of 40 seers which had already been adopted on the railways in India.

- (4) The opinion of the principal trading associations and communities (both European and Indian).

At the same time a proposal by Colonel Ardagh to assimilate Indian and British weights, by reducing the weight of the rupee to 175 grains was circulated.

23. The replies from all Local Governments and Administrations indicate a very great diversity of weights and measures in actual use, especially in regard to measures of capacity which varied not infrequently from district to district but even from village to village. It was deemed impossible to select any measure which could be made to apply generally.

The weights of the seers most generally in use in the several provinces are :—

Madras	...	...	...	...	24 tolas.
Bombay	...	...	...	...	80 „
Bengal	...	...	...	...	80 „
North-Western Provinces and Oudh	...	...	...	...	80 „
Punjab (in mercantile places)	...	...	...	...	80 „
Central Provinces	...	...	...	...	80 „
Assam	...	...	...	...	80 „
Ajmer	...	...	...	...	80 „
Coorg	...	...	...	...	27½ „
Berar	...	...	...	...	80 „

The chief weight of Burma was the viss of 3·65 lbs. avoirdupois. A careful perusal of the evidence collected at this period in reply to the Government's letter reveals the fact that with the exception of Burma, uniformity of weights in India was possible only when based on the unit of the tola, and that perhaps the best solution was to adopt as the one system of weights the tola of 180 grains equal to one rupee, the seer of 80 such, and the maund of 40 seers. Bombay, Bengal, the Punjab, the North-Western Provinces and Oudh, Assam, the Central Provinces, Coorg and Berar supported the introduction of the weights suggested by the Government of India. Madras, however, proposed to introduce generally a maund of 40 seers of 24 tolas. The scale suggested by the Government of India for general adoption did not seem suitable to Burma.

To sum up, as regards weights, if a system were to be laid down, there can be, from an examination of the papers on the opinions collected at this time, no doubt that except in Burma, Coorg, and Madras, the railway system was considered the best—a system which entails not only the use of the tola, but also of the seer of 80 tolas and the maund of 40 seers. It was clear also that small tentative measures on the part of Local Governments led to very little result.

24. Measures of capacity cannot be classified under any one common standard on an examination of the papers regarding the inquiry of 1889-1893. Madras proposed to reduce all grain measures to two types of seers of 80 and 120 tolas, or to such as can be referred to these two as multiples or submultiples and to leave liquid measures alone. Bombay recommended for a liquid measure, a measure containing 1 seer of water, which is equivalent to 57·0392 cubic inches; and for dry measure the following.—

Measure containing 1 seer of grain is 1 dry seer.
 4 seers make 1 paili.
 10 pailis „ 1 dry maund.
 20 maunds „ 1 dry khandi.

Bengal, the North-Western Provinces and Oudh, the Punjab, Berar and Ajmer made no proposals, and Burma preferred to retain its own scale for the time being. Assam did not feel sufficiently advanced to require a compulsory scale, and Coorg advocated the English quart as the legal measure. Bombay and the Central Provinces advocated uniformity with compulsion. Assam did not anticipate any difficulty in securing uniformity provided everything was based on the rupee on the general lines of the custom then in vogue. Coorg favoured uniformity, but did not say whether it should be compulsory or not. Bengal, the North-Western Provinces and Oudh, with Burma, were against any change.

It is interesting to note that commercial opinion was not at this time unanimous or very decided. Commercial opinion in Bengal, Bombay, Madras, the Central Provinces, Assam and Coorg was in favour of uniformity of weights and measures for India as a whole. In Berar opinion on this point was indifferent, and the Punjab gave no commercial testimony.

25. The replies received to Colonel Ardagh's scheme were adverse, the objection being based on the danger of the depreciated rupee.

Replies regarding Colonel Ardagh's scheme.

In the discussion which followed receipt of these replies opinions were divided. The possibility of altering the weight of the rupee was negatived. Sir David Barbour (then Finance Member) believed that "the objections to altering the weight of the rupee are, for the present, even greater than before, especially to any change in the direction of diminishing the weight." It may be noted that the Member for Revenue and Agriculture was of opinion that a great deal could be and ought to be done towards the establishment of a uniform standard. No orders, however, were passed by the Governor General in Council.

26 In September 1892 the Chief Commissioner of the Central Provinces

Introduction of a uniform system of measures of capacity in the Central Provinces, 1892.

proposed the introduction of a uniform system of measures, especially in connection with the trade in grain to be carried out as far as possible without material dislocation of trade arrangements. The proposed uniform measures were the *kangan* or seer of 80 tolas and the *katha* or 5 seers, of 400 tolas. It was pointed out that the introduction of this system would be in general accordance with the seer of 80 tolas and the maund of 40 seers favoured by the Government of India. In order to hasten its general adoption it was deemed desirable to prohibit the use of other measures of capacity after a certain period of time fixed at two years, and to effect this by means of legislation. Sir A. Macdonnel, however, proposed to postpone legislation until the system proposed had been introduced for some time. The Government of India, in reply, had "no objection to the introduction of a uniform system of measures of capacity, so long as no compulsory procedure was put in force."

CHAPTER III.—ACTION TAKEN TOWARDS SECURING UNIFORMITY SINCE 1900.

In January 1901 the Secretary of State for India forwarded to the Government of India copies of a paper presented to Parliament regarding the adoption of the metric system of weights and measures in European countries. He pointed out that in nearly all European countries, except Turkey, the metric system had been introduced without much opposition from or disturbance to the people, and that it had proved a great benefit to the countries which adopted it. No country which had adopted it was willing to go back to the old system. The Secretary of State, in pointing out that most Governments intending to adopt the metric system did so in their own establishments for a few years before the general adoption was enacted by law, suggested that the first step in India would be to accustom the public to the new weights by adopting them on railways, at customs houses, and in post offices. Little need be said here (these papers are again referred to in Chapter VI, paragraph 4) on the contents of the reports on the metric system beyond referring to the reports of its working in Egypt. Viscount Cromer pointed out that in 1873 a decree was issued by the Khedive Ismail introducing the metric system throughout Egypt, but that it was not enforced. In 1886 a Commission was appointed to inquire into the relative values of weights and measures under the metric system, and those of the units of weights and measures then in use in that country. As a result the adoption of the metric system was decreed on the 1st January 1892, but the decree was made binding only on Government Departments, in their transactions with the public, while agricultural measures and the tonnage of ships were left unaffected. From that time the metric system came into general use in all Government Departments, and has been introduced without difficulty in public works, post offices and railways, has been used for levying customs duties and octroi and been taught in Government schools. Most of the wholesale and retail trade in the country, however, was still found to be carried on by means of the old Egyptian weights and measures.

2. To this despatch the Government of India replied that:—

“While recognizing the advantages of the decimal system as shown by the experience of other countries, we are of opinion that the difficulties in the way of its introduction into India would be very great. For the currency there might perhaps be no great difficulty in introducing the decimal subdivision of the rupee as in force in Ceylon; but in the case of weights and linear, superficial and cubic measures, the obstacles would be very serious. On the whole, we are averse from taking any action in the matter at the present time, and we prefer to wait before proposing a change in the Indian practice, until the United Kingdom has decided to adopt the decimal system.”

3. The Government of Bombay in July 1902 asked the Government of India

Standardization of weights and measures in the Bombay Presidency and proposed amendment of Act XXXI of 1871 (1902).

that Local Governments might be empowered, subject to the sanction of the Government of India, to prescribe standards for limited areas. The Government of Bombay was of opinion that it was incumbent on Government to take steps to remove the confusion, at present prevailing, which touched the interests of all classes of consumers. The specified amendment of Act XXXI of 1871 to which the greatest importance was attached was the omission of the proviso to section 4, which required that all weights and measures of capacity should be integral multiples or submultiples of the kilogramme and the litre. “His Excellency,” said the Secretary to the Government of Bombay in his letter, “does not desire to discuss the question whether it will ever be possible to introduce the metric system into India. He would merely point to the fact that no notifications have yet been issued under any section of the Act as showing that it has not hitherto been possible to do anything in this direction. No standard can at present be introduced into India that is not based on the tola of 180 grains, which is now in universal use through the circulation of Government rupees. His Excellency the Governor

in Council proposes, in the event of the suggested amendment being made, to institute careful local inquiries into the standards at present in use before submitting for sanction his proposals as to the precise standards that should be adopted in particular districts or groups of districts." The Government of India in May 1903 replied that "the Governor General in Council has considered very carefully the proposed amendment of the Weights and Measures Act, and is advised that it is not necessary for the purpose which the Government of Bombay have in view; a purpose, * * * * * with which he is in the fullest sympathy. It is true that any weights and measures prescribed under the Act must be multiples or submultiples of the primary standard of weight prescribed by section 2. But it does not follow that any weights and measures prescribed otherwise than under the Act must necessarily conform with that standard, and in fact the Government standard maund, which is authoritatively prescribed for use on all Guaranteed and State Railways, and in the Government returns, weighs 82½ lbs and the Excise Act (No. XII of 1896), section 3(m), makes use of a seer of 80 tolas, while the Municipal Acts of Burma and the Central Provinces empower Municipal Committees to prescribe the standard weights and measures to be used within the Municipality. In the case of the Burma Act it is true that the power is expressly conferred 'notwithstanding the provisions of Act XXXI of 1871.' But it does not appear that the existence on the Statute Book of the proviso to section 4 of the Indian Weights and Measures of Capacity Act forms any real obstacle to the introduction of any measure of the nature contemplated which the Bombay Government may eventually decide to be desirable. As yet no notification has been issued under any section of the Act, which therefore is at present and will in all probability remain a dead letter; and as in these circumstances its amendment would be inadvisable and might be embarrassing, the Government of India would prefer that the Government of Bombay should consider the question independently of the provisions of that Act. If it should eventually be proposed to legislate in contravention of the provisions of the Act, this can always be done with the sanction of the Governor General, under section 5 of the Indian Councils Act, 1892 (55 and 56 Vict., cap. xiv)."

4. We have seen (Chapter II, paragraph 26) that at this time the Government of India were not prepared to consider compulsion with a view to securing a uniform system of weights and measures. The provisions of the Municipal Acts, referred to in paragraph 3, gave municipal bodies power to prescribe weights and measures for the use of the people whom they represented, and this was "as far as the Governor General in Council was prepared to go." It was suggested that the Government of Bombay might consider the desirability of making provision for this in their Municipal Acts, but was not thought desirable to confer a similar power upon the District Boards, since "the residents of rural areas were as a rule less intelligent and more suspicious than the people of the towns." The letter from the Government of India concluded, "it would probably be possible in all cases to adopt the tola as the basis of the standard, and even this would be one step towards that uniformity which is so eminently desirable. The Government of India are, therefore, of opinion that in all action of the nature under consideration the standard tola of 180 grains should form the basis of the proposals."

5. A copy of this letter was sent to all Local Governments. The United Provinces accepted the opinion of their Board of Revenue, with regard to this letter, that, however desirable uniformity may be in the matter of weights and measures, no steps should be taken until popular support is assured. The Director of Land Records and Agriculture was of opinion* that for assimilation of weights standardization machinery must be created in order to provide that unauthorized weights are not used and without such machinery standardization would merely have the effect of increasing the existing diversity, as the people would go on using their own weights and there would be, in addition to, those already used, the standard weights. The Director also pointed out that if the work of inspection was left to the existing staff, either the police, the patwaris

* No. 1635-183, dated the 25th May 1903.

or the municipal and town officials, there would be danger of shop-keepers and others being harried by the subordinate staff, but that there was no doubt that the railway system was working steadily in the direction of unification, and that the time for general prescription was coming in these Provinces.

6. The Chamber of Commerce of Madras in December 1905 addressed the Government of India on the question of the feasibility of reopening the question of

prescribing a uniform system of weights and measures throughout India. The Chamber enclosed a copy of a letter which had been addressed to the Government of Madras by the United Planters' Association of Southern India. The Chamber recommended that another attempt should be made to establish a more or less uniform system, and thus tend to remove the disabilities of which the planters and the mercantile community complained. The Government of India in January 1906 informed the Chamber that the question of prescribing a uniform system of weights and measures throughout India would not be reopened for the present, and that their policy in this matter was explained to the Government of Bombay in their letter of 25th May 1903 quoted above.

7. In August 1907 a proposal was submitted by the Government of Burma for the standardization of the viss, which is the weight in universal use in Burma. The proposal was to alter the equivalent of 140 tolas instead of $141\frac{1}{2}$ tolas. The viss of 3.65 lbs had been usual in commercial practice, and was incorporated in official manuals as the standard of weight for taxation and kindred purposes. This prescription had been recognized in the by-laws of six municipalities, including Rangoon, Moulmein and Bassein, prescribing weights and measures under section 142(c) of the Burma Municipal Act, 1898. No official declaration, however, of the standardization was issued. The Lieutenant-Governor in suggesting a viss of 3.60 lbs. did not think it desirable to enforce the standard throughout the country, but merely to notify that in all Government transactions the weight of the viss should be taken as 3.60 lbs or 140 tolas. Municipal Committees would alter the viss required by their by-laws to 3.60 lbs. and the Local Government would exercise its power to veto by-laws which do not conform to this invitation. In September 1907 the Government of India, while recognizing that the suggestion was made with a view to obtaining a more satisfactory multiple of the tola weight than the present viss, noted the hostile view expressed by the Rangoon Chamber of Commerce and the Rangoon Port Commissioners and refused sanction to the proposal doubting whether the change would be generally accepted and carried into effect without difficulty and whether the advantage to be gained was commensurate with the inconvenience likely to arise from the disturbance of the existing standard of weight.

In September 1908 the Local Government again addressed the Government of India urging a reconsideration of the above order. The Lieutenant-Governor believed that the proposal to standardize the viss at 3.60 lbs. or 140 tolas would in the long run be of great convenience to trade in the province. "The proposal has the approval, so far as His Honour is aware, of the Rangoon Municipal Committee, the Port Commissioners of Rangoon, the Burma Chamber of Commerce, and the Rangoon Trades Association, representing every section of the commercial community, and of such firms as Messrs Finlay Fleming and Company, the Agents of the Burma Oil Company. The Agent of the Burma Railways has expressed his willingness to adopt the new standard on receipt of twelve months' notice. The feeling of the general public on the subject may be gauged by the enclosed extract from the 'Rangoon Times' of the 9th May 1908. These expressions of opinion show clearly that though the proposed change may produce some inconvenience at first, the inconvenience is in no way commensurate with the advantages which will eventually result from its adoption and that those advantages will constitute more than a merely nominal gain." Accordingly in January 1909 the Government of India sanctioned the proposal, pointing out that it was desirable that the alteration should not be introduced suddenly, and that for this purpose 12 months' notice of the intention of Government should be given.

8. In 1909, the Upper India Chamber of Commerce, Cawnpore, proposed

The proposal of the Upper India Chamber of Commerce regarding compulsory marked weights and measures in buying and selling precious stones and metals and articles made thereof (1909)

that the use of marked weights and measures of distinctive design should be made compulsory in buying and selling precious stones and metals and articles made thereof, in order to check fraudulent practices prevailing among native goldsmiths and silversmiths. "The large extent," said the Chamber, "to which investment of savings in the form of jewellery and ornaments is resorted to by the people of this country, and particularly the poorer and more ignorant classes, renders it peculiarly necessary that the public should be given statutory protection, if this can be accomplished without imposing any vexatious restrictions upon trade". The Government of India were unable to agree to the proposal observing that a full statement of the cases of fraud had not been furnished, and that the proposal had been opposed by some of the other Chambers of Commerce which had been consulted by the Upper India Chamber. The policy stated in the letter of the 25th May 1903 was again referred to as applying with equal force to the proposal suggested by the latter Chamber. In November 1911, the Upper India Chamber of Commerce suggested

Proposals of the Upper India Chamber of Commerce (1911)

ed that steps should be taken for the amelioration of the present unsatisfactory condition of the Indian weights and measures. The Chamber believed that in probably no other part of the Empire was trade and commerce so hampered by lack of uniformity in weights and measures, and while no longer advocating the adoption of the decimal system in this country (which it had done for the preceding 20 years) it asked that the Government of India should consider the feasibility of requiring all Railway Administrations in India to adopt, in substitution of the "cumbersome" maund, a unit of 100 lbs. avoirdupois, with convenient multiples and subdivisions based on the decimal system. On the 8th November 1911, the following reply was sent:—"The policy of the Government of India in regard to the standardization of weights and measures is explained in their letter to the Government of Bombay (No. 1653-133-7, dated the 25th May 1903). It will be observed from paragraph 5 of this letter that they were of opinion that, whenever it was possible to do so, the tola of 180 grains should be adopted as the primary standard of Indian weights and measures. They are still of opinion that this standard should be adhered to, and they are not, therefore, prepared to consider favourably a departure from this primary standard, such as would be involved in the suggestion now put forward by your Chamber. * * * The question of adopting a decimal system based on the standard tola as the unit has also been already considered by the Government of India, but the idea was abandoned on account of the serious difficulties it would raise."

9. Events immediately previous to the appointment of the present Com-

The appointment of a Committee to make proposals for the standardization of weights and measures in Bombay (1911).

mittee have already been referred to in Chapter I of this Report. It is, however, necessary to refer at greater length to the inquiry undertaken by the Bombay Government in pursuance of their Resolution No. 1756, dated 23rd March 1911. After pointing out the disadvantages of diversity in weights and measures not only in different districts of the Presidency, but in different towns and even in different parts of the same town, and in reciting the various steps taken with regard to the standardization of weights and measures, the Government of Bombay showed that by Act IV of 1904 Municipalities were given the power to make by-laws for defining standard weights and measures to be used within their limits, though it was considered premature to empower Municipalities to prescribe the weights and measures which alone it would be lawful to use within their districts, or to permit Local Boards to maintain standards of the local weights and measures conformity with which would be compulsory. The question having been pressed upon the Government from time to time during recent years it was decided to appoint a Committee to reopen the question. This Committee was presided over by the Hon'ble Mr. J. P. Orr, I.C.S., and consisted in all of 10 members. The terms of reference have already been referred to in paragraph 2 of Chapter I. The final report was published in May 1913 together with a draft Bill for fixing

standard weights and measures for the Bombay Presidency, and Resolution No. 3899 expressing concurrence in the recommendations of the Committee. Further inquiry was ordered to ascertain whether any modifications of the Bill or of the schedule appended to it are required by local conditions.

10. The final report may be summed up briefly as follows :—The Committee had no hesitation in saying that over the greater part of the Bombay Presidency, the standardization of weights and measures would be heartily welcomed by the people.

The Final Report, May 1913.

(2) Standard weights and measures based on the rules in Eastern Khandesh should be prescribed by Government for the whole Presidency. From Mr. Simcox's report it will be seen that in the course of three years the people of East Khandesh were gradually induced to adopt throughout the district uniform weights and measures of capacity.

(3) Mr Orr's Committee found that his action was so highly appreciated by the people of East Khandesh that Mr. Simcox had no difficulty in enforcing the use of his standard weights and measures to the exclusion of all others, by his own personal influence without the aid of legislation.

(4) The introduction of weights and measures should not be left to local option. It was pointed out that if it were open to particular taluqs to stand out against uniformity, or if new weights and measures were adopted in neighbouring areas at different times there would certainly be the disturbing element of uncertainty and confusion. Traders in several places were prepared to consent to the standardization of weights and measures on the understanding that the same weights and measures were introduced simultaneously over the whole Presidency.

(5) The weights to be prescribed for the whole Presidency should be those of East Khandesh which were based upon the tola of 180 grains. The maund was the railway maund of 40 seers or 82½ lbs.

(6) With regard to measures of capacity the Committee reported that in East Khandesh the standard dry measure is connected with the standard weights by the prescription that the 'seer' measure must be a vessel of such capacity as to exactly contain 2 seers weight of water and that it would probably be found that in most other districts there was originally some such connection between the local weights and measures, for a similar principle is prescribed in Bengal Regulation VII of 1833 for the relation of dry measures of capacity to weights. "We find that in 1848 the Bombay Government adopted the standards prescribed in that Regulation. We think that this connection should be maintained wherever any trace of it is found. One great advantage about it is the facility it affords for testing measures, whatever their shape, wherever custom is in favour of struck measures. Where the custom is to measure by heaped measures, there must be additional prescription as to the shape and area of the mouth of each standard measure. The East Khandesh standard measures are cylinders with diameters of 7 inches for the adholi (2 seers) measures, 5 inches for the seer, 4 inches for the ½ seer and 3 inches for the ¼ seer. We approve the prescription of a diameter containing an integral number of inches as more easily ascertainable than such lengths as 4⅜ inches, which appears * to be the diameter of the seer measure in use in Gadag Betgeri. There is, however, no need to insist on the universal adoption of cylinders throughout the Presidency. In some districts traders prefer measures of the hour-glass shape as more easy to handle, and, since the water test is as easily applicable to these as to cylinders, there is no objection to them, provided that, if they are prescribed as standard measures, the diameter of their mouths is fixed in accordance with the commonest custom, where heaped measure is the rule."

(7) The system of weights and measures in any area should be as nearly as possible similar to the best of the prevailing systems in that area. Undue diversity of standardization will be sufficiently guarded against if Government include in their schedule of prescribed weights and measures not only those in

* Resolution (General Department) No. 2511, of 29th April 1911.

use in East Khandesh, but also those which bear an easily ascertainable relation to the East Khandesh standards. In Gujarat, the seer is half the Government seer, *i.e.*, 40 tolas, and this 40-tola seer is that prescribed by the Baroda Government.

(8) Although Mr. Simcox's system has been introduced without legislation the Committee felt that it was *want of legislation* for the maintenance of those standards already prescribed that led in the course of time to the gradual divergence therefrom in actual practice. Government should, therefore, confirm by legislation what has been done so far by executive action only. Government accordingly should undertake legislation to secure for themselves the power to prescribe the weights and measures which alone should, after 6 months' public notice, be used in specified areas in retail and wholesale trade in all commodities, not specially exempted by Government. After that date any Government, Local Board or Municipal Officer should be empowered to impound and send to the nearest Magistrate or Police Sub-Inspector for destruction any weight or measure other than those specified. The new Act should also definitely prescribe a penalty for use of any but the prescribed weights and measures in order to cover cases to which Chapter XIII, Indian Penal Code, does not exactly apply and in which prosecution may be necessary in addition to destruction of false weights and measures.

(9) The duty of providing for inspection and stamping of weights and measures or of supplying standards in the several market towns, and of giving facilities to traders for the purchase of new weights and measures during the six months' notice period should be left to Local Boards and Municipalities. Power to make rules and by-laws in respect of these matters, and as regards the shape, size and material of measuring vessels and weights, may perhaps be given to them, provided that draft of such rules and by-laws shall have been brought to the notice of traders, etc., at least 3 months with a view to their bringing any objection to such weights or measures to the notice of the sanctioning authority before sanction is given.

11. It may be interesting to note that from 1905 to 1907 the question of the standardization of measures was again under the consideration of the Chief Commissioner of the Central Provinces. In October, 1905, a letter was addressed to all Commissioners in which a scheme was sketched for standardizing local measures asking for reports on the following points :—

Attempts at assimilation of weights and measures in the Central Provinces (1905-1918)

- (1) Whether the attempt to prescribe the use of the *katha*, and *kangan pail* (see Chapter II, paragraph 26) has succeeded or failed to such an extent as to justify a change of policy in the direction of standardizing the measures in use in each local area or district.
- (2) If a change on the lines suggested is desirable a list of the different measures in use in each local area of their Divisions should be drawn up specifying the approximate weights of the staple grain which they are supposed to contain and their corresponding cubic capacity in ounces or tolas of water.
- (3) Whether it would be advisable to legislate for the purpose of giving District Councils the same powers as are already possessed by Municipal Committees or at least the more limited power of standardization such as is indicated in the proposed scheme.

After an elaborate inquiry it was proposed that uniform weights and measures should be made and distributed locally. The orders, however, of the Chief Commissioner (Sir Benjamin Robertson) were that a decision should await the result of the inquiry undertaken by the Government of India.

12. It may be convenient here to summarize briefly the legislation undertaken by Municipalities at various times. We have already referred to Regulation XII of 1827 in the case of Bombay. By section 20 it is laid down that "the

Action taken in Bombay.

District Magistrate shall keep standards of such weights and measures as are used in retail dealings throughout the district under his charge and they shall be open to inspection by anyone who may desire to examine them." This section applies throughout the whole of the Bombay Presidency including Sind except scheduled districts. In section 418 (1) of Act III of 1888 it is prescribed that "the Commissioner (the Municipal Commissioner of the City of Bombay) shall from time to time provide such local standards of weights and measures as he deems requisite for the purpose of verification of weights and measures in use in the city, and shall make such arrangement as he shall think fit for the safe keeping of the said standards." In Act IV of 1901, as we have seen, Municipalities were given the power to define and to prescribe the standard weights and measures used within their limits. Ahmedabad, however, appears to be almost the only Municipality (besides Bombay) that has any definite by-laws on this subject. (See Chapter IV, Bo., paragraph 26).

13. In Bengal, according to Act IV of 1886, section 55, "the Commissioner of Police shall keep in his office standard weights and measures; and weights and measures shall be held to be false when they do not agree with such standards". In 1905, Mr. L. P. Shirres, Secretary to the Government of Bengal, addressed* the Government of India proposing certain draft amendments in the Bengal Municipal Act, 1884, regulating the standardization of weights and measures in Municipalities. (The origin of this was a copy of the letter forwarded to the Government of Bombay already referred to.) The opinions of local officers in Bengal with regard to the action to be taken were that the mere standardization of the existing weights and measures, where these differed from the Government standards, would be a retrograde step tending to stereotype the variations which at present exist and which would render the attainment of uniformity in the future impossible. It was decided, however, to amend the Municipal Act so as to give Municipalities power (1) to prescribe the use of Government standard weights, *i e*, the maund of 40 seers each of 80 tolas of 180 grains, to enforce these standards and to prohibit the use of other weights within the Municipality; and (2) to prescribe 18 inches as the length of a háth or cubit for measuring commodities other than land.

A considerable body of opinion was in favour of another proposal, namely, that Government should be empowered by legislation to introduce a fixed standard of weights into the Municipalities of the province; the standard to be introduced being the Government standards of 180 grains to the tola, 80 tolas to the seer, and 40 seers to the maund. The Lieutenant-Governor believed that the rapid growth of railway communication in Bengal made it a matter of urgency that at least a first step should be taken in the path leading to uniformity. The Government of Bengal, while sympathizing with the proposal prescribing standard weights and measures for municipalities, merely asked for permission to amend the Municipal Act as follows:—

After Section 253 of the Bengal Municipal Act, 1884, to insert the following clauses:—

253A. The Commissioners at a meeting expressly convened for the purpose and of which due notice has been given may, by an order published in the manner prescribed in section 354, direct the use within the Municipality, on and from a date to be specified in the order not less than six weeks from the date of such order,

(a) of Government standard weights, that is to say, of a seer consisting of 80 tolas and of a tola consisting of 180 grains; or

(c) of both the weights and the measure of length mentioned in clauses (a) and (b), respectively,

and may at the same time by such order prohibit the use within the Municipality of weights or of a measure of length other than those mentioned in the order.

* Letter No. 2837-M, dated 16th December 1905.

253B. Where an order has been published under the preceding section the Commissioners may provide standards of the weights and measures therein mentioned for the purpose of verification of weights and measures of length in use in the Municipality, and may make such arrangements as they may think fit for the safe keeping of the said standards

The Commissioners may also provide from time to time proper means for verifying weights and measures.

The Government of India approved generally of these clauses but considered that the last part of clause 253A was "framed in such indefinite terms that it might be thought to give power to prohibit the use not only of maunds, seers, tolas and cubits which do not conform to standard, but also of any measures of weight or length other than the particular measure specified in the first part of the clause." They requested that this should be corrected. On the whole, however, nothing practical has so far been effected as regards the standardization of weights and measures in Bengal.

14 In Madras city, there are similar provisions to those in section 55 of the Calcutta Police Act, the false weights and measures being destroyed. [See Act I of 1884, Madras City Municipal Act, section 354 (b)]; Act III of 1888, Madras City Police Act, section 32). Elsewhere in the Municipalities of the Presidency with the exception of Coonoor there are no by-laws or other regulations regarding weights and measures. In Coonoor, a by-law to the effect that "weights and measures bearing the Government stamp alone shall be used in all markets" is still in force, though the similar by-laws which were in force in certain other Municipalities were repealed in 1906. It is, however, under consideration to empower Municipalities to undertake the regulation of weights and measures.

The regulation of weights and measures is, however, undertaken to a very large extent in Madras by the Board of Revenue under executive order. In 1871, the question of testing and stamping measures was first taken up. At first, there was very great confusion and the orders on the subject were somewhat obscure and much misunderstood. Apparently, very diverse measures were stamped in different districts, and even in different parts of the same district, and the method of testing was not clearly defined. This latter appears to have been sometimes carried out by means of rice, at others by water and at others again by horse-gram, and uniformity was not secured for many years in spite of repeated orders of the Board. At present, certain weights and measures of length and of dry and liquid capacity are stamped in almost every district in the Presidency. These vary to some extent from district to district, the object having been to have in each district a series of stamped weights and measures bearing definite proportions to well-known standards and yet not differing so much from those in previous use as to make their introduction the cause of any violent change from the weights and measures in prior use. The variations are, however, not very great, the most usual weights stamped are the viss, seer and palam of 120, 24 and 3 tolas, respectively, with occasionally a seer of 21 tolas (Bellary), a *rathal* of 40 tolas (South Canara), and the British weights (Godavari). For measures of length the British yard is stamped and for dry measures the most usual unit is the Madras measure supposed to hold 120 tolas of second-sort rice when filled 'struck', but in some districts it is the seer measure holding 80 tolas. For liquid capacity (usually only for Excise purposes) the gallon is the usual unit, but in South Canara there are certain local measures based on a *kutti* holding 108 tolas. In addition to the above units various multiples and sub-multiples are also stamped. The actual work is done by various stamping parties under the control of the Collector. In Ganjam and Malabar no action of this sort is taken. There is no legal sanction requiring the use of stamped weights or measures, but efforts are made to induce people to get their weights and measures stamped, and if it is a question of an under-weight or under-sized measure the case is viewed less favourably if such weight or measure

is unstamped; still the proportion of weights and measures that are stamped is perhaps not very large save in some of the towns. Further details will be found in the digest of evidence (Chapter IV, paras. 9 to 15).

15. In the Central Provinces, Act XVIII of 1889, section 84, lays down that "a (Municipal) Committee may from time to time at a special meeting make rule after previous publication consistent with this Act for prescribing the standard weights and measures to be used within the Municipality." Accordingly in March 1896 the Chief Commissioner of the Central Provinces sanctioned the substitution by the Municipal Committees of Ramtek, Umrer, Khapa, Sanoner and Mowar, in the Nagpur district, of the standard measures of *kangans* and *kathas*, for those then in use in these Municipalities, and the adoption of rules whereby no measures should be used by any measurer licensed by the Municipal Committee or by any person in any bazaar or shop, or public place within the Municipal limits, except pails, $\frac{1}{2}$ pails, $\frac{1}{4}$ pails, $\frac{3}{8}$ pails, kurohs or kathas issued by or under the orders of the Municipal Committee. Besides, the President, Vice-President, and Secretary, any Member of the Municipal Committee and such official or officials of the Committee as were authorized in this behalf can inspect or examine the measures used by licensed measurers or by traders in the public bazaars and other public places within the municipal limits. Every licensed measurer and trader was bound to produce the measures used before such officers, and all measures differing in capacity from the standard measures were to be confiscated. Besides confiscation of the false measures, any breach of the above rules was punishable, on conviction before a Magistrate, with a fine extending to Rs. 50

(i) English standard weight, or					
(ii) Mound	...	...	40 seers.		In 1903, by-laws were
Half mound	...	...	20 "		made by the Municipal Com-
Quarter mound	...	...	10 "		mittee of Jubbulpore for
Panseri	...	...	5 "		regulating the use of standard
Half panseri	...	...	2½ "		weights. The weights noted
One-fourth panseri	...	...	1½ "		in the margin were prescribed.
One eighth panseri	...	...	¾ "		
Chatak	...	...	5 tolas.		
Half chatak	...	...	2½ "		

A tola was equal to 180 grains or the full weight of a rupee. As regards inspection and punishment of users of false weights the notification was similar to that of the Municipalities of Nagpur referred to above.

Mound	...	...	40 seers.		In 1908, by-laws made
Half mound	...	...	20 "		by the Municipal Committee
Quarter mound	...	...	10 "		of Chanda were confirmed.
Seer	...	...	16 chataks.		Under these the standard
Half seer	...	...	8 "		weights were as in the margin.
Quarter seer	...	...	4 "		A tola should be the equiva-
One eighth seer	...	...	2 "		lent of 180 grains or the full
Chatak	...	...	5 tolas		weight of a rupee. The rules regarding the
Half chatak	...	...	2½ "		inspection and punishment of users of improper weights are the same as

In 1911, the Chief Commissioner confirmed the by-laws made by the Municipal Committee of Umrer regarding the paili Measure. By these the paili was to contain 100 tolas (of what is not stated). The Municipal officers were empowered to inspect the measures used by licensed measurers, brokers or traders and the use of false measures was made liable to punishment by a fine extending to Rs. 50.

16. In Burma, also action has been taken on more or less similar lines under section 143 of the Burma Municipal Act of 1898 and the weights and measures notified for use in a few typical Municipalities of Burma are given as examples:—

(1) In 1909, by-laws were sanctioned prescribing the pound as the original standard of weight in the Akyab Municipality. The viss, whether used for weighing liquids or solids was to be a weight equal to 3.60 standard pounds or 140 tolas, and the standard of length the yard. The viss and the pound weight were to be tested in the month of January in every year by

persons appointed by the Municipal Committee of Akyab, who were to certify that they accurately corresponded with the weights marked thereon, and they were then to be considered as standard weights. An officer was to be appointed by the Municipal Committee at Akyab from time to time in order to test and verify weights brought to him. The pound weight and the standard measure of one yard were to be certified by the Board of Trade in England.

(2) In Yamethin, the standard weight of the viss was prescribed to be 3.60 lbs. or 140 tolas and the use of weights conforming to this standard was to be compulsory in Government transactions under by-laws framed by the Municipal Committee.

(3) In Ngathaingyaung-Daunggyi, the standard of weight is the viss equal to 3.60 lbs. or 140 standard tolas. In the office of the Municipal Committee were to be kept a standard viss and a standard tola weight certified by Government, made of brass and stamped with the weight thereof.

(4) In Sandoway, the standards prescribed were similar to those prescribed for use in Akyab.

(5) In Myingyan, the standard of weight was to be the viss equal to the above mentioned standard. The Secretary of the Municipal Committee was empowered to test and verify the weights brought to him by any person, and he was entitled to issue a certificate of their reliability, on receipt of a fee of one anna in every case. The standard of length was to be the yard and of capacity the quart. These measures of length and capacity were tested whenever necessary by a comparison with the Mandalay Municipality standard yard and quart measures. These rules were to be adopted from the 1st April 1910.

(6) In 1909, it was notified by the Moulmein Municipal Committee under section 201, sub-section (1) of the Burma Municipal Act, 1898, that "no person shall use any weight or measure of a denomination ordinarily applicable to any of the weights and measures referred to in these by-laws or any subdivision or multiple of any such weight or measure in the same system of weights or of measures (as the case may be), unless it is in conformity with the standard prescribed by these by-laws in respect of such weight or measure". In 1910, a revised by-law was framed under which the viss was to be made 3.60 of the standard pound avoirdupois.

(7) The standard of weight for use within the Pegu Municipality was to be the pound, and the weight of the viss equal to 3.60 standard pounds or 140 tolas. A set of weights was to be kept in the Pegu Municipality for verification. The standard of length was to be the yard and the standard measure of capacity the quart, both of which were to be certified by the Board of Trade in England. It was ordered to keep in the Office of the Pegu Municipality a set of measures equal to 4, 3, 2, 1, and $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$ of such quart (each of which was to be stamped with the capacity thereof).

(8) With effect from 1st April 1910 the standard weight of the viss was to be 3.60 lbs. or 140 tolas in the following Municipalities also:—Mergui, Henzada, Yandoon Minbu, Allanmyo-Ywataung, Taungdwingyi, Salin, Pakokku, Thence, Ma-ubin, Letpadan, Gyobingauk, Shwegyin, Kyaukse Tavoy Bassein and Paungde

Very little done elsewhere

17. Elsewhere very little has been done in this connection, and what has been done has been mostly by executive order. [See Chapter IV, U. (P., 14.)]

CHAPTER IV.—EXISTING STATE OF WEIGHTS AND MEASURES,
BEING A DIGEST OF THE EVIDENCE RECEIVED ON THESE
MATTERS.

UNITED PROVINCES.

The weights and measures referred to in this Chapter were for the most part reported by Collectors of districts; ^{Sources of information} in addition to the information so obtained which in some cases was very decidedly meagre, use has been made of information obtained from the various witnesses examined, and also from the District Gazetteers which, in this province, contain a very large amount of information on this subject.

2. *Measures of weight.*—For all ordinary commodities there is practically only one table which runs:— 5 tolas = 1 chatak; 16 chataks = 1 seer, and 40 seers = 1 maund. In a few places there is a kachha maund of 16 seers. For gold, drugs and valuable articles the table runs 8 khaskhas (poppy seeds) = 1 chawal (grain of rice); 8 chawals = 1 ratti, usually represented by a *ghunchi*, (the seed of the *Abrus Precatorius*); 8 rattis = 1 másha, and 12 máshas = 1 tola. In a few places the ratti is divided into 20 bisas, and a tánk of 24 rattis is used.

The variations of the larger weights are usually based on the seer which is of a varying number of tolas (of 180 grains); it is very rare to find a seer based on a tola not of this value, Ghazipur reporting the only instance where a seer based on a tola of 216 grains is said to be used. Even where the seer is based on the weight of a number of coins other than the Government rupee its equivalent in such rupees is usually known. On the other hand, the tola for weighing gold and Indian drugs is a very variable thing. It is, however, usually expressed as so many rattis in excess of the weight of the rupee. As a rule, the excess is of from 1 to 6 rattis, though occasionally larger tolas (up to one of 1½ rupee-weights or 216 grains) are found, and in a few instances gold tolas of less than a rupee's weight

3. No regularity of local distribution can be traced as regards the gold tolas, and the distribution of weights by locality must depend solely on the larger weights. Based on these the provinces may be divided into six tracts:—

(1) Districts in which the 80-tola seer is used to the almost complete exclusion of any other weight:—Agra, Aligarh, Almora, Banda, Bulandshahr, Dehra Dun, Etah, Etawah, Jalaun, Jhansi, Meerut, Muttra and Muzaffarnagar. With the exception of Almora, which is isolated from the main area and in respect of measures other than those of weight falls rather into group (3) where it will be considered, this tract forms the western and northern part of the province.

(2) Districts in which the 80-tola seer is considerably used, but side by side with numerous local seers and in the case of the large commercial centre of Cawnpore a very large number of maunds for special commodities:—Allahabad, Benares, Cawnpore, Fatehpur, Hamirpur, Mirzapur, Sultanpur and Unao. This tract forms the south-west of the province.

(3) Districts in which the 80-tola seer is comparatively little used, save for official transactions, and in the larger towns to some extent, being replaced by some other seer dependent on the tola, usually larger than the 80-tola seer, and as a rule somewhere in the neighbourhood of 100 tolas:—Almora, Bareilly, Bijnor, Budaon, Garhwal, Kheri, Moradabad, Naini Tal, Pilibhit, Sabaranpur and Shejahanpur, *i.e.*, Rohilkhand with some adjoining districts. Almora will for reasons given above under group (1), be placed in this group.

(4) A small group of districts intermediate between (2) and (3):—Farrukhabad, Hardoi and Mainpuri.

(5) Districts in which the 80-tola seer is little used save in official and railway transactions, though as a rule known as the 'Sirkari' or Government

weight, but in which the local seers are based on the weight of a varying number of gandas or sets of four of various local coins, and not on the tola of 180 grains though their equivalent in rupee weights is usually known —Azamgarh, Bahraich, Ballia, Basti, Ghazipur, Gorakhpur and Jaunpur. This tract forms the extreme east of the province, and the weights thereof extend into the adjoining parts of Bihar.

(6) Districts in which the local weights were apparently based on a system similar to that of the weights of group (5) but in which the use of the 80-tola seer has spread considerably, and the local weights have almost entirely come to be deemed as based on a definite number of tolas, though often still called after the coin from which they originated —Bara Banki, Fyzabad, Gonda, Lucknow, Partabgarh, Rai Bareli and Sitapur; thus including the greater part of Oudh.

It is of course very difficult to lay down precise boundaries between the various groups, certain districts being almost as fit for one as the other. Thus, Bahraich and Sultanpur might possibly almost go into group (6), and Benares probably would have gone there some 20 years ago, but the origin of the local seers seems now to have been forgotten.

4. There is little necessity to go into further detail here as regards the weights in use in groups (1) to (4).

Origin of various weights.

Group (5) may, however, be dealt with in somewhat greater detail, as the diversity there is very much greater and the difficulty of effecting any change proportionately greater also. The typical district of this group is Gorakhpur, where matters are further complicated by a system of measures depending originally on a local seer of some particular kind of grain. The basis of the weights here is the ganda (set of four) of Gorakhpuri pice. These pice are shapeless lumps of copper made at Butwal in Nepal. A varying number (whole or fractional) of gandas was taken to form the local seer (which is more often than not different for different commodities also). Apart from the fact that when new the weight of these pice is by no means constant, as they have ceased to be coined, the supply of full weight ones is very short and short weight pice are used; this is apparently sometimes remedied by adding more pice to make the weight up to that of the original seer, then that increased number is used as the basis of a new seer and so on. On top of this system the 180-grain rupee has come, and as a result seers of various numbers of gandas of rupees have come into use, the rupee being by some regarded as equal to the pice in weight and by others not so, the usual ratio being apparently 7 pice equal to 5 rupees. The result is the utmost confusion. Expressed in gandas the seers are almost innumerable, while when converted into terms of standard tolas each seer develops into several more according to the ratio assumed as existing between the gandas of pice and rupees.

Weights based on the Gorakhpuri pice are prevalent also in Azamgarh, Ballia, Basti and Jaunpur. In Azamgarh, this pice is known as the *bhar*, a word more often elsewhere used to denote the weight of the Government rupee.

In other districts—especially Bahraich, Bara Banki, Fyzabad, Gonda, Lucknow, Partabgarh, Rai Bareli and Sitapur—the basis of the local weights is traceable to the ganda of Maddusahi pice, which is reckoned as weighing 270 grains or $1\frac{1}{2}$ tolas. This relation has introduced a fresh element of confusion, as the ganda, which ordinarily means a set of four, being found equal to the weight of a set of six standard rupees has in some places come to mean a set of six. Elsewhere (*e.g.*, Benares and Gonda) local weights are traceable to the weight of a ganda of Farrukhabadi rupees, weighing 173 grains each. But save as regards the Gorakhpuri pice in Gorakhpur and its immediately adjoining districts the local weights are coming to be regarded as of so many standard tolas, and even in Gorakhpur this method of reckoning is coming into fashion. It may, therefore, be safely said that for very nearly the whole province the weight of the 180-grain tola is the one common unit whence local weights are derived by multiplication or by division.

5. As already mentioned jewellers' weights are usually based on a special and variable tola. Two frequently used and one rarer tables are reported.

Jewellers' weights.

These are:—(1) 8 khaskhas (or poppy seeds) = 1 chával (or grain of rice) 2 chávals = 1 jau (barley corn); 4 jaus = 1 ratti; 8 rattis = 1 másha; 12 máshas = 1 tola. (2) 20 bissas or biswas = 1 ratti; 24 rattis = 1 tánk or tankia, and 4 táńks = 1 tola; and (3) (more rare) $1\frac{1}{2}$ máshas = 1 damri; 2 damris = 1 chadám; 2 chadáms = 1 dhela and 2 dhelas = 1 tola. A generalized table is therefore—

8 khaskhas	...	... = 1 chával.
5 bissas or 2 chávals	...	... = 1 jau.
4 jaus	...	... = 1 ratti.
8 rattis	...	... = 1 másha
$1\frac{1}{2}$ máshas	...	... = 1 damri.
3 máshas or 2 damris	...	... = 1 táńk or chadám.
4 táńks	...	... = 1 tola.

The ratti, of which 64 go to the tola, has not been reported in this province. From Agra a peculiar method of weighing pearls by the *cháva* is reported. This weight appears to become smaller as the size of the pearl increases so that the value of the pearl is always in a fixed ratio to the number of *chávas* contained therein.

Other weights of this class reported are the *lal* equal to $1\frac{1}{2}$ rattis reported from Ballia, and the *dram* and *miskal* given as $3\frac{1}{2}$ and $4\frac{1}{2}$ máshas, respectively, from Shahjahanpur. Gorakhpur reports a peculiar series of weights as used for drugs only

The ratti is frequently regarded as represented by the seed of the *Abrus Precatorius* usually known as the *ghunchi*.

6 The weights actually in use are as a rule.—Of the 80-tola series— $\frac{1}{4}$, $\frac{1}{2}$, 1, 2, 4 and 8 chatáks, 1, 2, 5, 10 and 20 seers and 1 maund; of the 100 tola series— $\frac{1}{4}$, $\frac{1}{2}$, 1, 2, 4 and 8 chatáks, 1, 2, 5, 10, 20 and 32 seers; of jewellers' weights—2 and 4 rattis, 1, 2, 4 and 6 máshas, and 1, 2, 5, 10, 20 and 50 tolas. The larger weights of the 80-tola series in the larger bazaars are almost invariably fairly well-made cast iron weights usually circular. They are manufactured at Agra or Calcutta. The 100-tola series weights are as a rule locally made, and of rough workmanship. In rural areas and for cheap and bulky articles even in towns, weights of stone are frequently used. For jewellers' weights a few have well-made weights of brass, etc., but most have a miscellaneous collection of coins or portions thereof (two-anna pieces cut into halves as quarters, foreign coins, etc.), buttons, pieces of china, etc., and seeds.

7 A few opinions have been expressed as to the amount of substantial inaccuracy among weights, thus some witnesses in Agra put the proportion at 2 to 15 per cent, others in Banda said 5 to 25 per cent. From Benares specimens of three seers of 72, 78 and 80 tolas with nothing whatever to indicate that they were not all of the same weight were received.

Some examples of different weights for buying and selling were given:—An Agra witness reported the simultaneous use of yards of 36" and 38 $\frac{1}{2}$ "; from Etah it is reported that an extra $\frac{1}{2}$ seer is added to the maund on occasions; in Mirzapur the seer for the purchase of milk is to that for sale as seven to four; and the use of different weights by the same trades for purchase and sale is also reported from Gorakhpur.

8. *Measures of length*.—The full table appears to be:—3 or 4 jaus (barley-corns) or 8 chávals (rice-grains) = 1 angul (digit); 3, 4 or 5 anguls = 1 girah; 4 girahs = 1 baliaht (span); 2 balishts = 1 hath (cubit); 2 haths = 1 gaz (yard). The original base of this would appear to be the hath which is reckoned to be the distance from the elbow to the tip of the middle finger. It accordingly varied considerably. Now, however, the gaz is becoming more and more assimilated to the British yard of 36", and the other measures are either becoming fixed in

accordance with this sized yard or are dying out, being in some places replaced by the British inch and foot, though not to anything like the extent that the British yard has replaced all other yards. Of these other yards there are a great number as will appear from the statement. The smallest measure called a gaz is the yard of 24" in Garhwal, and the largest that of 45" in Banda and Fyzabad, while in between these two yards can be found at almost quarter inch intervals.

Another table of length measures which is fairly widely current is as follows:—4 pains=1 sut; 4 suts=1 pan; 4 pans=1 tasu; 24 tasus=1 gaz. This table appears to be mainly used for masonry and carpenters' work, and the yard should apparently be the Imarati or Mi'mari gaz of 33" or thereabouts. The districts which report it practically all lie in the Agra, Meerut or Rohilkhand divisions, and the variations are only from 32½" to 34", 33" being the most usual length. It appears further to be identical with the Shajahani gaz.

Another fairly definite yard is that known as the Ilahi or Akbari gaz. It is reported in the District Gazetteer of Benares that this yard was invented by the Emperor Akbar for measuring land, and should apparently be about 33½". It seems, however, to have partly become confused with the Imarati gaz, and partly to have become mixed up with other local units of land measurement, and is now variously reported as from 31½" to 40".

Other special yards are the Sikandari gaz of Bahraich; the Katai gaz of Bahraich and Bara Banki; the Korian-ka-gaz of Cawnpore and the Dankani gaz of Benares, but none of these are of any importance.

9. The larger measures of length are of two kinds, (a) those connected with land surveying and measurement of area, and (b) those used for measuring distances. In the former class fall all the various gathas (or lattas) and jaribs. Many of the indigenous units of land measurement appear to be connected with the pace, which was fixed by Akbar as equal to the Ilahi gaz already referred to. Three of these went to the latta or gatha. On the other hand, however, the latha was often regarded as equal to 5½ bath. This was especially the case in the eastern districts and still more so in the adjoining districts of Bihar. Local lattas and gathas accordingly varied enormously and there have been innumerable disputes and not a few riots over the length of the latta. Settlement officers naturally fixed them at various lengths, and we thus have the Dankani latta in Benares, Ghazipur and one or two neighbouring districts fixed by Mr. Jonathan Duncan, the framer of the permanent settlement in those parts; another is Mr. Lushington's latta of 1,846 yards fixed by Mr. Lushington as Settlement Officer in Ghazipur in 1832. There are numerous others, but the only one of much importance is the gatha of 99", 20 of which make the jarib or chain of 55 yards the square of which is the pakka bigha of 3,025 square yards. Even this is rapidly becoming of little importance, for as each district is resettled areas are being expressed in acres and hundredths thereof, and the necessity for lattas or gathas of any kind is disappearing.

Measures of distance are very uncertain, distances being frequently measured by such terms as (the length of) a well rope, a gunshot, etc. The chief indigenous measure is the 'kos' which varies from about 1½ to 2 miles. For all practical purposes these measures have been totally displaced by the British measures, the knowledge of which has spread widely through the distances being marked along roads and canals.

For our present purposes, however, the important thing to note is that the use of the British yard is more or less prevalent in every district in the province, though that of the foot is very much less extensive.

10. *Measures of area.*—Some information regarding these measures has already been given under measures of length.

Measures of area.

The chief indigenous measure is the bigha which is sometimes said to have been the area which a pair of oxen can plough in a day. It is a very variable unit, and the number of kachha bighas is almost innumerable. Such are generally based, as already noted, on a square each side of which is a certain number of paces, or else of bathas (cubits). For survey and land record purposes the bigha has been invariably standardized and such standard bigha is always known as the pakka bigha. In all but 18

districts the pakka bigha has been fixed at 3,025 square yards or a square each side of which is the chain of 55 yards. This bigha is also used by the opium and canal departments. In Gorakhpur, it is only one of nine bighas used in the land records for various parts of the district. In the districts of Agra, Aligarh, Etah, Etawah, Farrukhabad and Mainpuri the pakka bigha is 2,756½ square yards. A bigha of 2,740½ square yards is used in Allahabad and Azamgarh, one of 2,450½ in Cawnpore and Saharanpur, and one of 4,356 square yards in Banda. The only exception to the rule that the bigha is the standard of area is in the hill portions of the districts of Almora, Dehra Dun, Garhwal and Naini Tal where the indigenous unit was the nali or area which could be sown with one nali or approximately two seers of wheat. This area has been standardized at 240 square yards, or a strip of land 60' × 4' which is well suited to the narrow terraced fields of the hills.

All these measures are, however, apparently destined to fall into disuse, for, as a district is resettled it is usual to replace the standard bigha as the accepted unit for Government purposes by the acre which is divided into a hundred equal parts which are rapidly becoming widely known as 'decimals', though sometimes (as in Bahraich) the decimal means the thousandth of an acre. To begin with, areas are shown in parallel columns in both standard bighas and acres and 'decimals'. This method is now current in the districts of Allahabad, Bara Banki, Bareilly, Basti, Benares, Etawah, Farrukhabad, Gorakhpur, Hamirpur, Jalaun, Jhansi (Lalitpur subdivision only), Kheri, Meerut, Muttra, Pilibhit and Saharanpur.

11. *Measures of capacity (dry).*—Dry measures are but little used in the province, 28 districts have reported

Measures of capacity (dry)

none, while those reported from Agra,

Bareilly, Bijnor, Kheri, Mainpuri and Rai Bareilly are obviously scarcely worthy of the title of measures, being more of the nature of a bundle or headload of bhusa or some such article.

The largest use of measures is made in Gorakhpur, and the neighbouring districts of Azamgarh and Basti. Here they are as complicated as the weights in force in those districts, and are in fact based directly thereon; the sei or sayee being supposed to be a measure that would contain a local seer of grain, usually rice. The variations of the local seer are manifold and so also are those of the sei. In addition, there is a measure known as rajia, which appears to be sometimes merely an alternative name for the sei, and at others a separate measure equal to 1½ seis. In Gorakhpur, these measures are considerably used in commercial transactions throughout the rural portions of the district, in Basti in a similar way but to less extent, while in Azamgarh they appear to be obsolescent.

The next set of measures may be termed the Bundelkhand group; they are specially current in the Bundelkhand districts of Banda, Hamirpur, Jalaun and Jhansi, while traces are found in Allahabad and perhaps Mirzapur, and the measures current in part of Sultanpur are probably derived from these. The basis is the paili, pahli, or paya, a measure containing from 4 to 12 seers of grain, the more usual content being from 4 to 6 seers. (It is doubtful, therefore, if the Mirzapur paili which contains a seer or less is connected with this measure, it seems possible that the name may have been taken therefrom while the actual measure is connected with the Gorakhpur sei.) The use of these measures is confined to rural areas, and even here as a rule to transactions between villagers such as measuring grain for division of crops, loans for sowing, and such like matters. In some parts, however, more especially in Hamirpur and Jhansi they are used to some extent commercially.

The third and last tract where measures are used consists of the hill districts of Almora, Dehra Dun, Garhwal and Naini Tal, excluding the plains portions thereof. Here the basis is a measure termed nali in all the districts except in Jaunsar-Bawar in Dehra Dun where it is known as patha, and which is regarded as containing about two seers of grain, usually wheat. The nali varies somewhat but a standard nali of two seers was fixed by Mr. Beckett, when Settlement Officer of Kumaon, who at the same time fixed the nali of land

(the area which a *nali* of grain would sow) at 240 square yards as already noted. The *nali* itself and the measures based thereon are used to a very considerable extent in the hills for all purposes, though practically not at all in the towns unless it be at the special request of a rural purchaser.

It will thus be seen that there is a very close relation between the measures of capacity and of weight, practically every measure being defined as one to contain some weight of grain.

12. *Measures of capacity (liquid)*—There are practically no liquid capacity measures in the province. The nearest approach to such occurs in Almora

Measures of capacity (liquid)

and Garhwal where the dry measures are also to some extent used as liquid measures, and in Basti and Gorakhpur where the case is similar. Elsewhere there are one or two local measures for special articles, such as milk, sugarcane juice or oil, but in almost every case it appears that the contents are really determined by weight. For the sale of liquids such as milk, oil, and ghi the almost invariable practice is to prepare a series of measures of such sizes as to contain the most convenient amounts expressed in the local weight of the place, the vessels so used bearing the names of the weights they contain. There is of course a separate series for milk from that for oil. If a purchaser has any doubts as to the correctness of the measure he demands that it be weighed, and this is recognized as the proper way of checking.

The only true series of liquid measures are British; liquor is measured by the British Imperial liquid measure, the measures being supplied to the licensees through the Excise department. European liquid medicines are dealt in by British apothecaries' weight. Kerosene oil is almost invariably sold by the reputed quart and pint bottle when quantities smaller than a whole tin of 4 gallons are required.

13 *Measures of cubic content.*—Of these there are practically none save

Measures of cubic content.

British cubic measure which is used by the Public Works Department and to some extent by others, chiefly by contractors. Nearly all the measures that possess local names are based on this measure. Thus the *chatta* in several of the northern districts denotes as a rule 500 or sometimes 600 cubic feet of wood while the *paimana* is from 1 to 25 cubic feet and is generally used for lime. The only indigenous cubic measures reported are the cubic *Imarati gaz* (33" cube) used in Agra for masonry, the *kamri* or cubic *hath* used in Banda for earthwork, and the cubic *balisht* (span) and *hath* reported from Gorakhpur.

14 Very little action has been taken in the United Provinces in the way of

Action taken towards standardization

testing or stamping weights or measures, and such as there has been has been by executive order; there are no regulations or by-laws on the subject. In Azamgarh "a firm was authorized by the District Officer to stamp and sell weights. This is done but the use of such weights is purely voluntary". In Lakhimpur (Kheri) "there is a contractor to whom weights have to be brought annually for examination and correction". In Gorakhpur specimens of the seers of 23, 32 and 36 *gandas* of Gorakhpuri pice are kept in the *Kotwali* but do not appear to be used. In Moradabad an ironmonger is said to receive permission from the District Officer to "manufacture and stamp", and to certify and correct weights, the charge for correcting an old weight being about half that for a new one. A set of standard weights is kept at each *tahsil*.

BENGAL.

Measures of weight.—The ordinary table of weights in Bengal is 4 *kachhas*

Measures of weight.

=1 *chatak*; 4 *chataks*=1 *pao*; 4 *paos*=1 *seer*; 5 *seers*=1 *panseri*; 8 *panseris*=1 *maund* and the most common *seer* in use in connection with ordinary commodities is the *seer* of 80 *tolas*. The *kachha seer* of 60 *tolas* is commonly used for ordinary commodities in retail trade in *Bakarganj*, *Birbhum*, *Bogra* in

Faridpur, Jalpaiguri, Midnapur, Khulna, Murshidabad, Mymensingh, Pabna, Rajshahi, and 24-Parganas and in portions of Bankura, Jessore and Rangpur in the principal marts in Burdwan, in outlying villages in Dacca. The same seer of 60 tolas is also used for agricultural produce in Burdwan, in retail trade in dry fish and milk in Chittagong, for medicines in Dacca, for various commodities in different parts of Dinajpur, and for molasses and tobacco in Nadia. Various other seers are also used in retail trade; 52, 55, 58, 58 $\frac{1}{2}$, 62, 64, 70, 72, 75, 78, 81, 82 $\frac{1}{2}$, 85 $\frac{1}{2}$, 90, 96. In wholesale purchase, special weights are frequently used, for instance a seer of 82 $\frac{1}{2}$ tolas for cotton in Chittagong, for rice, sugar, etc. in Dacca, for paddy, rice and mustard in Dinajpur, for country produce in Midnapur, for paddy, rice, betel-nut, etc. in Mymensingh, and for rice in Bakarganj, Tippera and 24-Parganas; the seer of 120 tolas for sugar in Bakarganj; the seer of 84 $\frac{1}{2}$ tolas for jute in Dacca, Pabna and 24-Parganas and for paddy, jute, rice, mustard, and other grains in Mymensingh. Other seers are used in wholesale trade, such as of 81, 82, 76 $\frac{1}{2}$, 83, 84, 85, 86, 96, 100, 90, 84 $\frac{3}{4}$, 88, 75, 58. Various seers are used in the same district for different purposes, *e.g.*, in Chittagong, there are seers of 16, 52, 60, 64, 70, 75, 80, 82, 82 $\frac{1}{2}$, 83, 84, 85, 86, 90, 96 and 100 tolas, while in Chittagong Hill tracts, trade in cotton is carried on in different parts by seers of 84, 85 and 120 tolas. In some cases, the number of seers to the maund in wholesale trade varies. For instance, in Chittagong it is reported that 30 seers make a maund for purchase of jute from Manikganj. In Jalpaiguri, there are maunds of 30, 42 and 43 seers of 80 tolas each. There are, therefore, several seers in use in Bengal, many being used at the same place for the same or different commodities. In Birbhum district a weight called a pai which is equal to 75, 80 or 110 tolas is used in certain parts of the district. Jute and tobacco in parts of Jalpaiguri is sold by the table 10 seers=1 pati; 4 patis=1 maund; 3 maunds=1 tangi, the seer being 60 or 62 tolas, and in other parts of the same district, jute and tobacco are sold by 10 seers=1 pati, 6 patis=1 maund; and 2 maunds=1 tangi, the seer being 90 or 93 tolas. In the same district, cotton is sold by a Khan of 189 tolas, and also by seers of 168 and 189 tolas, 18 seers being equal to 1 bhar. In 24-Parganas the factory maund is $\frac{1}{3}$ cwt.

The English avoirdupois weights are used in Bakarganj for articles manufactured in England, for coal in Burdwan, for iron, coal, etc., in Chittagong, for various articles of European and American manufacture in Darjeeling, for hides in Midnapur, for corrugated iron, etc. in Noakhali and for English and Continental metals and goods and the export of rice to American ports in 24-Parganas and also for tea in some districts; but there are several districts from which the use of the avoirdupois weights is not reported. Troy weights are said to be used in Darjeeling and 24-Parganas, and apothecaries' weights in retail trade in European drugs in several districts.

The usual table for jewellery, etc. is 4 dhans=1 ratti; 6 rattis=1 anna; 8 rattis=1 masha; 12 mashas or 16 annas=1 tola, the tola being 180 grains. For medicines, the usual table is 4 dhans=1 ratti; 10 rattis=1 masha; 8 mashas=1 tola; but in Howrah, the equation 10 rattis=1 masha is said to be obsolete now and to have been replaced by the equation 12 rattis=1 masha, 8 mashas being one tola. In 24-Parganas, the seer for Indian medicines is generally 64 tolas and the table for Indian medicines is 4 dhans=1 ratti; 10 rattis=1 masha; 12 mashas=1 tola. In some districts, the anna and the bhari are also used for medicines. In Mymensingh, this table is used for medicines but the tola is 192 grains. In Jessore, the tola is in some places 80 grains and in others 160 grains, in others again 180 grains. In Mymensingh, the following tables are used for English medicines.—5 rattis=1 masha; 8 mashas=1 tola and also 10 rattis=1 masha; 8 mashas=1 tola, the tola being 160 grains. In Murshidabad, the masha for Indian medicines=2 annas or 12 rattis, and 8 mashas=1 tola. A long table used in native medicines is reported from Bakarganj district except as already noted. The weights used for jewellery and native medicines are all based on the tola of 180 grains but the values of the ratti and masha vary.

2. *Measures of length.*—The usual table of measures appears to be 3 jabs = 1 anguli 3 angulis = 1 girah ; 4 angulis = 1 mushti ; 4 girahs = 1 bighat ; 2 bighats = 1

Measures of length

hath ; 2 haths = 1 gaj ; 2 gajs = 1 dhan or danda ; 20 dandas = 1 rashi ; 100 rashis = 1 kros ; 4 kroses = 1 jojan. Portions of this table are reported from different districts but probably this represents the original native measure. The gaj is usually 36 inches. These measures are used for cloth and in all ordinary purposes except measuring land. English linear measures are reported as in use in most districts.

Land is measured by the hath, gaj, nal, katha, rashi, or bigha ; 20 kathas always make 1 bigha. The

Land measures

lengths of the hath and the gaj, nal, katha and rashi vary in different districts and in different parts of the same district. For instance, in Mymensingh, a hath varies from 18 to 28½ inches and nal from 7½ to 17½ haths and from 135 to 350 inches ; the gaj is sometimes 24, 25½ or 31½ inches and in other places varies from 6½ to 100 haths or 117 to 1,800 inches. A *rashi* varies from 480 to 3,150 inches while therefore measures of length for all purposes have been generally standardized on the basis of the English linear measures, the measures used in ascertaining the area of lands are still extremely varied.

3. *Measures of area.*—In Government survey and settlement records, the

Measures of area

acre and decimals of an acre are used in Bakarganj, Faridpur and Howrah. The acre, rood and pole, etc., in a few other districts and both the acre, rood and pole and the bigha and katha in Nadia and Bankura. In other districts the bigha and katha appear to be used generally, the bigha being sometimes a local bigha and sometimes the standard bigha of 1,600 square yards. The values of local measures of area are extremely various as they depend on the length of the lagga or nal. The number of haths in the nal and the size of the hath vary even in different parts of the same district. A fairly common table of measures is 20 gandas = 1 chatak ; 16 chataks = 1 katha ; 20 kathas = 1 bigha. This appears to be the standard table. Other expressions for areas are krant, kar, kuni, kani, and done, but the relations between them vary in different districts. The kara is 4 krantis in Bakarganj and 3 krantis in Chittagong, Mymensingh and Tippera ; 4 karas = 1 ganda ; 5 gandas = 1 kani in Bakarganj, but in Chittagong, Tippera and Noakhali 5 gandas = 1 kuni ; 4 kunis = 1 kani ; 4 kanis = 1 done in Bakarganj, 16 kanis = 1 done in Chittagong, Noakhali and Tippera. In Dacca, 7½ gandas = 1 pakhi ; 4 pakhis = 1 kani ; 4 kanis = 1 khada or katha. In part of Jessore, the pakhi is 1½ bighas, in another portion it is half a bigha. The same measures are found also in Faridpur and Mymensingh except that the kani is not mentioned in Mymensingh ; in Mymensingh the pakhi is .448 or .498 or .525 acre. In Pabna, 16 pakhis = 1 khada is the usual table of areas. There are a few other measures which are used in different districts. It appears that the local measures of area vary very considerably both in nomenclature and value throughout the Presidency and even in the different parts of the same district.

4. *Measures of capacity (dry)* —Measures of capacity appear to be generally used throughout the Presidency in trade

Measures of capacity (dry).

in rice, pulses, grains etc. The dry measures of capacity in Bengal are the sera, ari, done, katha and paila but, the capacity of each of these measures varies considerably. There are different kathas for different commodities and the weights of the commodities which a paila will hold vary. For instance, there is the katha holding 3 seers of rice in one part of Pabna district, the seer being 60 tolas weight and in another part it contains 2 seers 14 chataks or 3 seers 12 chataks of rice. In the same district, there are several different seers which are used for different commodities and also several khadis, but there seems to be no relation between the katha, khadi and seer. In Chittagong, there are various seer measures holding different weights of rice, paddy or pulses and the *ari* contains a certain number of seers varying from 9½ to 20. The basket by which paddy is purchased by European firms in Chittagong is a wooden measure which is supposed to hold

26 lbs. of paddy. In a similar way, there are several donees in Jalpaiguri and several kathaas, pailas and khuttas which appear to have no relation with each other. In some districts, however, there seem to be defined tables of measures but although the same names are used to some extent in these tables, the relations between different measures of the same names vary even in the same district. There is no table of measures which appears to be in common use in more than one district, and all that can be said is that there are measures with various names and that measures of the same name have various capacities even in the same district.

5. *Measures of capacity (liquid).*—In Bengal, liquids appear to be generally sold practically by weight with the exception of intoxicating liquors and varnish, foreign oils, etc., which are sold by the English measures but vessels are used in every district in retail transactions, the capacity of the vessel being determined so as to hold a particular weight of the commodity sold. These measures are usually made of bamboo or are earthenware pots or in some cases coconut-shells. In Bankura, 4 mantis=1 chanthi; 4 chanthis=1 pao; 4 paos=1 pai; 20 paos=1 sali; 8 salis=1 map. The measures are cups or bowls made of wood or metal. These are used for all trade in liquids. No definition has been given to them but apparently the same measures are used for all commodities. The pai varies in different parts of the district. In Noakhali, oil and milk are sold in coconut shells and bamboo chungas and their capacity is said to be defined by weight of water and not of the commodity sold. These two districts appear to be the only exceptions to the rule that liquids of capacity are sold by weight. The seer on which the measures of capacity are based varies in different places according to the seer in ordinary use in retail trade.

6. *Cubic contents.*—The British cubic measures appear to be in force throughout the Bengal Presidency. The term *fera* is used in a few districts for measuring lime-building materials, etc., but its contents vary in different districts, being sometimes 1, 2½, 5, 10, or 25 cubic feet. In Burdwan, a maund of lime or sand is 1½ cubic feet. In Jalpaiguri, a *chowka* of earth-work is 100 cubic feet. But in 24-Parganas, a *chowka* of building materials, sand, lime, etc. represents 27 cubic yards. The term *kua* is used in a few districts for measuring earth-work, but it has different meanings in different places. Probably the use of British cubic measures is gradually driving out or standardizing local measures.

MADRAS.

Measures of weight.—In different parts of the Madras Presidency, the ordinary weights in use vary. Variations are partly due to the fact that in some places they are based upon the old Madras coins such as the pagoda, or on the British and, in one or two small areas, the Dutch or French pounds; and the variations have been increased by the efforts of the Madras Government and municipalities to make the principal weights an exact multiple of the present rupee-weight. In Madras the old palam was slightly more than three tolas but the standard palam the use of which the Madras Government encourages are based upon the palam of 3 tolas, the table of weights being 8 palams = 1 seer; 5 seers = 1 viss; 8 visses=1 maund. This table of weights is now reported as in use to some extent in almost every district in the Presidency except in Malabar but it is not clear how far its use has extended beyond the principal towns. In almost the whole of Kurnool and a large part of Cuddapah, the seer in ordinary use appears to be 20 tolas; but in Kurnool 6 seers=1 viss, while in Cuddapah 5 seers = 1 viss; in Anantapur, Bellary and parts of Kurnool, the most common seer appears to be 21 tolas with a viss of 6 seers and a maund of 8 visses. In rural areas of Ganjam, and in part of Vizagapatam, the ordinary seer seems 22 tolas; but from the evidence received, it appears that the English avoirdupois weights are widely used in the Northern Circars for purposes of weightment and it is even stated that in Vizagapatam district, stones made to correspond to

pound-weights are used in villages. In Vizagapatam, the seer used for ordinary commodities in different parts of the district is reported to be 22, 22½, 24 tolas (Bimlipatam only) and 24½ tolas (Vizagapatam town). In Godavari and Kistna, the seer does not seem to be commonly used but binary subdivisions of a viss of 120 tolas are in common use. The seer of 80 tolas is used for opium throughout the Presidency, for salt in factories only and for meat in Ganjam, Godavari and Kistna, but is not used otherwise. The seer of 24·9 tolas used by butchers in the Madras City is described by the Collector as the old standard. Various other seers are reported from different parts of the Presidency as in use in special localities or for particular purposes, *e. g.*, a seer of 25 tolas is in common use in one taluq of North Arcot and in part of Ramand district, a seer of 27 tolas for firewood, vegetables, locally manufactured articles, dry fish etc., in Kistna; a seer of 36 tolas for vegetables in Ganjam and so forth. Seers of the following numbers of tolas are reported in different parts: 20, 21, 22, 22·5, 23·4, 23·6, 24, 24·4, 24·9, 25, 27, 32, 36, 71·5, 72, 75, 80, 82·5, 84 and 105. A palam is generally 3 tolas except in Madura and Ramnad where the old palam of 6 tolas has been retained in combination with the Madras seer of 24 tolas. In Madras City, the palam used by butchers is 3⅓ tolas. In Malabar, Tinnevely and in certain taluqs in Kistna, the palam is 3⅓ tolas; in Malabar the ordinary palam is either ½ lb. or ⅓ lb. avoirdupois; but the Collector reports that the pound is 40 tolas. In some parts of the district, a palam is 10, 12½, 14, and 15 tolas. In Tinnevely, the palam is exactly ⅓ pound avoirdupois (1,000 grains). The ordinary table of weights in use is 144 palams=1 tulam=800 tolas. In Tinnevely town, however, there is a tulam of 100 of the same palams. A viss is generally 120 tolas, but occasionally varies. In Ganjam, there are visses of 118 and 180 tolas, in Kurnool, Bellary and Anantapur, the viss is six seers of 21 tolas, *i. e.*, 126 tolas; there are visses of 125 tolas and 2½ lbs. in Vizagapatam. The maund is generally 8 visses but there are special maunds in use in certain places, such as, 1,000, 1,024, 1,050 tolas, 22, 24, 26, 28 lbs. avoirdupois. A candy is usually 20 maunds but in Tinnevely, a candy of cotton is 500 lbs., onions 900 lbs., and oil-cakes 1,200 lbs. In South Arcot, a candy of groundnut or oil-cakes, etc., is 480 French pounds. The tulam of 800 tolas has already been mentioned and that is the most common tulam. In Madura, there is a tulam of 810 tolas, and in Malabar there are tulams of 1,400 and 1,500 tolas and 30 Dutch pounds and 25, 32, 33½ and 34 pound avoirdupois. A weight called thukku is used for vegetables, its value being 100 and 180 tolas in parts of Coimbatore, 150 tolas in Salem and 250 tolas in Trichinopoly; and a thukku of 156½ tolas is used for ordinary commodities in portions of South Arcot. English avoirdupois weights appear to be used more or less widely for some purpose or other throughout the Presidency especially for firewood, coal, gun-powder, iron, bread, and in wholesale trade and in export trade and occasionally for such local articles as meat, Indian sweetmeats, groceries, confectionery, rice, chillies, etc. In the Nilgiris, all trade is stated to be done in English weights. The extensive use of English weights for making weighments in the Northern Circars has already been mentioned. In South Canara, the ordinary table of weights is 7 rathals or pounds=1 dade, 28 rathals=1 maund and 20 maunds=1 candy, but the rathal or pound is now regarded as 40 tolas. The Dutch pound is used to a limited extent in Malabar; the kilogramme is used for trade in groundnuts, oil, oil-cakes, etc. in South Arcot.

In Malabar, the tables of weights depend mainly on the English avoirdupois pound, the palam, the tulam and candy being generally defined with reference to it, but they vary in different parts of the district.

2. *Special weights for special trades.*—The most common table of jewelers' weights is 32 gundumanis or guruginjas=1 varaha or pagoda and 3½ pagodas=1 tola of 160 grains. The seed of the *Abricus Precatorius* is generally used as gundumani or guruginja. In some places a large seed is used which is ⅓ of a pagoda. The fanam is also used as a weight for gold and is regarded as ¼ pagoda in North Arcot, Coimbatore, Nilgiris, Malabar and in most parts of the Coimbatore district, and as ⅓ pagoda in Tanjore. In Trichinopoly the fanam is ⅓ tola. In South Canara, 123 fanams=4 tolas and in Cuddapah 11

fanams=1 sovereign and 16 fanams=1 tola. In part of Coimbatore district, $9\frac{1}{2}$ fanams=1 varaha which is $\frac{1}{8}\frac{1}{1}$ tola. In some districts, the weight of varaha differs. In part of Cuddapah district it is $\frac{7}{4}$ tola, in Coimbatore it is $\frac{1}{2}\frac{1}{2}$ tola; in Ramnad and a portion of Salem district $\frac{1}{3}\frac{1}{1}$ tola, in another portion of Salem district $\frac{1}{5}\frac{1}{0}$ tola; in Tanjore $\frac{2}{3}\frac{2}{0}$ tola and in other portions of the district $\frac{1}{3}\frac{1}{6}$ tola; and in Vizagapatam, it is half a sovereign or $\frac{4}{1}\frac{1}{0}$ tola. The terms ratti and manjadi are also used in jewellers' tables. In North Arcot $2\frac{1}{3}$ gundumanis=1 ratti; $1\frac{1}{4}$ rattis=1 manjadi; 11 manjadis=1 pagoda. In South Arcot, 9 rattis=8 carats and $6\frac{1}{2}$ carats=1 tola, the table used for diamonds, rubies and emeralds. In South Canara, a ratti is defined as 16 grains. In Chittoor, a ratti of $\frac{1}{5}\frac{1}{0}$ tola is used for emeralds and a manjadi of $\frac{1}{10}$ tola for diamonds. In Coimbatore, a manjadi of $\frac{1}{6}\frac{1}{1}$ tola is used for diamonds. Sapphires are weighed by a ratti of $\frac{1}{5}\frac{1}{3}$ tola and diamonds by a carat of $\frac{1}{5}\frac{1}{6}$ tola and a manjadi of $\frac{1}{7}\frac{1}{2}$ tola. For silver in Madras, $1\frac{1}{3}$ rattis=1 manjadi, the ratti being connected with the tola by the equation $3,399$ rattis=64 tolas. In Tanjore, a ratti of $4\frac{1}{2}$ tolas and a manjadi of $\frac{1}{30}$ tola are used for diamonds. In Vizagapatam, diamonds and rubies are sold by a ratti which is $\frac{1}{6}\frac{1}{2}$ of a tola. Pearls are weighed by the table 26 manjadis=1 ratti, the manjadi being $\frac{1}{3}\frac{1}{3}$ tola. For corals, in the same district, 12 manjadis=1 kalanji, and for diamonds, 10 manjadis=1 tola. The following table or part of it is used in the districts of Ganjam, Godavari and Guntur: 2 visams (paddy grains)=1 paraka; 2 parakas=1 padika (red-seed); 2 padikas=1 addiga; 2 addigas=1 chinnam; 9 chinnams=1 varaha; 30 chinnams=1 tola. In Godavari, the addiga is also called the ratti and the chinnam is also called the manjadi. Similar tables are used in the Malabar district but different names are given to the weights. In some districts a sovereign is used as a weight and other weights are connected with it; e.g., in Cudappah, Guntur, Godavari, Nellore, Nilgiris and Vizagapatam, the sovereign is generally regarded as $\frac{1}{1}\frac{1}{1}$ tola. In a portion of Vizagapatam it is taken to be $\frac{2}{4}\frac{1}{1}$ tola and the Nilgiris $\frac{2}{4}\frac{1}{1}$ tola. The term kalanji has already been mentioned as used in Ramnad. It is also used in Salem for corals and for diamonds in Tanjore. Pearls are weighed in Madras by a weight called chow which is equal to $\frac{1}{10}\frac{1}{0}$ tola and a masha of $\frac{1}{12}$ tola is used in Kurnool district. In Anantapur district, there is no table of jewellers' weights, current coins being used instead. In Bellary, pearls and sapphires are weighed by rathals and taks, 24 rattals being equal to 1 tak, and the rattal being $\frac{1}{6}\frac{1}{1}$ tola. Diamonds and rubies are weighed by carats in Bellary, 58 carats being regarded as equal to one tola. A carat of $\frac{1}{5}\frac{1}{7}$ tola is used for imitation rubies in Ramnad district. The carat is also used in Trichinopoly district for precious stones.

In this somewhat lengthy summary it has not been possible to mention all the weights which are in use in various parts of the Madras Presidency, but what has been said above is sufficient to show that they vary considerably both in nomenclature and in value. It is also noticeable that the weights used for valuable metals and precious stones have no direct relation as a rule with the weight of the rupee.

3. *Measures of length.*—The British linear measure is used in most districts in the Presidency but there are a few districts from which it has not been reported, e.g., Anantapur, South Canara, Chingleput, Chittoor, Ramnad, Nilgiris and Trichinopoly. In these districts the table of length, 2 cubits or muras, mulams or muzams=1 yard or gaz, is used and a cubit is divided into 2 spans or janas. The cubit has generally been standardized as 18 inches but it is 20 inches in Anantapur, and 19 or 20 inches in rural tracts of Vizagapatam. In some districts, the span is again subdivided into two jittas or three bettas and occasionally into nine angulams or inches. A bara or mattu or maru is usually 2 yards. In South Arcot, an architectural inch which is $1\frac{1}{2}$ English inches is used for stone-work, 24 English inches being equal to an architectural yard. In South Canara, the unit angul is considered to be the diameter of a rupee and is taken to be $1\frac{1}{2}$ inches; 24 angulis=1 malaya kolu and 26 $\frac{1}{2}$ anguls make one ikkari kolu. In Kistna, the yard is used by traders, etc., and is divided into 16 visams and in Vizagapatam it is divided into 16 girhas. In Madura, Ramnad and Tinnevely, a measure called tachumulam which is generally 33 inches, except in Melur taluq where it is

32 inches, is used. In Ramnad a few other special measures are used. In measuring distances, a kros is regarded as equal to 2 miles and 4 kroses=*amada*. It appears, therefore, that the measures of length in use are mainly either the English measures of length or based upon the English yard.

4. *Measures of area.*—The ordinary measures of area used by Government in the Survey and Settlement Departments and adopted in documents are

Measures of area.
the acre and its $\frac{1}{100}$ part which is usually called a cent. For purposes of measurement, a Gunter's chain of 66 feet divided into 100 links is used, so that 1,000 square links=1 cent. In the old paimas survey records in some districts, *e. g.*, in Anantapur, South Canara, Cuddapah, and Kurnool, the acre is divided into 40 guntas or 16 visams or annas each and the anna into 16 ganusus. In Salem 16 annas=1 kuli and 40 kulis=1 acre in certain unsurveyed villages. The term *cawnie*—about 1.32 to 1½ acres—is still used in Madras city as well as in several districts. In Madras city the table of areas used by Government is 2,400 square feet=1 manai or ground; 20 grounds=1 *cawnie*. The Tamil word *manai* signifies a plot of land sufficient for a small native house. The Madras *cawnie* is therefore $1\frac{3}{4}$ acres. In Madura a *cawnie* is also divided into 24 manais. In South Arcot, it is divided into 16 annas of 4 pies and also into 100 kulis. In Chingleput, it is divided into 100 kulis. In Trichinopoly and in some parts of Chingleput in proprietary estates 4 chulangs=1 visam; 16 visams=1 *cawnie*. In Chittoor, 20 pedda guntas or 100 picha guntas make a *cawnie*. The term *goru* is used in Guntur, Bellary, Kurnool and Nellore. The *goru* means a plough and is defined as the area which a pair of bullocks can plough in one day. It is regarded as $3\frac{1}{2}$ acres in Guntur and 4 acres elsewhere. In Guntur, it is divided into 50 kuntas and in Nellore the table runs 13 kuntas=1 *goru*; 8 *gorus*=1 *kunchelus*, but the Collector reports that these measures of area are fast disappearing from use. The areas are expressed in terms of dry measures of capacity in some districts, such as Anantapur, South Canara, Ganjam, Godavari and Vizagapatam. This statement would specially apply to zamindari and inam villages which have not been cadastrally surveyed, the rent being frequently paid in kind, *e. g.*; by a share of crop. Special local measures are in use for agricultural purposes for calculating wages, rent, etc. in South Canara, Coimbatore, Malabar, Ramnad and Tinnevely.

5. *Measures of capacity dry.*—The two measures which are apparently in most widespread use are those based upon the Madras type measure or padi

Measures of capacity (dry).
which holds 132 tolas of second sort rice when fully heaped, 120 tolas struck or 62½ ounces of water and the type seer which holds 50 tolas of rice struck, 88 tolas of rice heaped and 41.7 ounces of water. The Madras type measure and its binary subdivisions are reported to be in use in North Arcot, South Arcot, a portion of Chittoor district, a portion of Cuddapah district, Kurnool, Madras, Madura, Ramnad, Salem, Tanjore, Tinnevely and Trichinopoly. The Madras type seer is used in Anantapur, Bellary, South Canara, Coimbatore, Ganjam, Godavari, Nellore and Vizagapatam (Bumlipatam only). In Madras and North Arcot 8 ollocks=1 padi or measure; 8 padis=1 marakkal. In Chingleput, Ramnad, Trichinopoly and Tinnevely, the marakkal is four measures. In Ramnad, a marakkal of 6 Madras type measures is also reported and in Tinnevely a marakkal of 8 seers is used, the seer holding 40 to 41½ ounces of water. In some districts, the padi is about $\frac{1}{2}$ the Madras type measure, *e. g.*, in parts of Chittoor. The seer also varies considerably in different places where the Madras type seer has not been adopted. In North Arcot, the term 'measure' is used for vessels holding 75, 86, 132, 160 tolas of rice in different parts of the district, while in one taluk of Malabar it holds 125 tolas struck. In Chittoor district, a padi or measure may hold 80, 81½, 66, 82, or 75 tolas of second sort rice. In Cuddapah there are measures holding 120 or 133 tolas of second sort rice. Other measures with various names such as *kuncham*, *vallam*, *manika*, etc., are used in various districts and the capacities vary not only from district to district but from place to place in the same district. For instance in Kistna the capacity of the *kuncham* varies

from 330 to 462½ tolas of second sort rice fully heaped and manka from 108 to 175 tolas. There appears to be very little uniformity among the measures in use in the Madras Presidency except in so far as the Madras type measure and type seer have been adopted. It is not possible to group areas according to measures of capacity or tables of measures used in them.

6. Liquids are generally sold by measure in the Madras Presidency. But in a few cases, they are sold by weight. Sale of liquids by weight. Ghee is sold both by weight and by measure, in South Canara, Chingleput, Godavari, Guntur, Madura, Nellore, Nilgiris, Ramnad, Salem, Tinnevely and Trichinopoly. In Madras city, ghee is sold wholesale by weight and retail by measure. In Anantapur, ghee is sold by measures in bazaars and by weights elsewhere. Local oils are sold both by weight and by measure in Godavari and North Arcot. In Guntur and Nellore, local oils are sold by weight only and in some places in Bellary, pots containing known quantities by weight of certain liquids are used so that the sale is practically by weight. In Madras city, gingelly oil is sold wholesale by weight and retail by measure. In South Arcot, oils and other liquids are sold by measure as well as by weight. The practice here mentioned does not always exist throughout the whole of a district. It may vary in different parts of the district.

7. In all districts, the dry measures in use are used to some extent as liquid measures and in some districts no special liquid measures are reported. Measures of capacity (dry). The English measures, gallon, quart, etc. are only used for intoxicating liquors and kerosene oil except in the Nilgiris, where the quart bottle is reported as used for other oils, milk, ghee and honey. The names of special liquid measures vary in different districts and those of the same name vary in capacity from place to place. The adam is used for oils in South Arcot, Madura, Ramnad, Trichinopoly and Tanjore, but three different adams varying in capacity from 70½ ounces to 75½ ounces of water are reported from Tanjore district, two, between 720 ounces and 768 ounces, from Trichinopoly, while the adam in Madura holds 1,375 ounces of water. The vallam is used for various liquids such as oils and milk in North Arcot, Coimbatore, Madura, Salem and Trichinopoly. Here again, the definition of the vallam varies from district to district; for instance, in Coimbatore it should hold 288 tolas of second sort rice heaped in one taluq and 320 tolas in another taluq. In Salem it should contain 351 tolas of second sort rice heaped, while in Madura it is defined as 2½ to 3 Madras measures. A kudam or kodam is used for oils in Coimbatore, Nilgiris, Salem and Trichinopoly; but its capacity varies from 445½ ounces to 573 ounces. In South Canara, special measures called kudta, kutti, kuladu shedda, hadu, and maund are used; but the evidence regarding the relationship between measures to each other is in some respects discrepant. This may be accounted for by the fact that the table of measures varies in different districts. In Malabar different measures are used. A few other special measures are used in other districts, such as a thukku-chembu and manam in North Arcot. It is apparent from the above that the liquid measures of capacity are very varied in the Madras Presidency.

8. Measures of cubic contents.—The British cubic measures seem to be in general use throughout the Presidency although it has not been reported in a few districts. In some districts special measures of capacity exist. In Anantapur, for measuring irrigation wells and earthwork, the height of a man cubed is called a kunta or bhavi (well); a measure called para is used in South Arcot, Kistna, Madura, Nellore, Nilgiris, Tinnevely, Vizagapatam for measuring lime. It is generally 4,000 cubic inches. In Nellore, 20 paras=1 putty; in Vizagapatam 60 paras=1 garbe. In South Canara, special measures gula, kuli, and gunta are used in selling timber. Chakka which is a cube of six feet is used for purchasing firewood. In Malabar, the kole and gunta are also used for measuring timber but the quantity varies, the kunta being sometimes about 8 cubic feet in some places and in other places about 12 or 12½ cubic feet. In Ramnad, carpenters and masons use the tachumolam of 3½ cubic feet, and in Tinnevely they use a molam of 1,125 cubic inches.

9. *Stamping operations.*—Stamping operations are now carried on in all districts in the Madras Presidency except Ganjam, Vizagapatam and Malabar. In Ganjam, the stamping establishment was abolished in June 1903 for want of work, as the type seer had not been brought into force in the district and the stamping of wooden measures in general was absolutely prohibited. Stamping operations ceased in Vizagapatam in June 1908. The reason in the case of Vizagapatam cannot be ascertained from the annual reports before the Committee.

10. *Constitution of stamping parties.*—A stamping party generally consists of one gumastah, clerk or tester and one blacksmith, stamper, artizan or golla, the former on pay varying from Rs. 10 to Rs. 15 and the latter from Rs. 8 to Rs. 12. Some stamping parties consist of a single individual only, while in Bellary, a peon on Rs. 10 is attached to the party. In Madras, a special establishment is employed consisting of a head tester on Rs. 35, an assistant tester on Rs. 15, an iron-smith on Rs. 12 and two peons on Rs. 7 each. It is expected that the cost of the establishment and contingencies in each district should be covered by the fees received. In 1911-12, the total charges incurred amounted to Rs. 17,880, while the fees collected amounted to Rs. 20,563. The number of stamping parties in each district varies. In some districts there is a stamping party for each taluq while in others there is only one for the whole district.

11. *Fees.*—A single rate of fee is charged whether a weight or a measure is to be stamped; but the rate varies in different districts from 4 pies in Chingleput, South Arcot, and 5 pies in Tanjore to Re. 0-1-6 in South Canara. In conducting the actual operation of testing, the stamping establishment is expected to carry out free of extra charge any slight adjustment that may be found necessary to make the weights and measures perfectly accurate.

12. *Impression stamped.*—Weights and measures are stamped with the following set of impressions:—(1) the crown; (2) the denomination of the weight or measure in an abbreviated form in the local vernacular; (3) the initial letter or letters of the district where the number of the stamping parties does not exceed one, and, where the number of parties is more than one, the number of the party; and (4) the year of stamping.

13. *Weights and measures stamped.*—In most districts, the Madras Government weights (palam=3 tolas; seer=8 palams; viss=5 seers; maund=8 visses with their binary submultiples) and the Madras type measure with binary submultiples and the yard and $\frac{1}{2}$ yard are stamped. The Madras type measure contains 120 tolas of second sort rice struck, 132 tolas of second sort rice heaped or 62.5 oz. of water. English avoirdupois weights are also stamped in Madras city and Godavari. In South Canara, a rathal or pound of 40 tolas and a maund of 28 rathals with subdivisions are stamped. In Bellary, the stamped weights are based on a seer of 21 tolas, and in South Arcot a thukku of 50 palams is stamped in addition to the Madras weights. In Godavari, the Collector reports that the seer stamped is 80 tolas with the Madras viss and maund, but the seer of 80 tolas is only reported as used for opium and mutton in Godavari. In Bellary the measure of capacity which is stamped is the Madras type seer which contains 88 tolas of second sort rice heaped, 80 tolas of rice struck or 41.7 oz. of water. In South Canara, the seer measure contains 80 tolas and a kalsige of 14 seers is also stamped as a grain measure; the *kudta* (12 tolas), *kutti* ($9\frac{1}{2}$ kudtas), a maund (10 kuttis) and their binary submultiples are stamped as liquid measures. In Godavari, the seer measure which is stamped is the Madras type-seer; its binary multiples (adda and kunoham) and submultiples (tawa, sola, arasola and gidda) are also stamped. In Trichinopoly, the *adam* with its submultiples down to $\frac{1}{513}$ are stamped for use in the sale of oil. The English measures of capacity (gallon, bushel, etc.) are stamped at Madras and in several districts for abkari purposes. The Committee has not complete information before it regarding the weights and measures stamped in several districts but what has been said above is sufficient to show that the weights and measures which are recognized and stamped by Government still vary in different districts.

14. Apparently it is not expected that weights and measures should be stamped at regular intervals and, except where the stamped weights or measures have

become worn out or reduced in capacity, it is not necessary to submit them to the inspection of the Government stamping establishments [Bo P. (Rev. Sett, L. R. & Ag.) 31st July 1888, No. 375, paragraph 9]. The total number of dry measures stamped has generally exceeded 300,000 in recent years; liquid measures, 20,000; weights 250,000 and measuring rods, 2,000. In 1912-13, the figures were 327,283; 21,118; 295,194; and 2,779, respectively. The amount of work done in districts varies very much. In 1912-13, the total number of weights and measures stamped was only 15 in the Nilgiris, 1,404 in Bellary, 1,966 in Anantapur, 2,914 in South Canara, 4,904 in Godavari, 11,280 in Cuddapah and 11,797 in Kurnool, while it amounted to 83,004 in Tanjore, 70,607 in Ramnad, 66,384 in Chingleput, 55,902 in South Arcot, 52,363 in Madura and 48,897 in Tinnevely. As regards the district of Tinnevely, the Collector does not consider the extent to which the standard maund and its submultiples are stamped to be satisfactory because the local traders have not sufficiently recognized their utility and standardization and the old two kinds of tulam weights of 800 and 556 tolas weight, respectively, and their submultiples are still in use. The number of parties working in a district varies with the amount of work done. The amount of work done appears to vary roughly inversely as the rate of fee. This is to be expected from the condition that the establishment shall be self-supporting.

15. *Conduct of stamping establishment.*—The parties work under the supervision of the ordinary revenue establishment of the district, but it is not very clear what amount of supervision is actually given to the stamping establishments. In recent annual reports, however, information is included of a few complaints regarding the conduct of the stamping establishments. The principal complaints are levy of unauthorized and excess fees; illegal charges; receipt of illegal gratifications; fraud; exaction of charges for adjusting measures in addition to the authorized fee; and the misappropriation of fees.

16. *Sale of weights and measures by Government.*—In recent years, the Government have pushed the sale of type measures and standard weights. In 1912-13, type measures were sold departmentally in every district except Kistna, Madras and Ramnad. The total number sold was 14,725, the amount realized by their sale being Rs. 3,098. The number of type measures sold in each district varies from 7 in Cuddapah, 11 in Vizagapatam, 31 in the Nilgiris and 50 in Anantapur to 2,540 in Bellary, 2,486 in Godavari, 1,998 in South Arcot and 1,237 in Madura. In five districts, standard weights are also sold departmentally. In one district 577 weights were sold in 1912-13 but information was not received from the other districts regarding the number sold. The total amount realized by the sale of standard weights was Rs 962. The price at which the Government sell weights and measures vary from district to district. For instance, in South Arcot a set of Madras type measures consisting of 1, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, $\frac{1}{32}$ measure is sold for ten annas and a similar set is sold in Madura for Re. 0-7-1. In Ganjam a set of type seer-measures is sold for Re. 0-14-6. A set of weights (1, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$ viss, 2, 1, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$ seer) is sold in South Arcot for Re. 1-0-4. Where the standard weights and measures are locally available at a reasonable price, it appears that the Government do not interfere with private trade by undertaking the sale of weights or measures.

BIHAR AND ORISSA.

Measures of weight.—The ordinary weights in use are based on the seer of 80 tolas in Bihar and Orissa except in Angul and Khondmals, portion of Bhagalpur district, most parts of Gaya district, Monghyr, certain portions in Midnapur, Palamanu, most of Sonthal Parganas, and parts of Singbhum. In Angul subdivision and in Cuttack, a seer of 105 tolas is commonly used but in Khondmals subdivision, the seer of 80 tolas is used for imported article, and in certain markets it is used in general trade. In Bhagalpur, Champaran, Hazaribagh, Monghyr, Muzaffarpur and Patna, Saran and Shahabad various seers depending on gandas of Gorakhpuri pice and Nepalese pice are used. The seers depending on them vary very much from place to place

e.g., in Bhagalpur from 48 to 105 tolas, in Champaran from 33 to 95 tolas, in Hazaribagh from 28 to 120 tolas, the seer of 48 tolas being the most common; in Monghyr from 48 to 88 tolas, in Muzaffarpur 40 to 88 tolas Lohia pice, in Patna from 33 to 84 tolas, in Saran from 35 to 116 tolas and in Shahabad from 72 to 92 tolas. There are also various seers in Gaya from 44 to 84 tolas, in Purnea from 82½ to 132 tolas, in Sonthal Parganas from 58½ to 106 tolas and in Singbhum from 60 to 105 tolas; in Darbhanga seers of 50, 52 and 88 tolas are used in ordinary trade in different parts of the district. In Palamau, a kachha seer of 45 tolas is generally used. In Ranchi, a kachha seer of 40 tolas is used by banias when purchasing from aboriginals, and in part of Saran district a seer of 48 tolas is used in all trades except oil and milk. The seer is usually divided into 16 chataks or kanwas. The panseri is generally five seers but in the case of other seers, it is sometimes 5½, 6, 6½, 7, 8, 8½, 9 seers. The maund is generally 8 panseris but in part of Champaran district, the maund is 64 seers of 60 tolas each where the panseri is 7 such seers. In some districts, the terms karisa, pal and bisa are used in connection with the sale of articles in retail trade. The bisa is generally 20 tolas but occasionally varies in value from 24, 27 and 30 tolas in portion of Puri district. A pal is generally 4 karisas. It may be equal to 2, 4 and 6 tolas. Special weights are sometimes used in purchasing from cultivators, etc. in the interior, *e.g.*, in Manbhum, seers of 100, 105 and 110 tolas are used for purchasing raw shellac. British avoirdupois weights appear to be commonly in use in retail trade in hides in Angul and Khondmals. The most ordinary weights used by jewellers and apothecaries are 4 dhans=1 ratti; 4 rattis=1 china; 6 rattis = 1 anna; 8 rattis = 1 masha; 52 annas=1 tola or bhar; 16 annas = 1 tola. The whole of this table is not reported as used in each district, but parts of it are generally in use. In Angul and Khondmals, Balasore, Cuttack and Puri, 10 mashas = 1 bhar; while in Gaya, 10 rattis = 1 masha; 12 mashas = 1 tola. In Palamau and Shahabad 5 rattis = 1 anna. In Muzaffarpur, Patna and Purnea, the tola is not the same as a rupee but 10½ mashas make one bhar or rupee weight and 12 mashas make one tola. In Sambhalpur, the following tables are also used:—7 rattis = 1 masha; 13½ mashas = 1 bhar for gold and silver and 10 rattis = 1 masha; 3 mashas = 1 mash; 4 mashas = 1 tola for drugs; in some places the masha is ½ tola, *e.g.*, Angul and Khondmals, Cuttack. A few special weights are used in some places for jewellery or drugs but those already mentioned are the most common. The British apothecaries' weights are reported to be in use in one or two districts for weighing medicines and drugs.

2. *Measures of length.*—The ordinary table of measures in Bihar and Orissa appears to be 3 jams = 1 angul or finger; 4 fingers = 1 muthi or mushi (fist); 3 muthis = 1 chakband, bitta or span; 3 anguls = 1 girah; 2 chakbands = 1 hath or cubit; 2 cubits = 1 gaj or yard; 2 gajes = 1 dau; 2,000 daus = 1 kos; 4 koses = 1 jojan. The whole of this table is not reported in many districts but portions of it are reported as in use in every district. It appears probable that it represents the original table. The most common gaj throughout the province is now 36 inches; but other gajes are found in different districts, the lengths being 33, 36½, 37, 38, 39, 40, 40½, 41, 42 and 44 inches. The gaj of 36 inches is commonly known as the Nambri gaj and a gaj of 39 to 42 inches is sometimes called the Sikandari gaj.

3. *Land measures.*—Land is usually measured by a lagga, bans, padika or nal. It is generally between 6 and 12 feet long. In Balasore, the table for measuring land is 4 padikas = 1 guntha; 25 gunthas = 1 mau. In Bhagalpur, 20 kathas = 1 bigha, the standard of katha being four cubits. In Muzaffarpur, 20 laggas = 1 rashi; 30 rashis = 1 mile. In Palamau, 20 bans = 1 kata and 20 katas = 1 bigha, the ban being 6 cubits. In Patna, 20 bans or laggas = 1 rashi. In Singbhum, it is reported, that 20 kathas = 1 bigha and 4 bighas = 1 rashi.

For ordinary measurements, therefore, except generally cloths, the local measures have been standardized on a gaj of 36 inches. Different kathas are

also used for different localities, but the standards of measures for land vary considerably.

4. *Measures of area.*—In Government survey records, areas are apparently given both in terms of local measures and of the acre and decimals of an acre;

Measures of Area.

but it does not appear that the acre is commonly used by the people. The local measures of area depend upon the length of the rod which is generally known as a lagga, bans, padika or nal. The most common table appears to be 20 phurkis = 1 dhurki; 20 dhurkis = 1 dhur; 20 dhurs = 1 katha; 20 kathas = 1 bigha, the dhur being a square lagga. The actual value of these measures varies, of course, with the length of the lagga. Another table in use in Angul and Khondmals, Balasore, Cuttack and Puri, is 4 kanis = 1 biswa, 16 biswas = 1 guntha, 25 gunthas = 1 pati, the biswa being a square padika or nal. In Manbhum, Ranchi and Singbhum, the katha is divided into 16 chataks and in Manbhum a chatak is divided into 20 gandas, in Singbhum into 20 square haths. In Singbhum, another table is 20 gandas = 1 katha, 20 kathas = 1 bigha, and a ganda being a square katha of $4\frac{1}{2}$ cubits. In the Khondmals subdivision, a measure called mova is reported. The method of estimating the area of land by the amount of seed required to sow is still in use in Sambhalpur and Singbhum. This system is known as "paran" system of measurement.

5. *Measures of capacity (dry).*—Measures of capacity (dry) are used in Darbhanga, Gaya, Patna and Shahabad.

Measures of capacity (dry).

The measure called paila is used in Cham-

paran, Manbhum, Monghyr, Muzaffarpur, Palamau, Ranchi and Singbhum. In Champaran, Manbhum and Singbhum, the paila is supposed to contain one seer (80 tolas) of rice, in Muzaffarpur, $1\frac{1}{2}$ kachha seers of grains, in Palamau 45 tolas' weight of grain, and in Ranchi from 6 chataks to 1 seer of grain. In Monghyr, the paila is not used in trade. In Champaran, 20 pailas = 1 maund. In Palamau, 20 pailas = 1 kata. In Ranchi, 20 pailas = 1 gunta, and 2 guntas = 1 kat. The term gouni is used for measures in Angul and Khondmals, Balasore, Cuttack, and Puri, but its capacity seems to be very variable; for instance, in Balasore, it contains from 10 to $14\frac{1}{2}$ katas, a kata holding 70 or 80 tolas weight of rice. In Cuttack, it is supposed to contain 2 Cuttack seers (105 tolas) weight of *birji*, but its capacity is said to range from $1\frac{1}{2}$ to 7 seers. In Purnea, there are various kattas used in different parts of the district, having a capacity of from $1\frac{1}{2}$ seers (80 tolas) and $2\frac{1}{2}$ seers (64 tolas) to 20 seers of 105 tolas. Many of these are apparently not used in trade. There are various other names for measures; thus the man, khandi or gandua, pudugo, pudichhilla, bharan, tambi, bhoga, pital, dinla, sola, pouti, arha, pahili, nowti, pai, etc. Many of these are replaced by authorized tables but no table of measures seems to be common to two districts. Different tables are used in different parts of the same district. Where, therefore, measures of capacity are used, it appears that they vary very much from place to place both in name and in capacity.

6. *Measures of capacity (liquid).*—In Balasore, Champaran, Cuttack, Darbhanga, Gaya, Hazaribagh, Muzaffarpur, Monghyr, Patna, Puri, Purnea,

Measures of capacity (liquid).

Ranchi, Sonthal Parganas, Saran, Shahabad and Singbhum, liquids appear to be really sold by weight though in selling small quantities vessels are used for purposes of convenience, the capacity of the vessel in each case being so determined as to hold a particular weight of the commodity sold. The seers on which weights are based vary in different parts of the same district and the measures vary according to the weights in ordinary use in the locality. These remarks do not apply generally to intoxicating liquors and kerosene oil which are sold by the gallon and bottle. In Angul and Khondmals, Manbhum, Sambhalpur, the measures used for dry commodities are also used for liquids. In Bhagalpur, the following table is used for curds and milk:—4 choollas = 1 kain; 4 kains = 1 patha or seer; 4 pathas = 1 chukka; 5 chukkas = 1 bhara; 2 bharas = 1 maund or kunda. The choollo is supposed to contain a handful, but the Collector reports that this table is being fast displaced by weights. Other measures in this district appear to be based upon the weights

of the commodities sold. In Palamau, the terms *kanwa*, *pai*, *sera*, *paseri* and *maund* are applied to liquid measures, and in wholesale transactions, oils are sold by weight but the seer is defined as containing the weight of 50 or 64 Gorakhpuri pice of mustard-oil. Curds and milk are sold in Palamau district by ahirs by measures and by *halwais* by weight.

7. *Measures of cubic content.*—In Sambhalpur, no cubic measure is used.

Measures of cubic content. In all districts except Balasore, Champaran and Sambhalpur the English cubic measures are used, while in one or two districts, the expressions cubic *gaj*, cubic *bath*, cubic *bigha* or cubic *muthi* are said to be used. A *chauk* is said to be 10 cubic feet in Purnea and Hazaribagh. In Purnea, a tank of firewood is a cube, a side of which is $1\frac{1}{2}$ baths; and a *nal* of earthwork is $56\frac{1}{2}$ cubic feet in Purnea town. A cubic *gaj* in Champaran is called a seer. In Sonthal Parganas, a kerosene oil tin is used for measuring lime, etc., and is called *ad-mania*. In Hazaribagh, various measures are reported as representing the cubic contents of logs of wood, etc. Firewood is measured by cart-loads and lime, road-metal, etc., by the *pawana*, *barka pawana*, *gaddu* and *barka gaddu*, the contents of which are said to be 5, 25, 100, 200 cubic feet. Generally speaking, it may be said that the English cubic measures are used for measures with Indian names based upon the English measures.

PUNJAB.

Weights.—The measures of weight of the Punjab are decidedly simple. The 80-tola seer and connected weights are well-known throughout

Measures of weights. almost the whole province, the only part in which it does not appear to be at least moderately well-known being most of Dera Ghazi Khan and the trans-Indus portion of Mianwali. In 12 districts (Gujranwala, Gujrat, Gurgaon, Hissar, Jhang, Karnal, Montgomery, Multan, Rawalpindi, Rohtak, Shahpur and Simla) it is reported to be used to the practical exclusion of any other system.

2. In Ambala, Amritsar, Ferozepore, Hoshiarpur, Jullundhur, Gurdaspur,

Distribution of various weights. Kangra, Lahore, Ludhiana and Lyallpur it is accompanied in rural areas by several *kachha* seers of from 32 to 36 tolas, though in Lyallpur the use of these is confined to settlers from districts in which these were used, and is said to be on the decrease. In Amritsar and Ludhiana the origin of these *kachha* seers is traced to the Mansuri pice, 36 of which were reckoned to go to the *kachha* seer, which was regarded as equal to $33\frac{1}{2}$ rupees in weight. These pice are made in the Maler Kotla State and vary considerably in weight. This together with the variations due to the pice used to make up the seer being more or less worn accounts for the variety of *kachha* seers in use; their use is, however, very largely confined to the rural portions of the district mentioned. In many of these districts the 80-tola seer is often known as the *Angrezi* or British seer.

In Attock, Dera Ghazi Khan, Jhelum, Mianwali and Muzaffargarh, the 80-tola seer is accompanied by one or more seers larger than itself, usually about 100 tolas; while in Sialkot both these larger seers and the smaller (*kachha*) seers of the second group are current in the rural areas.

3. The only weight that appears to be in any way really peculiar to the Punjab is the *sirsai* which in Ambala, Amritsar, Ferozepore, Gurdaspur and Jullundhur is reported to be one-sixteenth of the *kachha* seer, or from 2 to $2\frac{1}{2}$ tolas. In Attock, Mianwali, Multan and Shahpur this name means a weight of $1\frac{1}{2}$ tolas, and in Jhelum and Montgomery it is said to be of $1\frac{1}{2}$ tolas. In several of the western districts the *chatak* is known as the *sharak*.

4. Jewellers' weights are quite similar to those in force in the United Provinces, the gold tola being as a rule from one to eight rattis in excess of the 180-grain tola. The large ratti of $2\frac{1}{2}$ grains or approximately $1\frac{1}{2}$ ordinary rattis is

Jewellers' weights.

reported from Amritsar, Gujranwala and Lahore, and is subdivided there as usual into 20 biswas, while 24 make the *tank* (in Gujranwala the number is said to be 36). Gujranwala reports a series of weights used in medicine including the *misqal*, *diram* and *dam*; these appear to be mainly used in prescriptions in old works on medicine.

5. The important point for present purposes is the widespread use of the standard tola, seer and maund, which appears to be more widespread than in the United Provinces.

6. The weights actually in use in the larger towns are more or less well made iron weights frequently from Agra or Delhi, but weights are now being cast in some cities, e.g., Sialkot. In rural areas in Ambala and Ludhiana stone weights are considerably used.

7. *Measures of length*.—There appear to be three more or less general tables of these measures used (a) for ordinary purposes such as measuring cloth and ordinary small lengths; (b) by carpenters and masons; and (c) for land measurement. They are:—

- (a) 3 jobs = 1 ungal or ungh.
 3 ungal = 1 girah.
 4 ungal = 1 chappa.
 8 girahs = 1 bálisht (span), or girth.
 2 bálishts = 1 háth (cubit).
 2 háths = 1 gaz (yard).

With this table are connected certain special measures:—

- 3 gazes = 1 gandhára (Gurdaspur).
 12 gazes = 1 pachosi (Hissar) or jaul (Jhelum).
 2 jauls = 1 parkala (Jhelum).
 8 pachosis = 1 adba (Hissar).
 (b) 2 solas = 1 sút.
 2 sús = 1 pain (some say 4).
 4 pains = 1 tasu (some say 6; others give 10 sús = 1 tasu).
 24 tasus = 1 Imáratí gaz; or (in Muzaffargarh) háth pakta.
 (c) 16 chappas = 1 karam (or kadam, pace).
 3 karams = 1 kán.
 10 or 12 karams = 1 jarfb.

These tables are not reported complete from any one district, but portions occur in each. Table (b) seems specially variable.

8. The British yard has spread over the greater part of the province and is reported as fairly well-known in every district except Multan, and even there it seems to be known to a considerable extent. As a rule it has been taken as equivalent to the gaz of two háths. But in several of the western districts the háth in common use is the *murwan* or *morni* (i.e., curved) háth of approximately 24", really the distance from the elbow round the tip of the middle finger and back to the knuckle. This gives rise to a gaz of 40" to 48", and the British yard is then taken as 1½ háths (Dera Ghazi Khan). In Multan a gaz of this series (45") is divided into 16 sharaks, or 20 girah, and in Muzaffargarh into 16 tasus. The other measures in table (a) would seem to be gradually becoming determined by the ratios they bear to the yard of 36", though of course there are numerous special yards for special articles, and progress in this direction is much greater in the towns and larger bazars than in the rural areas; still it

would seem that the knowledge of the 36" yard is very widespread. In this connection it is interesting to note that in Amritsar and Sialkot several special yards are reported and all are defined as of so many girahs, the girah being— $\frac{1}{6}$ of the 36" yard.

As regards table (b) the original basis was the Imarati gaz of about 33" which would make the tasu $1\frac{3}{8}$ ". But a connection has been made apparently with the *morn* or *morwan* hath by taking this as equivalent to 16 tasus. On the other hand, the Imarati gaz of 33" is apparently in some districts (*e.g.*, Ludhiana) being assimilated with the 36" yard, the tasu thus becoming $1\frac{1}{2}$ ". The use of the British inch and foot is, however, spreading among carpenters and it seems probable that the tasu and its subdivisions will die out.

9. As regards measures of length used for land the karam seems to be of double origin as was noted in regard to the United Provinces measures, *i.e.*, as the double pace, or the treble cubit. Whatever its origin it has now been practically fixed in accordance with the exigencies of land survey work. The most usual length is $5\frac{1}{4}$ ', so that 10 go to the jarib (chain) of 57', or 12 to that of 56'. A karam of 57'151" with corresponding jarib of 10 such karams is reported from Ferozepore, Hissar, and Ludhiana, of $57\frac{1}{2}$ " from Hoshiarpur, Jullundhur and the Kulu subdivision of Kangra, and one of 5' from Ferozepore, Gurdaspur and Lahore, while Kangra proper has a special karam of 56". In the eastern districts of Gurgaon, Hissar and Rohtak the 99" gatha so common in the United Provinces appears and is not infrequently termed a karam.

10. The kos is as usual a variable measure from 1 to 2 miles, and is rapidly disappearing in favour of the more exact mile. In the Canal Colonies there is an interesting instance of the introduction of a new measure. The land is parcelled out into *killas* each of 220' square and *marabbas* (or 'squares') each of 1,100' square (*i.e.*, 25 killas). In both Jhang and Lyallpur districts the lengths of the sides of the killa and marabba are becoming recognized as measures of length under the names of killa and marabba respectively.

The Canal Department has also introduced new measures of length. The canal mile is of 5,000' only, and these miles are subdivided into five equal parts, each of which is marked along the canal by a *burji* (small 'tower'). Accordingly the term *burji* has come to be used to denote a length of 1,000'.

11. *Measures of area.*—The predominant measure of area is the ghumaon, which is reported from Muzaffargarh to be the area that can be ploughed by a pair of oxen in 8 hours in the riverain portion of the district (Kachar), or in 16 hours in the uplands (Thal). It has, however, been standardized and adopted for survey work in accordance with the following table:—9 sarsabis = 1 marla; 20 marlas = 1 kanal; 4 kanals = 1 bigha; and 2 bighas = 1 ghumaon. The most usual size for the ghumaon is one British acre which makes the marla exactly equal to the pole or one square karam of $5\frac{1}{2}$ '. This is the unit of area adopted to a greater or less extent in 17 districts:—Ambala, (since 1887), Attock, Dera Ghazi Khan, Ferozepore (part), Gujranwala, Gujrat, Gurdaspur (part), Jhang (part), Jhelum, Lyallpur (part), Mianwali, Montgomery, Multan, Muzaffargarh (except Leiah tahsil), Rawalpindi, Shahpur and Sialkot. A ghumaon of 4,000 square yards is used in Amritsar, Lahore and part of Gurdaspur; one of 3,674 square yards (accurately $3,673\frac{1}{4}$) in Hoshiarpur, Jullundhur, Kangra proper, and the hill portions of Gurdaspur. Ghumaons of 4,083 and 6,050 square yards are reported from Ludhiana and Multan city, respectively.

12. The bigha of the United Provinces is used in several of the eastern districts, the pakka bigha of 3,025 square yards being current in Ambala (until the Settlement of 1887), Ferozepore (part), Gurgaon, Hissar, Karnal (part), Ludhiana, and Rohtak, often side by side with the kachha bigha of $1,008\frac{1}{2}$ square yards, which is found in Ambala, Ferozepore, Hissar, Karnal (part), Ludhiana and

Rohtak, where it is usually the popular measure only, though used in Government records in one tahsil of Hissar, one of Karnal and in Ludhiana. A bigha of 900 square yards is used in Simla and one of 968 square yards ($\frac{1}{2}$ acre) in the Kulu subdivision of Kangra. And elsewhere there are one or two other bighas. In the Canal Colonies (in Gujranwala, Jhang, Lyallpur and Shahpur districts) new units of area have been adopted. These are the killa of 220 feet square or $1\frac{1}{2}$ acres, and the marabba or square equal to 25 killas or $27\frac{1}{2}$ acres.

13. It will thus be seen that the acre is the basis of area measure over by far the greater part of the province, but an acre divided more or less on the English system and not into hundredths.

14. *Measures of capacity (dry).*—No measures of capacity are reported from Gurgaon, Hissar, Jullundhur, Karnal and Rohtak; and from Ambala, Amritsar, Hoshiarpur and Ludhiana only a very few and very indefinite measures are reported, of no interest whatever. In the other districts dry measures are more or less widely used. There appear to be two chief systems, though there is considerable confusion between them. The first and most widely used is based on a *topa* which holds somewhere about 2 seers of wheat; the variations reported from Gujranwala, Gujrat, Gurdaspur, Hoshiarpur, Montgomery, Shahpur and Sialkot all lie between $1\frac{1}{2}$ and $3\frac{1}{2}$ seers. A similar *topa* is the basis of what measures are used in Lahore, Lyallpur and Multan where, however, the use of measures is distinctly on the decline. The second chief system is based on a large *topa* averaging about 5 or 6 seers, but varying widely between 4 and 12 seers. This *topa* is current in Attock, Dera Ghazi Khan, Jhelum and Muzaffargarh, while in Ferozapore an intermediate *topa* of 3 to 4 seers is reported. In Attock and Jhelum this large *topa* is subdivided into four *chohas*, which appear to be very much the same as the small *topa*. In Jhelum this *choha* and the small *topa* are both found and are of much the same size. From Rawalpindi the *choha* only is reported. In Attock and Muzaffargarh the *odi* or *osa* of 2 to 4 seers occasionally take the place of both *topa* and *choha*. This is the usual Frontier Province measure of capacity and will be discussed there.

Measures are also used in the two hill districts of Kangra and Simla. Here the basis is the *patha* which is also found in Jaunsar-Bawar in Dehra Dun (U. P.), a measure reported as holding 2 kachha (32 tola) seers in Kangra and 3 (80 tola) seers in Simla.

These measures are widely used for practically all transactions in grain in the rural areas of all the districts above noted except in Gurdaspur, where their use is confined to a portion of one tahsil, the Murree tahsil of Rawalpindi and, as above noted, Lahore, Lyallpur (confined to those settlers who came from districts using measures) and Multan, where they are going out of fashion.

The multiples and submultiples of the *topa* and *choha* are very numerous and nearly every district uses several different tables for which the statement must be consulted. The important point to note here is that these measures are thus widely used in commercial transactions as well as in mere customary village payments, division of crops, etc., and that all are based on certain weights of the prevalent grain which is usually wheat.

Measures are invariably reported as used heaped.

15. *Measures of capacity (liquid).*—None are reported from Gujranwala, Hissar, Kangra, Lyallpur, Mianwali, Rawalpindi, Rohtak and Sialkot. All the other districts except only Jullundhur and Simla report the use of the *garwi* as a measure containing one seer of milk and used solely for that purpose. The seer may be either the 80-tola one or one of the local seers, e.g., the 100-tola seer is of fairly frequent occurrence. In Lahore a *garwi* based on the 80-tola seer is used for retail sale, and one on the 100-tola seer for purchase from milk producers. The *garwi* is divided into four equal parts usually known as *garwis*

although occasionally merely called *pao* (quarter) In Jullundur *garwi* is given as a general name for measures for milk holding $\frac{1}{2}$, $\frac{1}{3}$ or 1 seer thereof. In Muzaffargarh one of the dry measures (the *paropi*) is used and Shahpur reports the nearest approach to a table of liquid measures that there seems to be.

For oil a variable measure called a *pali* (holding from 5 to 10 chataks) is reported from Attock, Gujranwala and Ludhiana; and there are a few other more or less indefinite measures reported. For liquor the British Imperial system has been prescribed by Government and measures in accord therewith are provided through the Excise Department. The British apothecaries' weights are used for European liquid medicines, and kerosene when sold in quantities less than the tin is practically always sold by the reputed pint or quart bottle.

There is, in short, scarcely anything that can be dignified by the name of liquid measures, as what there are are made so as to hold some definite weight of some specific article, and are, therefore, only available for use in respect of that article.

16. *Measures of cubic content.*—Practically the only measures used are the British and the use of these is almost entirely confined to the Public Works and Forest Departments, and contractors working for them. Only seven districts report any measures of any sort save such as the cubic foot, etc. And of these only Ludhiana reports anything not immediately dependent on the cubic foot; in that district the cubic *sola*, *put* and *pain* are said to be used for measuring wood.

17. *Stamping and Inspection.*—Nothing in the way of general action has been done in the Punjab, a few individual attempts have been reported. In Ambala weights are inspected in the bazaars by the bazaar chaudharis; in Amritsar measures of weight and length were stamped by Government or the Municipality; in Ferozepore the Deputy Commissioner reports the use of stamped weights, but no stamping appears to be done by Government or the Municipality; in Lahore some stamping is reported to have been done occasionally in past times by the tahsil staff, but none is done now. In Multan stamping and correcting of weights was done under the supervision of the District Board by means of the bazaar chaudharis, but was discontinued in March 1913, and in Sialkot weights are brought for testing and stamping to certain families of lohars, and something was formerly done by a previous Deputy Commissioner (Col. Jenkins) in the way of standardizing the *topqa*,

BOMBAY.

Measures of weight.—The Bombay city excluded, there are three principal systems of weight in the Presidency which are to some extent continuous with the boundaries of the Divisions:—

- (1) The Railway weights are, excepting the British weights for special commodities or for export in Karachi Town, exclusively used in the seven districts of Sind, in the Ahmednagar, East Khandesh, West Khandesh, Nasik, Satara and the Sholapur districts, *i.e.*, the whole of the Central Division except the Poona district where a seer of 76 tolas as well as the Railway seer are prevalent.
- (2) A seer of 40 tolas is current practically, to the exclusion of others, in four out of the six districts of the Northern Division, *viz.*, Ahmedabad, Broach, Kaira and Panch Mahals, while a seer of 37 tolas obtains in the Surat district and one of 80 tolas in the Thana district except in the tract near Bombay where the 28-tola seer of that city is used.

- (3) In the Belgaum, Bijapur, Dharwar and Canara districts of the Southern Division the seer is one of 20 tolas, a 15-tola seer being also used in a part of Belgaum. In the remaining two districts of that Division there are various seers, viz., 30, 73 and 76 tolas in Kolaba, and $27\frac{1}{3}$, $27\frac{2}{3}$, 28, $29\frac{2}{3}$, 30 and 32 tolas in Ratnagiri. Thus the Railway seer is either the exclusive or the principal unit of weight in 13 out of 26 districts, while in four districts the seer is exactly one-half and in four more districts exactly a quarter. In the Bombay city the most common unit is a seer of 28 tolas which has penetrated a part of the neighbouring district of Thana, and the multifarious seers of the Ratnagiri district are evidently connected with the same unit.

2. All the seers have their usual binary subdivisions down to one-sixteenth, except apparently the Bombay city seer, the 20-tola seer in four districts of the

Weights below the seer

Southern Division and the multifarious seers of Ratnagiri in the same Division which stop short at one-eighth. In Sind, the chatak is called the *anna* (corresponding to the subdivisions of the rupee), and in the Larkana district of that Division the *anna* is divided into four *dukos*. In the Northern Division, the chatak ($\frac{1}{2}$ seer) is called the *adhol* and the 2-chatak or one-eighth seer weight, *navtak*. The term *navtak* is also used in the Southern Division except in Kolaba and in East Khandesh (Central Division).

Besides the above, there are several kachha or special seers used either for certain commodities or in certain tracts. But the whole of Sind is remarkably free from these complications. This remark also applies to a great extent to the Northern Division and to the East and West Khandesh districts.

3. As regards weights above the seer, the maund of 40 seers and the *khandi* (or *candy* in and about Bombay) of 20

Weights larger than the seer

maunds based on the local seers are

generally used. A part or whole of the following table is generally applicable to the Southern Division except the Kolaba district, and the Satara and Sholapur districts in the Central Division :—

2 sawasers ($1\frac{1}{2}$ seers)=1 adichser.

2 adichsers or adisers ($2\frac{2}{3}$ seers)=1 paseri or panseri.

2 paseri (5 seers)=1 dhada

4 dhadas=1 maund.

But the first three weights do not, as their names imply, always mean $1\frac{1}{2}$, $2\frac{2}{3}$ and 5 seers. For instance, in Dharwar an *adichser* weight is equal to $3\frac{2}{3}$ current seers, and in Bijapur a *panseri* is 6 seers. Such weights are apparently the survivals of weights based on a different seer which is extinct. A *dhari* which is equal to 5 seers, used in a part of Sind (Larkana and Sukkur), is quite a different weight from the *dhada* or *dhadi* which is used in the Bombay Presidency proper, and which ranges from 30 to 50 seers. The other larger weights are :—

- (1) *Kalsi* (16 local maunds) ; *ohar* (16 maunds in Ahmedabad and 24 maunds in Surat) ; *bat* (55 seers) ; *palla* ($\frac{1}{2}$ khandi) ; *mani* (12 maunds) and *galli* (30 maunds) in parts of the Northern Division.
- (2) *Palla* varying from 3 to 10 maunds, in Ahmednagar, Nasik Sholapur and Poona.
- (3) *Haru* (8 maunds) in Dharwar (Southern Division).
- (4) *Naga* or *nug* (8 to 48 maunds) in Bijapur and Dharwar districts.

The *khandi* varies from 8 to 32 maunds.

4. As in other parts of India, the greatest variations are in respect of the maund. It varies of course from place to place, but varies more according to the

Variations of the maund.

classes of commodities dealt with. The greatest number of variations is notice-

able in Belgaum, Dharwar and East Khandesh (13), Bombay city (11, besides 12 kinds of *khandis*) and Thar and Parkar (5). There are 2 to 4 kinds of maunds in Karachi, West Khandesh, Kolaba, Ratnagiri, Satara and Sholapur, and scarcely any in the remaining districts.

In Bombay, some peculiar maunds, called the *surti ektala* (38.26 lbs.), *surti betala* (29.4 and 39.2 lbs.) and *surti chumala* (41.06 lbs.), based evidently on the Surat seer, are used for certain articles.

5. The British avoirdupois weights are used for certain imported articles, for coal, firewood, cotton and in some cases for grain and groceries sold in small quantities in Bombay City, and in the Ahmedabad, Broach, Kaira, Karachi, Panch Mahals and Ratnagiri districts. For exports out of the country the British weights are used in port towns and many other trade centres. The pound weight is generally considered to be equal to 39 or 40 tolas, more often the latter, and in many places British weights are used as local weights with the object of cheating. The pound weights are also used to make up a maund, e.g., in Ratnagiri, 28 lbs. = 1 maund; in Thana 20 and 36 lbs. = 1 maund for certain articles. On the other hand, 28 maunds are considered as equal to one ton.

The apothecaries' weights are used in hospitals and dispensaries and by chemists and medical practitioners.

6. The metric weights are used to some extent in Bombay city by a few men of the medical profession, etc.

Use of metric weights.

7. The one invariable factor in the variety of indigenous weights summarized above is the tola of 180 grains or the rupee-weight. With a few exceptions, the same tola is used for precious metals, Indian drugs, etc. As elsewhere in India, rupees are freely used for checking weights and for weighing valuable articles besides gold and silver, small silver being also used but not to the same extent, for this purpose. So far as the tradesmen are concerned, one reason for this custom is necessity, as the smaller weights are expensive and not easily procurable. As regards the ordinary, illiterate customer, he naturally trusts the Government rupee more than the smaller weights of which he has no definite idea.

The weights of the special tola for gold, etc., used in certain tracts are :—

- (1) In Ahmedabad, 195.25 grains for silver lace; (2) in a part of Broach 188.85 grains; (3) in a part of Kolaba, 172½ grains; (4) in Ratnagiri, 188 and 192 grains; (5) in Ahmednagar, for gold, 187½ grains generally, but in some places varying from 180 to 192 grains; (6) in Nasik, for gold, 185, 186, 188 and 192 grains; (7) in Satara, 188 and 192 grains; (8) in Hyderabad, 175 grains. But the special tolas are used in addition to the ordinary tola in these tracts. For weights below the tola, the table used in most districts is :—

8 gunjas (*abrus precatorius*) = 1 masha.

12 mashas ... = 1 tola.

But in Guzarat the following table is ordinarily used :—

6 chokhabhars (weight of rice grains) = 1 ratti or chanoti.

3 rattis ... = 1 val.

16 vals ... = 1 gadiana.

2 gadianas ... = 1 tola.

In Bombay city, 40 vals go to the tola. In Canara (North) 2 gunjis = 1 manjuti; 3 manjutis = 1 anna; 16 annas = 1 tola. In Karachi, in addition to the first table the *mung* grain is used as a weight, 12 being considered as equal to 1 ratti, while in the rest of Sind 4 mungs = 1 ratti. There are similar variations in Surat, Poona, Sholapur and Sukkur.

A seer of 24 tolas is used for gold, etc., in the Ahmednagar, Belgaum, Bijapur, Dharwar, Canara (North), Nasik, Ratnagiri and Satara districts.

8. To revert to the question of the multifarious weights, especially the maund, apart from the stereotyped reason of old custom, the variations are accounted

Weights varying with commodities.
for by witnesses as follows :—

- (1) Peculiarity of the commodity dealt with or the weights adapted to the weights of the tract from which certain articles were originally imported.
- (2) In the past, commodities were measured and not weighed, and later, when such commodities came to be weighed, the weights were based on the original measures, e.g., in Bombay, certain articles were sold by the *khandis* of 8 *faras* measures. If these articles were now measured by *faras*, a *khandi* for a particular commodity, so measured, would correspond with the number of maunds which make that *khandi*.
- (3) Other weights were based on the old coins of different rulers of the tracts concerned.
- (4) The variations due to different causes are still maintained by traders with the object of cheating.
- (5) The variations have been introduced and maintained to encourage retail trade, the retail trader nominally selling commodities at cost price, &c., by using smaller weights under the same names.
- (6) The variations cover wastage, etc.
- (7) Before Railways and roads were made, trade was confined to small tracts which had their own system of weights, and these have outlived the cause of their origin.

All these reasons are substantially true.

9. Grain is sold by weight as well as by measure in Sind, in Gujarat and in the Belgaum and Ratnagiri districts.

Sale by weight and measures.

Weights used by Excise Department.

10. In the Excise Department the weights prescribed are as follows :—

- (a) For opium : seers, pounds and grains, one seer being equal to 2 lbs., 1 lb. equal to 40 tolas and 1 tola equal to 180 grains.
- (b) For hemp drugs : the Railway maund and seer and the tola of 180 grains.
- (c) For cocaine : (i) Wholesale transactions—pounds, ounces, drams and grains, the pound being equal to 16 ounces, the ounce equal to 16 drams, and the dram equal to $27\frac{1}{2}$ grains. (ii) Retail transactions—pounds, ounces, drams and grains, a pound being equal to 12 ounces, an ounce equal to 8 drams and a dram equal to 60 grains.

As regards (a) it would appear that even a Government Department cannot steer clear of the popular confusion in the matter of weights, as the pound is taken as equal to 40 tolas instead of its actual weight of 38½ tolas. As a whole, the system of weights adopted by the Excise Department cannot be commended on the score of simplicity.

11. *Measures of length.* As in other parts of India, the Imperial yard is widely known and used throughout the Presidency, but its use has not yet, of course, come to be exclusive. It is clear that the yard is steadily and firmly establishing itself through Manchester piece-goods, and that with anything like

an organized effort the people will be glad to be rid of their old indefinite measures. The use of the foot and the inch is not as extensive as that of the yard, but the older subdivisions, such as the *girahs* or the *tasus* are generally applied to the yard or the half-yard measure.

12. Even a meteorologist would despair of evolving any system from the confusion of the indigeneous measures. There is at least a common table applicable to different weights of the same name in homogeneous tracts, but in the case of measures of length, there is a remarkable absence of symmetry in this respect. The only constant facts deducible from the statements are that, throughout the Presidency, the British yard is called the *var* or *val*, and *gaj* in some places, that the *hath* or the ancient measure of the forearm is generally fixed at half a yard, and that the yard with its adaptations is generally subdivided into *tasus* which range from $1\frac{1}{2}$ inches upwards each, and in some places into *girahs* of $2\frac{1}{2}$ inches each. The subdivisions of the ordinary indigeneous measures, *viz.*, the *hath* or the *gaj* are also in terms of *girahs* or the varying *tasus*. The confusion as regards the *tasu* is not only due to the varying units of length to which it is applied but also to its varying number when applied to a definite measure of length in different localities.

The finger's breadth, the span and the breadth of the fist are used in many rural areas, and in some places these claim to represent some definite measures in terms of inches.

The *gaj* measure, as used by carpenters and tailors, is often different from that used for measuring cloth.

13. Subject to the above remarks, the principal indigeneous measures are summarized below by Divisions

Bombay city.—The yard, divided into 32 *tasus* and the *gaj* of 27 inches.

Northern Division.—The *gaj*, varying from $23\frac{1}{2}$ " to 37". In a part of Broach a hybrid *var* or yard of 37" is used. The *hath* varies from 18" to 20". In Ahmedabad, the *gaj* is divided into 20 *vasas*, 20 *viswasis* making 1 *vasa*. The *hath* and the *gaj* are divided into a certain number of *tasus* of $1\frac{1}{3}$ " or $1\frac{1}{2}$ " each. Land is measured in some places by a *kathi* or iron rod which is $3\frac{1}{4}$ feet in length in Ahmedabad and 5 *haths* (of 18 or 20 inches each) in Thana. The *girah* does not appear to be used in this Division.

Central Division.—*Gaj*, varying from $17\frac{1}{4}$ " to 36". *Kamdi*=18". The subdivisions are the *girah* (in Ahmednagar)= $2\frac{1}{4}$ " and the *tasu*= $1\frac{1}{2}$ ", $1\frac{5}{8}$ ", $1\frac{1}{2}$ " and 2". The *hath*, varying from 18" to 21". *Purush*, for measuring depth, above $7\frac{1}{2}$ ". *Kathi* for measuring land from $6\frac{1}{2}$ ' upwards. Rough cloth in some places is sold by weight.

Southern Division.—The yard or *var* is also called *gaj* in Bijapur. The indigeneous *gaj* varies from 18" to 27", that for measuring wood in a part of Ratnagiri being 48". A special measure used for bodice lengths is equal to 20" to 42". The usual subdivisions are *girahs* or *geris* (*navtak* in Canara) of $2\frac{1}{4}$ " each. *Kol* or *kathi*, $8\frac{1}{2}$ feet in length, is a land measure in some places.

Sind.—*Gasi*, varying from 18" to 29" and *gaz* varying from $13\frac{3}{4}$ " to 36" are common measures. The usual subdivisions are *girahs* or *annas* of $2\frac{1}{4}$ " each ($2\frac{3}{4}$ " in Sukkur), and *charki*=4 *annas*. In Nawabshah, the *hath* of 18 or 24 inches is divided into 16 *agars*. *Kano* is a land measure, $6\frac{1}{2}$ to 8 feet in length.

14. In the Land Records Department, the chain of 33 feet is used, and the measures for the Public Works Department are prescribed in their Code.

Measures for land.

15. For distances, the mile is fairly well-known throughout the Presidency. The *kos* is an elastic measure of distance as in other parts of India.

Measures of distance.

16. *Measures of area.*—The British measures, *viz.*, square feet, square yards and acres are used in the towns generally, and the first two measures to

Measures of area.

some extent in rural areas also. In the Land Records Department the acre which is divided into 40 gunthas (1×1 chain of 33 feet each) is used and the guntha is called *viswas* in the Upper Sind frontier district and *vaso* in Larkana. In Canara, the *guntha* is divided into 4 square poles or *majpettas*.

17. The principal indigenous measure for agricultural land is the *bigha* or *vigha* which varies from place to place, $\frac{2}{3}$ th of an acre in Bijapur, $\frac{3}{4}$ th of an acre in Bombay city, $\frac{7}{8}$ th of an acre in Kolaba, $\frac{3}{4}$ th of an acre in East Khandesh and so forth. In many districts (Ahmedabad, East and West Khandesh, Kolaba, Nasik, Satara, Thana, etc.) the *bigha* is divided into 20 *pands*, and the *pand* in some places is subdivided into 20 *kathis*. The table for Bombay city is 20 *kathis*=1 *vasa* and 20 *vasas*=1 *vigha*; and in Surat 20 *viswas*=1 *vasa* and 20 *vasas*=1 *vigha*. In Belgaum, Bijapur and Dharwar, the measure *kurga* which is equal to 3 to 4 acres is used. In some parts of Sind the table is—20 *viswas*=1 *veso* or *guntha*, 20 *vesos*=1 *jarib* and 2 *jaribs*=1 acre. In Thar and Parkar districts in Sind, the measures are those in general use in the Western Punjab, *i.e.*—

9 square <i>kaans</i>	...	...	...	...	= 1 <i>marla</i> .
20 <i>mailas</i>	...	...	...	...	= 1 <i>kanal</i> .
4 <i>kanals</i>	...	...	...	..	= 1 <i>bigha</i> .
2 <i>bighas</i>	...	...	..	...	= 1 <i>khuma</i> or acre.

In both the Khandesh districts, a measure called *partan* and equal to $1\frac{1}{2}$ to 3 acres is used. A rough estimate of areas is the *har*=25 acres, *e.e.*, an area which a pair of bullocks can plough in the season. Another rough estimate of areas is the seed or yield capacity of land, *e.g.*, in Thana, a maund of rice land means area yielding that quantity and $\frac{2}{3}$ *fara* of land means an area taking that amount of seed; in Satara 8 *paalis* of wheat land = 1 acre, while in Sholapur land of the same seed capacity is $\frac{3}{4}$ th or $\frac{2}{3}$ th of an acre; in Kaira, area taking 5 to $7\frac{1}{2}$ seers of *juar* = $\frac{3}{4}$ th of an acre, in Canara *dywari* means an area (= 1 acre) with a seed capacity of 1 *khandi* of grain in low-lying land and $\frac{1}{2}$ *khandi* in *makki* land. Ordinarily the term *baras* is applied to 100 cubic feet of road material, etc., but in Thana this term is also used for a superficial measure of 100 square feet.

18. In many places, the *bigha* and other indigenous measures are important not so much as actual measures, as terms of reference to old records or as traditional areas used in conversation, etc.

19. *Measures of capacity (dry)*—There is a large variety of measures and many measures of the same name have different capacities in different areas while the capacity is defined by different kinds of grains. A lucid and comprehensive summary of these measures is, therefore, impossible.

20. In the Northern Division, all articles are sold by weight in the Ahmedabad, Broach and Kaira districts. In the Panch Mahals, seer, half-seer and quarter-seer measures are used only in household transactions, in lending grain to neighbours, etc. In Surat and Thana the measures in use are the seer and the *paali*, with, their submultiples, there being a large variety in Thana which also uses the measures of the neighbouring city of Bombay. In Thana the seer measure holds 72 seers of rice and the *paali*, 160 tolas of pounded *nagli*.

In Bombay city, the measures are—

4 seers = 1 *paali* or *adholi*, 16 *paalis* = 1 *fara*, 8 *faras* = 1 *khandi*, 25 *faras* = 1 *muda*. The half-seer measure is called *tipri*. The *paali* is made to hold $236\frac{1}{2}$ tolas of *bajri*.

In the Central Division, measures bearing two separate sets of names are used:—

(1) In Ahmednagar, in East and West Khandesh, in Nasik and in a part of Poona, the table generally used is:—

2 <i>chataks</i>	...	...	...	= 1 <i>adpao</i> or <i>navtak</i> .
2 <i>adpaos</i>	...	...	...	= 1 <i>paoser</i> .
4 <i>paosers</i>	...	...	...	= 1 seer.
2 seers	...	...	...	= 1 <i>adhol</i> .
2 <i>adholis</i>	...	...	...	= 1 <i>paali</i> or <i>choutha</i> .

The measures bigger than a *paili* are the maund = 16 *pailis* and a *map* of 2 maunds in West Khandesh and Nasik, in East Khandesh a *map* of 48 ordinary *pailis* or 4 special *pailis* and in Ahmednagar a *pulla* of 30 *pailis*. The seer measure which varies holds from 82 to 160 tolas of water. In East Khandesh the seer measure is uniform and is made to hold 160 tolas of water. In Nasik the seer measure is made to hold 115 tolas of 8 kinds of grain, while in Poona, where the measure varies a great deal, it is made to hold a certain quantity of *bajri* (93 to 200 tolas).

- (2) In the rest of the Division, *i.e.*, in Sholapur and Satara and in a part of Poona, the general table is—2 *chilvas* = 1 *nilva*, 2 *nilvas* = 1 *kolva*, 2 *kolvas* = 1 *chipte*, 2 *chiptes* = 1 *mapte*, 2 *maptes* = 1 seer. Except in the part of Poona coming under this series of measures, the multiples of a seer are—2 seers = 1 *adholi* or *adiseri*, 2 *adholis* = 1 *paili*, 16 *pailis* = 1 maund, and 20 maunds = 1 *khandi*.

In the Southern Division, there is a great variety of names, some of which mean different measures in different localities. In Kolaba, Ratnagiri, Dharwar and Bijapur, the common table is—2 *chivtaks* = 1 *navtak*, *chipte*, *kolawa*, *chatak* or *nilvi*; 2 *navtaks* = 1 *paoser*, *tipri* or *kolvi*; 2 *paosers* = 1 *adser*, *nitwa*, *kalpao*, *gidna* or *mapte*; 2 *adser*s = 1 seer, *adholi*, *ara pao* or *adna*. The multiples of the seer are, *paili*, *fara*, *maund*, *khandi*, etc.

In Belgaum and parts of Canara the general table is—2 *nilvas* = 1 *kolwa*, *navtak*, *kolvi*, or *arasolga*; 2 *arasolgas* = 1 *solagi* or *girpar*; 2 *solagis* = 1 *alla*, *arola*, *arala*, *kalpar* or *arpas*, 2 *allas* = 1 *siddi*, *seer* or *pao*.

In Belgaum the multiples of a seer are:—

2 seers	...	...	...	...	= 1 adiser or padis,
2 padis	.	...	...	...	= 1 solgi or paili,
24 or 32 solgis	..	...	...	...	= 1 her or kudav,
20 hers	...	...	...	...	= 1 khandi

In Canara, however, the multiples of the seer are again different both as to capacity and nomenclature. The capacity of the seer is too varied to be enumerated and is determined by a certain amount of *bajri*, *juar*, unhusked rice or several kinds of grains mixed together.

In the Bombay Presidency proper the seer, which is the principal but varying measure, holds from 39½ to 200 tolas of water.

The principal measures of Sind are:—

4 chauthias	...	...	...	...	= 1 pati;
4 patis	...	...	...	...	= 1 toya or toyo.

The *toya* holds from 4 to 4½ seers of *mung* in the Hyderabad, Larkana and Upper Sind frontier districts, 4 to 6 seers of *bajri* in the Karachi and Thar and Parkar districts and 3½ to 4½ seers of wheat in Sukkur. The measures bigger than the *toya* are:—

4 *toyas* = 1 *kasa* and 60 *kasas* = 1 *kharar* in the Hyderabad, Karachi and Larkana districts. The multiples of the *toya* in the other districts are different both in respect of nomenclature and capacity.

21. *Measures of capacity (liquid)*—As a general rule, a measure was originally intended to hold a definite quantity by weight of the commodity for which such measure was meant. But as a matter of convenience the same measures have come to be used for different liquids of varying density. The measures for milk, however, are distinct from the measures for oils.

22 The general table, wholly or partly applicable to various commodities or places, is as follows:—

2 chataks or annas...	...	...	...	...	= 1 navtak.
2 navtaks	...	...	...	...	= 1 pavser.
4 pavser	...	...	...	...	= 1 seer.

The measures may be briefly considered by Divisions—

Northern Division—In Ahmedabad, Broach and Kaira, the seer measures for different commodities are made to hold 40 tolas of those commodities. In Panch Mahals, Surat and Thana, the seer measure holds 32 to 92 tolas of water. In Broach a measure called *ghada*, holding 20 or 21 seers of oil, is used. In Surat the maund is equal to 40-seer measures.

Central Division and Bombay Cnty.—In Poona, Satara and Sholapur measures above the seer are—2 *savasers*=1 *adiser*; 2 *adisers*=1 *paseri*; 4 *paseris*=1 *dhada*; 4 *dhadas*=1 maund. The seer holds 30 to 160 tolas of water. In Ahmednagar, a *ghada* of 10 seers is used for oil and ghi. In Poona, vessels to hold 95 and 1,040 to 1,045 tolas of oil are used.

Southern Division.—The capacity of the seer is from 20 to 96 tolas of water. In some parts of Canara the names of the measures are distinct from those obtaining in the rest of the Presidency. In Belgaum, Ratnagiri and Bijapur and in a part of Canara the large measures are—2 *panchers*=1 *dhada* and 4 *dhadas*=1 maund. *Pancher* means 5 seers in Ratnagiri and 6 in the other three districts.

Sind.—The capacity of the seer varies from 77 to 100 tolas of water. In Nawabshah, a *kupi* measure holding 20 to 26 $\frac{2}{3}$ tolas of water is used instead of a seer, while in parts of Thar and Parkar the *tipri* measure holding over 6 tolas of water is used. In Karachi, Nawabshah and Thar and Parkar, ghi and oil are also sold by vessels of capacities varying from 1 $\frac{1}{4}$ to 10 seers

23. As a general rule, in the whole Presidency ghi and oil are sold wholesale, and in some towns also retail, by weight. In a few places milk is also sold by weight.

Kerosene oil is imported in tins of 4 gallons each and is sold either by the tin or by the bottle which is of course not uniform in size. Other imported oils, including mineral oils, are generally sold by British measures or by the bottle.

24. For country spirit and *tari*, the measures prescribed by the Excise Department are the Imperial gallon and the dram, 48 drams going to the gallon.

25. *Measures of cubic content.*—British measures are generally used throughout the Presidency. The *baras* is a well-known measure for 100 cubic feet of road material, lime, etc., and a quarter of this measure is called the *fara* or *fari* in some places. The *khandi*, varying from 12 to 40 cubic feet, is used for measuring lime, timber, etc., and in Ahmednagar, Dharwar, Canara and Ratnagiri. In Bombay city and Karachi town and in a part of the Colaba district, timber is sold by the cubic ton which is equal to 50 cubic feet. In the port of Karachi, for cargo 40 cubic feet make the ton. In parts of the Northern Division the cubic gaj, the *topli* or basket and the cart-load (about 40 cubic feet) are also used as measures.

In Thana, the measure table for timber is 20 *viswasis*=1 gaj; and 3 $\frac{1}{2}$ gajes = 50 cubic feet. In Surat, the table used for big timber is 20 *viswasis*=1 *vasa* and 20 *vasas*=1 gaj. The circumference of the log is first measured in the middle by a string, the length is then doubled and squared and the result multiplied by the length of the log gives the cubic contents. In the Central Division, the cubic hath is equal to 3.375 cubic feet and the *ota* is a 100 cubic feet measure. In Sind, the cubic gaj, equal to 14 or 64 cubic feet, is used for measuring timber and earth-work, the *kharar*, equal to 2 $\frac{1}{4}$ cubic feet, for lime and the *nazi*, equal to 1 $\frac{1}{4}$ cubic feet, for measuring mud walls.

26. *Stamping and Inspection.*—A great deal appears to be done in the Presidency in the way of stamping weights and measures. In Bombay city, weights and measures are stamped, and under the Bombay Municipal Act, the use of stamped weights and measures is enforced in the Municipal markets, action

being taken by the police outside the market areas. In Karachi and Larkana the stamping of weights and measures is optional. Both weights and measures or measures only are stamped in the Dharwar, East Khandesh, Nasik, Panch Mahals, Ratnagiri, Sholapur, Ahmedabad, Surat and Thana districts and vigorous inspections appear to be made in East Khandesh and Nasik. Except in Bombay city there is no law enforcing the use of stamped weights and measures, and a great deal must, therefore, depend upon the executive steps taken to ensure the use of such measures. Such action appears to have been most successful in the East Khandesh district. In Satara and Belgaum weights and measures are not stamped. The work of stamping is done under the supervision of the Municipal staff or the Mamlatdar and in the districts the fees recovered are paid to the blacksmith, etc., employed for the purpose. No special inspection staff appears to have been entertained anywhere. The above facts relate only to Bombay city and 13 districts from which written evidence has been received.

In the Excise Department arrangements are made to stamp the prescribed weights and measures used by contractors.

CENTRAL PROVINCES AND BERAR.

Measures of weight—The Railway seer of 80 tolas is practically the

Measures of weight.

unit of weight throughout these provinces. With the exception of British weights, which will be dealt with in a further paragraph, this seer, as a unit, is exclusively used, for ordinary commodities, in all but the Amraoti, Akola and Buldana districts in Berar, and in parts of the Chanda and Hoshangabad districts in the Central Provinces. In Amraoti, the use of a kachha seer of 20 tolas is confined to the Morsi Taluq, but not to the exclusion of the Railway seer. In Akola, while commodities up to 80 tolas are sold by the Railway seer, the larger weights are based on a kachha seer of 21 tolas. The kachha seer, as a weight, does not exist. Similarly, in Buldana, the unit for ordinary commodities is the Railway seer, but the larger weights are based on a seer of 20 tolas, and in a few villages there is also a seer of 90 tolas. In parts of the Hoshangabad district, a seer of 95 tolas is used for weighing grain and ghi, but the Railway seer is predominant in the district. In Chanda, in the Sironcha tract adjoining the Madras Presidency and inhabited principally by Telugus, there is an entirely different system of weights beginning with a *tankam* of 15 tolas and ending with a *mangu* or maund of 240 tolas (3 seers).

2. The seer is divided into 16 chataks, half a chatak, called *navtak*, being also used in some places. The usual multiples of a seer are *sawaser* ($1\frac{1}{2}$ seers), *adichser* or *adhser* ($=2\frac{1}{2}$ seers), *paseri* or *panseri* ($=5$ seers), *dhada* ($=2$ *panseris*) and maund ($=4$ *dhadas*). These multiples, wherever they are used, while they bear an exact relation to one another, are not always based on the current seer, and they represent different weights in different tracts and in respect of different commodities. In some tracts even the seer varies for certain commodities; e.g., a seer of 35 or 40 tolas for butter in Chhindwara; a seer of 78 tolas (evidently a 2 lb. weight) for fruit and of 35 tolas for butter in Akola; a seer of 95 tolas for cardamoms in Jubbulpore and a seer of 100 tolas for lac in Bilaspur. But the greatest offender in the matter of variability is the maund, and these variations are governed not so much by any particular tracts as by particular commodities. The largest number of variations in the maund reported is in Amraoti and Nagpur (13 kinds each), Yeotmal (12 kinds), Wardha (11 kinds) and Akola (8 kinds). Judging from the evidence, the variations may be considered more as suggestive of types, than exhaustive. The Railway maund of 40 seers is almost exclusively used by the public in Damoh, Mandla, Nimar, Saugor and Seoni, and scarcely used in the four Berar districts, but it is widely known throughout the provinces.

The weights above the maund used in some parts of the province are the *boja* which generally means a sack of cotton equal to 10 to 15 Railway maunds, the *palla* which is equal to 3 maunds, the *gaon* or *gon*, equal to about 3 maunds and the *khandi* which is invariably 20 Railway or other maunds.

3. The weights referred to above, except the *boja* which is peculiar to cotton, are based on a constant tola of 180 grains or the rupee-weight. Indeed throughout the province rupees are often used as weights for valuable articles and by Indians of all classes for checking weights. As in the rest of India, the tola is thus an important factor in the indigenous systems of weights in the province.

4. The British avoirdupois weights, as such, especially the pound weights, are generally used in most districts for imported hardware, European stores and coal, and for cotton in the exporting markets. In many towns in the cotton districts, firewood is sold by the ton as well as by the maund. Large firms use British weights for export and in some cases also for buying commodities.

In all the cotton markets in Berar the weights prescribed and used are a *dhada* of 7 lbs., and a maund of 4 *dhadas* or 28 lbs. (*vide* Hyderabad Residency Orders, Notification No. 79-B, dated the 1st April 1898). British weights are used as stated above especially in all the towns of Berar and parts of the Nagpur and Wardha districts, in the Warora tahsil of the Chanda district, and in the towns of Jubbalpore, Saugor, Seoni, Balaghat and Raipur. In these areas and also in some other towns the pound weight is freely used as half a Railway seer, in some cases with the knowledge of the customers, and more often with the object of cheating. The maund, when used as an indigenous weight for ordinary commodities, is generally considered equal to 39 tolas roughly, and in some cases, for commodities sold in bulk, 80 lbs. are reckoned as the Railway maund.

5. The apothecaries' weights are used in all hospitals and dispensaries and by chemists, etc.

6. As already indicated, the whole structure of the Indian weights used in the province, rests on a constant tola, *i.e.*, the rupee-weight. Rupees or their equivalent tola-weights are generally used for weighing gold and silver, for other valuable articles, such as musk, saffron, scents, etc., for Indian drugs generally and for excise articles. The only variations in the weight of the tola, as used for all or some of these commodities, are — a tola = 184.812 and 194½ grains in parts of the Hoshangabad district; 184.812 grains in the Narsingpur district; 188 grains in a portion of the Buldana district; 191½ grains in a part of Chhindwara; 192 grains in Betul; 192 and 194½ grains in parts of Nimar; 196.3 grains in Seoni; and 200 grains in Nagpur. But in these areas also the rupee-weight is recognized and used as a tola. The evidence on record does not disclose any reasons for their variations, but the survival of the weights of some old coins is the most probable explanation.

The usual submultiples of the tola, irrespective of its weight, are comprised in the following table:—

2 gunjas or rattis (*Abrus Precatorius*) = 1 val (*chitatra* or *caesalpinia separaria*); 4 vals = 1 masha; 12 mashas = 1 tola. But like the rules of English grammar, every rule of Indian weights has its exceptions. In Drug, 2½ rattis go to the val and 3½ vals or 8 rattis make a masha. In the Sironcha tract of Chanda, the *tulam* or tola of 180 grains is arrived at by a table of multiples commencing with the weight of a grain of wheat or *gurujeihu*. The *gunj* or ratti is subdivided in many places and these smaller weights are generally represented by the weights of poppy seeds and rice, *juar* or wheat grains. In a part of Saugor, 6 rattis are equal to one *annu* or ¼th of the rupee-weight. Small silver is often used as weights to represent fractions of a tola. There are, again, some special weights for pearls and precious stones, *e.g.*, the *chav* and the *tank* in Akola, the latter being equal to 70 grains; in Amraoti, a special *gunj* equal to 1½ times the ordinary *gunj*; in Saugor, *biswa*, *chowni* and *tank*. A seer of 24 tolas is reported as a jeweller's weight from Akola, Amraoti and Buldana, and it is believed this weight is also recognized in some other places.

IV.] WEIGHTS AND MEASURES IN THE CENTRAL PROVINCES AND BERAR. 63

7. As regards the variations in weights according to commodities, especially in respect of the maund, several reasons have been suggested in the evidence:—

Weights varying according to commodities.

- (i) The current weights are those of places from which articles were or are imported.
- (ii) Different rulers introduced different systems in their respective territories.
- (iii) Smaller weights have been adopted for the more expensive articles.
- (iv) Allowance has been made in the systems of weights for dryage, leakage and wastage in other forms which certain commodities are liable to. This simplifies, for tradesmen, the adjustment of prices. The allowance for wastage was an important consideration in old times when communications were bad.
- (v) A convenient unit was adopted for each class of commodity, with regard to its bulk, etc., and this unit was called the maund.
- (vi) These multifarious maunds form a trade secret, and it is advantageous to the several trades to maintain the variations.

These reasons appear to be more or less correct.

Generally speaking, the system of weights is the simplest in the most unsophisticated parts of the province, e.g., in the Damoh, Mandla, Saugor and Seoni districts.

8. In some cases, different weights of the same name are used in the same place when buying and when selling the same commodity. For instance, in Akola petty grocers buy articles by the seer of 80 tolas and sell them by the 2 lb.-weight, which is called a seer. In Nagpur, salt is bought by traders by the maund of 40 seers and sold by a maund of 15 seers, and ghi is bought from *gaolis* by a maund of 41 seers and sold by the maund of 40 seers. According to two witnesses from Nagpur both parties to such transactions know and recognize the custom. The reason for the custom apparently is that the bulk of the petty trade is in the hands of illiterate men who have to depend on mental arithmetic for calculating their profits and making an allowance for wastage.

9. As a rule grain is sold retail by measure of capacity, but in the Betul, Hoshangabad, Jubbulpore, Mandla, Narsingpur, Seoni, Drug and Yeotmal districts, it is sold both by weight and by measure, while in Burhanpur town (Nimar district) it is sold exclusively by weight.

10. *Measures of length.*—Owing principally to the universal use of English piece-goods, the yard, which is called *war*, *gaj* or *gaz* has become quite a common measure in towns, and to a considerable extent in rural areas. The foot and the inch are not so widely used outside towns. The yard is usually divided into 16 *girahs*, and the half-yard measure which roughly corresponds to the old measure of hath or length of the forearm is very popular. The table in common use runs thus:—

3 anguls or ungalis (finger's breadth)				= 1 girah.
4 girahs	...	...	...	= 1 balisht, bilas or vit (span).
2 balishts	...	...	...	= 1 hath.
2 haths	...	...	...	= 1 gaj or war.

In some places the half-yard measure is called *gaj*, and the local *gaj* measure varies in some rural areas of Nimar and Saugor. The hath is generally recognized as equal to 18 inches, but it is a rough measure and varies in some tracts from about 16½ to 22 inches. In some places the hath or *gaj* is divided into *tasus*, a *tasu* being generally equal to 1½ inches.

As regards measures above the yard, in the Central Provinces the Department of Land Records uses the Gunter's chain of 66 feet and in Berar a chain of 33 feet. The illiterate agriculturists who have to deal more with areas than with lengths have only a vague idea of these measures. Some rough approximations as regards measures for distances are—a *wawar's* or field's length; *hank* or distance to which a man's voice can reach (about half a mile); *dhap* (1 to 1½ miles) and *kos* which is ordinarily 1½ to 2 miles, the proverbial Gondi *kos* being, as many a weary traveller has found by experience, very elastic and in the neighbourhood of 3 miles. The province is, however, well served with made roads and the people generally have a very fair idea of the mile.

11. *Measures of area.*—The British measures up to the square yard are used in large towns for measuring building sites, etc. In the Akola, Amraoti, Buldana, Jubbulpore, Hoshangabad, Betul and Chhindwara districts, the measures known in rural areas are:—

20 *kathis*, or poles = 1 *pand*,

100 *pands* = 1 *bigha*,

the area of the *bigha* varying from 1,600 square yards to an acre. The Land Records are maintained in the Central Provinces and in the recently settled villages of the Melghat Taluq of Berar in terms of the acre and its fractions in decimals; in the rest of Berar in terms of the acre which is divided into 40 *gunthas*, each *guntha* being 1 × 1/4 chain of 33 feet. Practically, all documents relating to land are drawn up in those terms in the respective areas, and most agriculturists have become so familiar with those measures through the Land Records that they have scarcely anything beyond a vague idea of the older measures.

12. In the rural tracts, however, estimates of an area are made by cultivators in terms of its seed capacity, the time taken to plough or harrow it or to weed the crop standing on it or to sow it, with one or more pairs of bullocks. The area so determined varies with the nature of the soil, the kind of crop sown, etc. Of these the most commonly used are the following:—

- (1) *Tifan* of land-area which can be sown in a day with one drill; it varies from 3 to 5 acres. This measure is common in Berar and in the Nagpur district.
- (2) A *nagar* (plough) *hal* or *kuthwa* of land, *i.e.*, an area which can be cultivated with one pair of bullocks; 12 to 20 acres. The districts in which this method of estimating area is employed are Amraoti, Betul, Chhindwara, Damoh, Drug, Hoshangabad, Nagpur and Raipur.
- (3) *Wakhar* of land = 1½ to 2 acres, used throughout Berar. It means an area that can be harrowed in a day with a pair of bullocks.
- (4) *Khandi, mani* or *dhada* of land, *i.e.*, an area which takes these measures of seeds of particular kinds. The area of course varies with the character of the soil, the kind of seed sown and so forth. Thus a *khandi* of *juar* = 20 acres in some places; a *khandi* of *dhan* (rice seed) = 2 to 2½ acres; a *khandi* of wheat = 5 acres and a *dhada* of land = area taking one *dhada* of cotton seed.
- (5) *Dhusa* or *daura* of land = 2 to 4 acres, used in the Nagpur and Buldana districts and means an area which can be weeded with one pair of bullocks in a day.
- (6) *Mala, avad* or *manda* of land, *i.e.*, an area under crops which can be watched by a watcher from one platform. The mode of estimating an area obtains in the Amraoti, Chanda and Chhindwara districts. The area varies from 2 to 8 acres according to the character of the country and the importance of the crops.

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13. *Measures of capacity (dry).*—These measures are much more variable than weights, principally because they are not based on any common factor, such as a measure to hold a definite weight of water, but are made with a view to hold a definite weight of the staple grain of any particular tract. Then the custom of using measures heaped adds to the uncertainty of a given bulk of grain of the same kind but belonging to different areas or seasons being the same weight. Another reason for such variations is that the majority of these measures are made locally by the town or village carpenters who have no idea of exactness, and the dimensions are determined more with regard to convenience in handling the measures than to their correctness. The only exceptions to the general lack of uniformity are :—

- (1) The grain markets in municipalities in Berar which have been brought under the Berar Cotton and Grain Markets Law. The measures in these markets are prescribed and enforced.
- (2) The Nagpur and Raipur Municipalities where measures are to some extent stamped and in the Balaghat Municipality. In these Municipalities the use of other than the prescribed measures is prohibited under by-laws framed under the Central Provinces Municipal Act.

14 The *paili* is a common measure in the districts of the Nagpur, Berar and Chhatisgarh Divisions and in the Betul, Chhindwara, Mandla and Damoh districts. In some of the Central Provinces districts, the measure corresponding to the *paili* is called *chowthia*. The *paili* is generally made to hold 100 tolas of rice in Nagpur, Balaghat and Bhandara, and 100 tolas of wheat in Wardha, Chanda, Damoh and Chhindwara. In Berar, the capacity of the *paili* measure varies from $1\frac{1}{2}$ seers of *juar* in Yeotmal to $4\frac{1}{2}$ seers of *juar* in Buldana. But this does not exhaust the variations in the *paili* which range from 40 tolas to 9 lbs. of wheat and $4\frac{1}{2}$ to 28 seers of *juar*. Half a *paili* is called *adholi*. The seer-measure, where used, is ordinarily $\frac{1}{4}$ of a *paili*, except in parts of Amraoti where it is equal to half a *paili*. The *kuro* measure is generally an adjunct to the *paili* and its capacity is 8 times the latter. Another common table is :—

4 pahols, pohais or chahols	...	...	=1 chowthia or barhaiya,
4 chowthias	...	...	=1 kuro or kuraya.

This is more or less common to Damoh, Drug, Jubbulpore, Mandla, Saugor and the capacity of the *chowthia* ranges from 60 to 111 tolas of wheat. The next general measure of any importance is the *katha* which is used in parts of the Nagpur Division and in the whole of Chhatisgarh. The capacity of the *katha* is 400 tolas of wheat or 365 tolas of rice. The *kangan* is one-fourth the capacity of the *katha*, but is very little used. The Nimar district and the Sironcha tract of Chanda have their own peculiar names for their measures, the unit in Nimar being a *chowki*, made to hold $4\frac{1}{2}$ seers of wheat. The common multiples used for the purpose of computations are the maund, *khandi*, *mani*, *manosha*, *kmesha*, etc., but there are no such actual measures.

15. Except in the Hatta tahsil in Damoh, in the town of Mandla, and in respect of the *katha* measure in some places in the Chhatisgarh Division, measures are used heaped, generally fully, throughout the province. The *katha* measure in Chhatisgarh, where it is used struck, is provided with an elaborate striker, called the *sig*-outter.

16. While there is a far greater variety of measures than weights throughout the province, there is not the same amount of confusion in respect of different measures for different commodities as in the case of weights.

17. Grain and oil seeds are generally sold by measure, especially retail.

In some districts, as reported from Chanda, Drug, Jubbulpore and Raipur, there is a smaller set of measures for paying field labourers, etc.

18. *Measures of capacity (liquid).*—The general unit for the whole province is the seer, with its subdivisions down to the chatak. The seer does not always, as its name implies, mean a seer of weight of any particular commodity. The basis of the liquid measures generally is a definite weight of the commodity for which it is intended, but in many cases the same measures are used for different kinds of liquids, and in the case of edible oils their various densities are ignored. Again, in many cases the measures of capacity for dry articles are used, e.g., the *paili* measure used in Chhanda, Chhindwara, Nagpur, and Wardha, which is made to hold 100 tolas of rice or 100 tolas of wheat and in Raipur, the *chabela*, the *pohai* and the *chowthia*, the *chabela* holding $\frac{1}{4}$ th seer of rice. The *pohai* and *chowthia* are also used in Drug. The seer-measure is known as *lota*, *tomi*, *anda* or *kama* in the Hoshangabad district, and in the Sironcha tract of Chanda the measures bear Telugu names, but the system is much the same as in the rest of the province. The name term is sometimes used in different tracts to denote different measures in relation to the seer-measure; for example, in Chhindwara the *adholi* means half a seer measure while in Wardha it means 2 seers.

For oils generally there are higher denominations than the seer, the *paili* etc., such as the *paseri*, the *dhadi* and the maund, and these vary according to the unit. Kerosene oil is sold by the tin of 4 gallons, or by the ordinary bottle of varying capacity. The same remark applies to oils imported from foreign countries, while oils manufactured by European processes in India are sold either by the gallon and the bottle or by local measures. Locally manufactured oils are sold by measure in most places and by weight in some, while ghi which is generally sold by weight is in some places sold by measure.

The Excise Department has prescribed for its warehouses and all liquor shops the gallon, the seer (or the reputed quart bottle) and the dram, 8 drams making one seer and 6 seers making a gallon.

19. *Measures of cubic content.*—The British measures used by the Public Works Department are familiar to people in large towns and some other advanced areas, and are employed for measuring timber, masonry or earthwork and the like.

The *baras*, *fanna* or *fadi*, i.e., 10' x 10' x 1' or 100 cubic feet, is a common unit used by the Public Works Department for measuring building or road materials, such as stone, metal, sand, murrum, lime, etc., and this measure is fairly well-known in towns and large villages.

In rural areas and the smaller towns the hath is the general unit, and definite quantities, etc., are called by definite names, but they vary in different tracts according to the length of the hath or the factors employed:—

- (1) *Dagon* or *dagni* in Mandla, Seoni, Bilaspur and Drug.
- (2) *Pasori* in Nagpur, Bhandara, Chanda and a part of Seoni.
- (3) *Rumal* (or the length of the ordinary headgear) the measurements being 3 x 3 x 1 haths, in a part of Chanda.
- (4) *Kanti* and *latha*, based on the hath, in a part of Saugor.
- (5) A cart-load of certain materials, such as stone, coal, straw, etc., the quantity depending on the size of the cart, the bulk of the commodity, etc., and varying from 8 to 14 cubic feet.

In rural areas, in selling timbers the cubical contents are not actually worked out, but only the length, the diameter and the quality of the wood are considered.

20. *Stamping and Inspection.*—No regular action has been taken in the province. As stated before, in Berar, uniform weights and measures are prescribed in the cotton and grain markets notified under the Berar Cotton and

Grain Markets Law, and in some of the grain markets the measures would appear to be stamped. In the Nagpur Municipality all weights and measures are supposed to be stamped, but this was not borne out at our inspection of the bazaar. The Deputy Commissioner, Nagpur, reports that the use of stamped weights and measures is in force to some extent in the other municipalities in the district. In the Raipur Municipality only the *katha* measures and in the Balaghat Municipality all weights and measures are reported to be stamped. In the cotton and grain markets in Berar inspections are systematically made by the committees in charge of those institutions. Elsewhere inspections by the Police and the Municipal agency seem to be made occasionally.

The Excise shops in the province are supplied with weights obtained from the Postal Workshop at Aligarh, and with stamped liquor measures made by a contractor at Nagpur. These weights and measures are systematically inspected by the Excise and the Revenue staffs.

BURMA.

Measures of weight.—With the exception of Akyab and Northern Arakan, where the Indian seer is to some extent used, and Victoria Point in Mergui

where Chinese weights are prevalent, there is a remarkable uniformity in the weights in use throughout the country. The universal unit is the *peiktha*, usually known to the European under its Madras name of viss, a word not generally known to the ordinary Burman. This has been fixed by Government order (Municipal and Local Department Notification No. 137 of 5th July 1909) as 140 tolas, it having been previously recognized as 3·65 lbs or $141\frac{1}{2}$ tolas, though often supposed to be $142\frac{1}{2}$ tolas. But this fixation does not appear to have extended to any appreciable extent beyond the municipalities which have mostly passed by-law to the effect that the viss is of this weight. But even in municipalities the fact does not seem to be widely known nor do any serious efforts seem to be made to enforce the orders. Thus in the Municipality of Sagaing the Deputy Commissioner tested several visses and found them to vary between 130 and 150 tolas; and in Mandalay itself a group of witnesses including an Honorary Magistrate and two Municipal Commissioners stated that 10 visses were checked by weighing against 1,425 tolas. In Myingyan, the alteration was actually carried out by the Municipality; traders made no change in prices in consequence of the reduction in weight. A certain but apparently not large amount has been done by some municipalities in the way of stamping weights; thus this is done to a greater or less extent in Bassein, Moulmein, Mandalay, Myingyan and Rangoon. The original value of the viss appears to have been about $142\frac{1}{2}$ tolas. The gold tikal (which is based on the original viss) is reported from the Ruby Mines district, a place where accuracy in weights is intrinsically probable, as equal to one rupee, three two-anna pieces and $4\frac{1}{2}$ small ywés, which gives a tikal of $257\frac{1}{2}$ grains, as against one of $257\frac{1}{2}$ grains derived from a viss of $142\frac{1}{2}$ tolas. These details are, however, of but little more than historical interest, as the viss has now been standardized at 140 tolas or 3·60 pounds avoirdupois. This viss is universally subdivided into 100 equal parts, known as *kyat* or *gyat* to the Burman or sometimes simply as *tha* (piece), and to the European and Indian as tikal.

2. The names of Burmese weights are often apparently different through the addition or prefixing of various particles, thus the word *lé* meaning 'weight' is often added, or *tha* meaning 'piece', or *ta* meaning 'one' or 'a single' is prefixed. Thus *ta-gyat-tha* is 'one-tikal piece', and *kyat-lé* is 'tikal weight' both meaning merely one tikal, or the number only is given with the termination *lé*, thus *ngá-ze-lé* literally '50-weight' is used to denote 50 tikals or a half-viss.

3. When, however, we consider the weights below the tikal we find very considerable confusion. The original Burmese table would appear to have been

Weights below the tikal.
 2 small ywés = 1 large ywé; 2 large ywés = 1 pè; 2 pès = 1 mú; 5 pès = 1 mat; 2 mats or 5 mús = 1 ngá-mú ('five-mú'); and 2 ngá-mús = 1 tikal.

Owing to intercourse with India and the introduction of the rupee with its division into 16 annas the tikal came to be also subdivided into 16 equal parts, which were called pè, just as the $\frac{1}{16}$ th of the tikal was. Accordingly, the following table came into use side by side with the one just given:—4 large ywés = 1 large pè; 2 large pès = 1 large mú; 2 large mús = 1 mat; 4 large mús or 2 mats = 1 ngá-mú, and 2 ngá-mús = 1 tikal. In this table the mat, ngá-mú and tikal are the same as in the one first given, the other weights are different. As the use of this table spread, the pè and mú in the first table became designated as the small pè and mú to differentiate them from the larger weights of the same name in the second table. (The words in Burmese used to mean small are variously *ngé* or *galé* after the names of the weight and *kyin* or *gyin* before it: large is designated by *gyi* after the name). An inspection of the two tables shows that in the former the pè is $\frac{1}{16}$ th and the large ywé $\frac{1}{16}$ th of the tikal, while in the latter they are $\frac{1}{8}$ and $\frac{1}{4}$, respectively. The ratio of the small to the large ywé thus arrived at is 64 : 120 or very near the usually recognized one of 1 : 2. As, however, the small ywé is usually taken to be represented by the seed of the *Abrus Precatorius* and the large ywé by that of the

Adenanthera Pavonina,* the ratio between them is somewhat uncertain and we find it reported as 2 : 3 in Pakokku, 3 : 4 in Pegu and 1 : 4 in Prome, but 1 : 2 is by far the most usual.

Between the above two tables there have been numerous permutations and combinations reported, sometimes the large pè is expressed in terms of the small ywé and *vice versa*; when this is done it is most usual to take 4 large ywés as equal to the small pè and $7\frac{1}{2}$ small ywés equal to the large pè, but there are numerous variants, Myaungmya and Thaton giving 3 large ywés to the small pè, and Myingyan and Rangoon 8 small ywés to the large pè.

4. This, however, does not by any means terminate the confusion, for with the introduction of the rupee the name *kyat* or *gyat* already used to denote the tikal, was applied to the rupee too and also to it as a weight, and the word pè was used to denote an anna or $\frac{1}{16}$ th of the tola, and we thus have a third meaning for the word pè when used to denote a weight. We have already seen that in the second table the term ngá-mú literally meaning 5 mús is used to denote 4 mús or 8 large pès. Applied to the subdivision of the tola and rupee ngá-mú means a half tola or 8 annas, and at the same time the word mú is used to denote 2 pès or annas. As a result of the attempt to combine the two systems we get the following as the subdivisions of the rupee or tola:—one anna is one pè; two, 1 mú; three, 3 pès; four, 1 mat; five, 5 pès; six, 3 mús; seven, 5 mús less one pè; eight, 5 mús; nine, 5 mús and 1 pè, or 6 mús less 1 pè; ten, 6 mús; eleven, 6 mús and 1 pè, or 3 mats less 1 pè; twelve, 3 mats; thirteen, 3 mats and 1 pè; fourteen, 'less 1 mú' (*i.e.* one rupee less one mú); and fifteen annas is less 1 pè (*i.e.*, one rupee less one pè). In selling gold the mú usually means $\frac{1}{16}$ th tikal, but, sometimes $\frac{1}{8}$ th tikal; in selling opium it always means $\frac{1}{16}$ th of a tola; but in any case the pè is always half the mú.

Even now the meanings of the words mú, mat and nga-mú are not exhausted, for the Ruby Mines district reports them as subdivisions of the ratti and here 4 mús go to the ngá-mú and 2 to the mat. The ratti is invariably used for weighing precious stones throughout Burma, and is usually subdivided into 20 biswas, and regarded as itself $\frac{1}{4}$ th of the tola, which in the Ruby Mines is termed *balí*, probably a corruption of the North Indian word *bhari* so frequently used to denote the rupee when used as a weight. In Rangoon, it is reported that the ratti is termed the *kyat*, and the biswa anna (though it is $\frac{1}{16}$ th ratti). This 'anna' is subdivided into 6 ywés.

5. The other weights present few features of interest. The 80-tola seer and maund are used by Government for opium (hence probably the remark that 'Government prefers Indian weights and the tola for silver'); but otherwise the Indian railway weights are practically unknown, save in Akyab and North Arakan where the 80-tola seer is found but accompanied by other seers, the only one

* One other seed is occasionally used as a weight, this is the methin or seed of the *Goronia Pedunculata*, regarded as equal to 8 large ywés

of interest being the shwé-lá or 'gold-weight' seer of approximately 56 tolas, said to have been introduced at the Burmese conquest. This is also reported from Amherst where it is used by the fishermen of Moulmein, and from Mandalay. Curiously it is exactly equal to the Chinese viss, which is $\frac{2}{3}$ of the ordinary Burmese viss, but subdivided like it into 100 tikals. The Chinese weights are scarcely used save by Chinamen in transactions *inter se*; and as a matter of fact weights are really but rarely used, weighing between Chinamen being generally done by the steelyard, *le-dan* or *tanng-tzu*. Wherever it is used objection is made to it by Burmese as leading to fraud. Goods for export to China *via* Bhamo are made up and invoiced according to Chinese weights. British avoirdupois weights are used to a small extent in some of the larger towns, *e.g.*, for ice in Bassein, a few articles in Pegu, and of course in the export trade. British apothecaries' weights are used for European drugs.

6. The weights in actual use in the larger markets are, as a rule, fairly well made. The sizes employed almost invariably include weights of $\frac{1}{2}$, 1, 2, 5, 10, 50 tikals and of 1, 2, 5, 10, $12\frac{1}{2}$ and 25 visses. Weights of $6\frac{1}{2}$ and $12\frac{1}{2}$ tikals, and $7\frac{1}{2}$ visses are less common. In Burmese times weights were, at least in Mandalay, issued under royal authority, such weights were known as *sandawmi* and were in the shape of the *hentha* or Brahmini duck, and such are even now made at Amarapura. King Mindon is said to have fixed $12\frac{1}{2}$ visses as equal to 1,786 rupees (of his mintage), the $12\frac{1}{2}$ visses being doubtless selected because it was the weight of rice contained in the then standard viss. Weights that depended on this equation were known as *dinga-le*. These *hentha* or 'bird' weights are not infrequently to be found in actual use in the bazaars. In Pakokku weights of white marble are made covered with a design to prevent fraudulent chipping.

The smaller weights (below the tikal) are of less uniform shape. It is only jewellers in a large way who have good sets, such include weights of 1, 2, 3, 4, 8, 16, 32, 64, and 100 carats, of 1 and 3 biswas, of $\frac{1}{4}$, $\frac{1}{2}$, 1, 2, 3, 8, 16, 32 and 64 rattis, and of 1, 2, 3, 5, 10, 20, 30 and 50 tolas.

7. It must not, however, be concluded that the viss is by any means always what it purports to be. Many instances of it being under weight have been reported; visses 5 to 10 tikals short are reported in Moulmein, and in Myingyan the variation is said to be from 90 to 105 tikals.

8. *Measures of length.*—The almost complete uniformity which at least in theory characterizes the measures of weight in Burma is a still more marked feature of those of length. There is practically only one table for the whole country, with a few separate measures unconnected with it. The chief unit is the *taung* or cubit, corresponding closely to the *hath* of India, only that it never seems to have been so variable a measure as that was. For all commercial purposes it has now been fixed at 18". It varies from that of course in rural areas, the variations being greater the greater the distance from any place of importance. But in cases of dispute it is always held to be 18 British inches. The only special *taungs* reported which are recognized as differing from the half yard are two specially used for measuring timber, and used in Pakokku and Shwebo; they are respectively $19\frac{1}{4}"$ and $19\frac{5}{8}"$, and are probably connected with the old Mandalay cubit of 19" reported to have been used in building the royal palace there. The half-yard cubit is frequently known as the *gark-taung* to distinguish it from the old country *taung* of 17 to $17\frac{1}{2}"$ which is known as the *mein-ma-taung*, *i. e.*, woman's cubit, but the necessity for this distinction is fast disappearing, with the spread of the knowledge of the British measures, of which the inch (*letma*), foot (*pe*), yard (*gark*), furlong (*plang*) and mile (*maing*) are all becoming known; still for distances the indigenous '*daing*' about two miles is the most common measure; in Moulmein the use of British measures is obligatory.

Of special tables there are only two of any importance, these are—one based on the Indian cubit which, however, is divided into 4 *girahs* used in Akyab mainly by Chittagonians; and various Chinese measures used by Chinamen,

but practically only in transactions *inter se*. Such measures are reported from Bhamo and Rangoon. The Malay cubit or *herta*—also of 18"—is used at Victoria Point in Mergui.

9. *Measures of area*.—For the purposes of Land Records there is but one measure, and that is the acre divided into hundredths which are usually known as *dathama* (*i. e.*, 'decimal'). The acre is rapidly becoming known all over the province; thus in Amherst where it has now been in use for some 60 years, it is said that at least one or two men in every village know well what an acre is.

The only approach to a regular unit of area in Burmese times appears to be the *pè*. Of these there were two, the *pegadi* or public *pè* defined as 625 *palagwet*, the *palagwet* being one square *ta* (7 *taungs* or cubits, *i. e.*, approximately 10½'). Taking the cubit as exactly 18" this gives an area of 7,656½ sq. yards for the public *pè*. The *min-pe* or official *pè* was supposed to be double the public *pè*, and was defined as an area 35 *ta* 2½ *taungs* square, which is accurately 1,241·7 *palagwet* instead of 1,250. The public *pè*, now generally taken as 1½ or occasionally 2 acres, survives in some of the Upper Burma districts being reported from Kyauksé, Lower Chindwin, Mandalay, Meiktila, Myingyan, Upper Chindwin and Yamèthin. In the last named district it is still used as a measure of area in some unsettled state lands. The *pè* of 306½ square yards reported from Bhamo, and of 2,356 square yards from Hanthawaddy appear to be quite distinct measures.

An area of 40 *lan* square or about 6,400 square yards is known as *alan-ta-se* and is used in several of the delta districts, mainly as a rough measure for paying paddy reapers. It is also reported from Mandalay. In the Arakan coast districts of Akyab and Kyaukpyu the *dun* of 6·4 acres appears to have doubtless come from Chittagong. It is usually termed *kyat* by the Arakanese. The *ta* is an apparently variable square measure, being reported as 10 × 7½ *taungs* or 18½ square yards in Amherst, 1 sq. *ta* or 12½ sq. yards in Bhamo and 7½ *taungs* square or 1,406½ sq. yards in Thaton. The *kan* appears in Minbu and Pakokku as ¾ and ½ acre respectively while in Henzada it is 10 *tas* square or only 122½ sq. yards.

10. The usual way by which the Burman expresses an area is by the amount of seed required to sow it, the number of persons required to transplant paddy into it, the number of bundles of paddy plants required to transplant it, the amount of grain it produces or the number of oxen or buffaloes required to work it. Thus a very usual expression is the area sown with one basket of paddy. This is variously expressed according to the district reports as *tin-gye ta-din-gya*, *ta-din-kin*, *ta-gyaw-ga*, *ta-din-saik*, etc. A series of measures of area is arrived at by substituting for *din* (basket) in the above the names of other measures, *byi*, etc. The area varies of course with the grain and soil; paddy is, however, by far the most usual, and in this case the area is generally a little under an acre, though in Bassein it is stated as 4 or 5 acres according as the seed is broadcasted or transplanted, in the former case the area is known as *ta-din-gye*, in the latter as *pyo-ta-din-saik*. In Yamèthin the *ta-din-gye* has become sufficiently definite to be used in documents regarding land.

When the area depends on the number of persons required to transplant paddy into it, the expression contains the word *saik*, thus, *ta-yauk-saik* means the area that can be transplanted with paddy in one day by one person, and which appears to vary from ½ to ¾ acre. This form of measure appears to be most common in Upper Burma and the most northern districts of Lower Burma.

Expressions for area containing the word *pyo*, usually depend on the number of bundles of paddy seedlings required to transplant it with. Lower Chindwin gives the word *pyo* as used to indicate in this connection an area of

$1\frac{1}{10}$ acre, while Mandalay reports the expression *pyo-win* as meaning the same. *Pyo-ta-ya-win* and *pyo-nga-se-win* denote the areas transplanted with 100 and 50 bundles respectively, which areas are stated as $1\frac{1}{2}$ acres (in Kathai) and $\frac{1}{2}$ acre (in Myingyan) respectively.

Tin-dwet means the area producing one basket of paddy, and is reckoned as $\frac{1}{10}$ acre in Bassein, *Ta-ya-dwet* means the area producing 100 baskets, and is 5 acres in the case of juar in Pakokku. In Yamèthin the expression is *ta-ya-gin* and the area 2 acres.

Lastly we have expressions dependent on the ploughing power of cattle, and here there appears to be confusion between the area that can be worked for the season by a pair of plough animals (*nwe* denotes bullocks and *kywé* buffaloes) and the area which such a pair can plough in one day; the same expression appears sometimes to denote the one and sometimes the other. Thus *nwe-ta-shin* in Bassein means an area of 8 acres and in Katha of only $1\frac{1}{2}$ or in Myingyan of 4. *Kywe-ta-shin* means 30 acres in Myaungmya and only 10 in Yamèthin and yet all appear to mean the area ploughed by a pair of oxen or buffaloes. Tharrawaddy gives the expression *talondun* (literally the area that can be worked with one plough) as of the same meaning and implying an area of about 7 acres, while Pegu uses *ton dwin* as representing 10 acres.

The foregoing shows that there are no definite Burmese areas of land, and the ease with which the acre and dathma system is spreading shows that some definite measure was clearly wanted.

11. *Measures of capacity (dry).*—There is but one table of these measures

throughout the whole of Burma with very trifling exceptions. These exceptions occur in Akyab, Kyaukpyu and the Shan States. In Akyab and the Cheduba Township of Kyaukpyu the basket used is approximately half that used elsewhere in Burma, and subdivisions appear to differ from those in force elsewhere. In the Southern Shan States (Launggyi) the *pyi* is said to be the same as the *seit*, i.e., to be one-fourth of the basket; instead of the usual $\frac{1}{4}$.

12. *Basket in Burmese times*—Though the table of measures is thus uniform the capacity is very far from being so. The origin of the tin or basket appears to have been the largest measure that a man could conveniently carry and in this connection it is of interest to note that the objection to an 8-gallon basket in Akyab is that it would be too heavy for the Arakanese cooly to carry while in Bassein it is objected that if the present basket were reduced to this size there would be loss of labour as the men at present carry more. As a more definite origin it is said that the *lamè* represents two handfuls, or the *pyi* $1\frac{1}{2}$ visses, of white rice. The Burmese Government appears to have made attempts from time to time at standardizing the basket and also appears to have had an official basket one *pyi* ($\frac{1}{4}$) larger than the ordinary basket. The British Government has more or less recognized as the standard basket one of 9-gallons capacity, and this is used in Settlement Reports, and for calculations of outturn, other baskets being expressed in terms of this.

13. The rice-millers of Rangoon, Bassein and Moulmein use a combination of measure and weight for purchasing

paddy. The baskets actually used in Rangoon and Bassein are as a rule cylindrical, $24\frac{1}{2}$ " to 15" in height and $14\frac{1}{2}$ " to 15" in diameter. One or other of these baskets is taken to measure the paddy which usually comes in by boat, and every now and then a basket is weighed, the usual proportion being 5 or 6 per 10,000. The price is fixed per 100 baskets of 46 lbs. with the proviso that $2\frac{1}{2}$ per cent more shall be paid for every pound the average basket weighs in excess of 46; while if the average weight turn out less than 46 lbs. a deduction of that amount or of 2 per cent is made in the price for every pound short.

A good deal obviously depends on the size of the basket adopted, and that the method is far from being really satisfactory appears from the

experience of certain cultivators of Pakokku who, having previously weighed their paddy under the supervision of the local Co-operative Credit Society, sent it to Rangoon where it was measured in the usual way with the result that their 50 lbs. baskets were said to be of only 47 to 48 lbs and paid for accordingly. It is interesting to note that a very similar system was formerly employed by the growers in rural areas near Delhi in disposing of grain to wholesale purchasers, but has "fallen into desuetude in the course of the past few decades on account of its roughness".

14. For all other articles of export, rice and 'offals', beans, peas, millet and maize, definite weights are fixed as the recognized basket and purchases for export are really by weight pure and simple, the consignment being weighed and converted into baskets at these rates.

15. The baskets in ordinary country use vary greatly; as a rule they are smaller than the 9-gallon basket, but occasionally even larger, and are not often smaller than 8 gallons. A larger basket tends to be used for lighter and more bulky produce, though this is not a certain rule, and baskets tend to grow as the place gets nearer a trade-centre. They vary according to the quality of the paddy and the freight from the place at which the paddy is purchased to the place of export, and on the state of the market. But these reasons do not explain all the variations which appear to be largely a matter of pure chance; every village has its own 'standard' basket used in dealing with brokers and occasionally two or three if it be a large one.

Of all places the basket appears to be most variable in Taungdwingyi in Magwe, where the basket for ground-nuts is said to vary from 20 to 40 lbs., while expressed in pyis based on an approximately standard basket, the baskets in use there and in the adjoining subdivision of the Yamethin district (Pynmana) vary from 8 to 20. Myingyan reports variations to the extent of 2 pyis each way. Such great variations appear, however, to be unusual, and in general they are comprised within the limits of one pyi each way, i. e., 6½ per cent more or less, with, as already noted, a tendency to being generally distinctly under the Government 9-gallon basket.

As a means of trade they are obviously a somewhat unsatisfactory measure, and the remark of Lim Shwe Lu, a Chinese broker of Rangoon, that "it is difficult for me to say whose measure is the correct one" is decidedly *a propos*. Frequently brokers take their own measures with them when purchasing paddy. It is in fact well called "a measure of agreement".

16. The variations of the *pyi* are also considerable. Thus in the bazaar at Pegu pyis were found in actual use such that of the largest 9 and of the smallest 16 went to the same sized basket. This is the usual measure used in retail trade. Of the other measures of the series the most used is the *zale*. But the whole of the series from basket to *lamè* with the exception of the *hkwet* are in practical use to a greater or less extent, while a 1½-basket measure is occasionally found.

17. As regards terminology, the names are often at first sight to the person not acquainted with Burmese obscured by the prefixing of the particle *ta* meaning 'a single' thus *ta-pyi* which is corrupted into *tubby*. Also the word *taung* meaning basket in the sense of receptacle, is often added, thus we find *tin-taung* to denote the basket.

18. There do not appear to have been any particular efforts made to popularize the standard 9-gallon basket, the only one mentioned is in Amherst where it is said that it has been "standardized" 15 or 20 years ago, but not to much purpose. The *pyi* has received more attention and is

tested and stamped in some municipalities, *e.g.*, Moulmein, Myingyan, Pegu and Rangoon.

19. Among other measures may be mentioned the Akyab basket of 12 seers and the Kyaukpyu one of about 5 gallons.
Other measures.
 At Victoria Point in Mergui the kerosene oil tin (4 gallons) has become a recognized measure under the name of *catan*.

20. *Measures of Capacity (liquid).*—There are practically no true measures of liquid capacity. The only instances of a liquid being sold otherwise than by weight are kerosene oil (by the bottle) and toddy (by the *myu-o*), details regarding which are given in the statement. A series of measures, which, however, are really little more than weights, is reported as used in Akyab, but mainly by Indians.

All liquids (save kerosene and toddy) are sold in Burma by weight, vessels made to hold a definite weight being used for convenience, it being always open to the purchaser to have the amount checked by actual weighing; or he is pacified by "having a little extra added." These measures are named according to their content; thus we have the *hsa-beittha-win-de-o*, meaning the '10-viss-capacity-pot', contracted to *se-win-o* or '10-capacity-pot'. Similarly we have the *peiktha-win* or 'viss-capacity' the *hna, thon* and *nga peiktha-win* or the 'two three or five viss capacity', and the *nga-se-tha*, literally 'fifty piece', meaning fifty tikals or half a viss, and the *aseitha* for the quarter viss and so on. Myingyan complains of false measures. Pakokhu reports the names *hmok* and *chin-o* as general terms for measures of 1 to 100 tikals and 1 to 5 visses respectively. Toungoo mentions a measure the *bon, tabon* or *hna bon* as containing about 10 visses of oil, but adds that it is not a measure in reality.

British imperial liquid measures are used to a small extent in a few of the larger places and for special articles, *e.g.*, for linseed oil, turpentine and varnish, and also to some extent for milk in Rangoon.

21. *Measures of cubic content.*—The Public Works Department uses British cubic measure, and the timber trade a ton of 50 cubic feet for timber, the Forest Department using also special tons of 120 and 216. (the cubic *lan* or fathom) cubic foot for firewood. The 50 cubic feet ton is almost universally used, even in exporting timber to metric countries. The usual measure for earthwork is *sadram* or *kyin* of 100 cubic feet.

The only indigenous method of measuring cubic capacity is that which gives the result in *athas*. In brief it is a rule of thumb measure which gives the content of logs approximately 12 cubits long which do not taper appreciably by measuring the half-girth at a distance of 3 cubits from the thick end, in a scale bearing a direct ratio to their value. The *atha* is more or less the content of a log of this length the half-girth of which is 8 sok. The sok is one-fourth of the cubit, which is usually the Mandalay cubit of 19½ inches. There is a method also for correcting for longer or shorter logs.

22. *Inspection of weights and measures.*—A certain amount of supervision is exercised over weights and measures in some of the places visited. Akyab, Bhamo, Henzada and Sagaing, however, report no action of any kind. In Moulmein, the use of prescribed weights is required, and a system of checking and stamping of viss and tikal weights has recently been introduced, though stamping is not insisted on. In Bassein, the viss and tikal weights, the yard and *pyi* are tested by comparison with standards at a charge of half an anna each, but the use of stamped or tested weights is not insisted on. In Magwe and Myingyan, the use of prescribed weights is required, and standards are kept. The bazaar gongs do some testing, and prosecutions follow serious shortages. The same is done in Taungdwingyi. In Myingyan, some

stamping is said to be done by the Municipal staff but there is no insistence on stamping. In Mandalay, checking only is done in the Zegyo bazaar. There is no stamping and nothing is done elsewhere. In Pegu, the use of prescribed weights is required, and weights and measures are checked and stamped on application. Rangoon has a more complete set of by-laws and supervision is more complete

ASSAM.

Measures of weight.—In Assam, trade in all ordinary commodities is generally done in the seer of 80 tolas. It is divided into 16 chataks and 40 seers make one maund. A chatak is also divided in some places into 4 kachas. In some districts, other tables of weights based upon different seers are also in use. For instance, in Cachar, a seer of 82 tolas is sometimes used for trade in ordinary commodities, and potatoes and onions are said to be purchased by traders by this seer and sold by the seer of 80 tolas. In Goalpara, a seer of 60 tolas is used in some parts of the district in all trade in ordinary commodities. This is known as the kachha seer. In Kamrup district, a seer of 84 tolas is used by marwaris and petty traders in purchasing jute, lac, pulses and mustard. In Sylhet, various seers are in use of the following weights :—

76, 80, 82, 82½, 86, 90 to 105, 100, 110, 120 tolas ; a seer of 82 ½ tolas appears to be widely used in wholesale trade in certain articles, the same articles being sold retail by the seer of 80 tolas, the other seers are used for particular commodities ; for instance, the seer of 90 to 105 tolas is used for purchasing ghi in the interior of the district. In Habiganj subdivision a panseri of 5 seers and a botha of 3 maunds are also in use. In Cachar district, special maunds are reported of 80 lbs in tea gardens, 90 lbs. for lime and 102 lbs. for limestone. In Sylhet, there are special maunds of 90, 92, 102 and 112 lbs. for unslaked lime, laterite stones, limestone at chattah and limestone at the quarries, respectively. Avoirdupois weights are reported as used by European firms and for certain commodities in Cachar district, and for corrugated iron, machinery and iron building materials, tea, preserved butter, imported liquors in Sylhet, as well as in Railway and steamer offices and tea-gardens in the latter district. English apothecaries' weights appear to be used for English medicines, drugs, etc, throughout the province. Indian medicines are sold by a seer of 64 tolas in Cachar and Sylhet districts. In Sylhet kabirajis also use seers of 60 tolas and 102 tolas. In Sibsagar district Kabirajis use the following table :—

4 dhans	...	...	...	=1 ratti
10 rattis	...	...	...	=1 masha
8 mashas	...	...	...	=1 tola.

The kabirajis' weights in other districts have not been reported. The tola of 180 grains appears to be used throughout the province for weighing gold, silver and jewellery, and also for opium and ganja. The tola is generally divided for purposes of gold, silver and jewellery into 16 annas and the anna into 6 rattis. In Darrang and Kamrup, 4 annas make one masha. In Goalpara and Sylhet, 4 dhans make one ratti. In part of Sibsagar district, 5 new or 6 old rattis make one anna and 4 annas make one masha, 4 mashas make one tola or bhari. In other portions of the district, 8 rattis=1 masha, and 12 mashas =1 bhari.

2. *Measures of length.*—The ordinary table of measures of length in use in Assam except in the hills appears to be :—

3 angulis	...	...	...	=1 girah ;
4 girahs	...	...	...	=1 bighat ;
2 bighats	...	...	...	=1 hath, and
2 haths	...	...	...	=1 gaj ;

the *gaj* being generally 36 inches. These measures are used for cloth, timber, etc. In Cachar, a special yard of 48 inches divided into 16 *girahs* is used by tailors. In Sylhet a *hath* of 15 inches is reported to be used for cloth and a *hath* of 16 inches for Jarul wood, etc. English linear measures are reported as in use for general purposes in several districts. In Darrang, a *kros* is 2 miles and *jojan* is 4 *kroses*. Special measures are used for wood and logs in certain districts, e.g., in Goalpara a *dhon* of 4 or 5 cubits, a *ghuni* of 7 or 8 cubits, a *gori* of 11 cubits, a *dhakal* of 12 cubits and a *dasti* of 14 cubits; in Sylhet, a *ber* of 18 inches in the Sadar subdivision and the following table in the Habiganj subdivision :—

16 chataks ...	...	...	...	=1 mut ;
12 rekhs ...	...	...	...	=1 mut ;
2 muts ...	...	...	...	=1 cubit ,

the cubit being about 17½ inches. Various measures are reported as in use for surveying land. In Cachar, a *nal*, which is not defined, is used. In Kamrup, a *tar* or *nal* of 8 cubits or 4 yards; in Sibsagar, the *bighat*, the cubit, and the *bes*, *tar* or *nal* of 8 cubits; and in Sylhet, a *kahon*=2 *nals*, the *kahon* varying from 6 to 8 cubits in different parts of the district; the *kahon* of 6 cubits (18 inches) is said to be used in tea-gardens while the ordinary *nal* is six cubits of 21½ inches each. In the Garo Hills, the cubit and yard and English linear measures are used for all purposes. In the Khasi and Jaintia Hills—

8 girahs ...	...	...	...	=1 pruh ;
2 pruh ...	...	...	...	=1 kot ;
3 khups ...	...	...	...	=1 ida ;

the *pruh* being 18 inches and the *ida* 9 inches. These are used for cloth, timber, etc. For measuring land, the *dung* or rod of about 4 yards is used for wet fields. In the Lushai Hills the *tong* or cubit and *lam* (3½ cubits) are used for general purposes; for distance, a *ting* of about ½ of a mile is used while the height of animal is measured by the *shum* or fist, 5 or 6 being generally equal to a cubit.

3. Measures of area.—The principal measures of area throughout the

province is the *bigha* or 1,600 square yards. This is usually combined with the following table : 20 lessas=1 *katha*, 5 *kathas*=1 *bigha*, except in Cachar and Sylhet where 4 *karas*=1 *ganda*; 20 *gandas*=1 *pan*; and 16 *chataks*=1 *katha*; 20 *kathas*=1 *bigha*. These measures are used in Government, Survey or Settlement records except the *kara* and *ganda*. English square measures are used in tea gardens in Cachar and also in Kamrup, Khasi and Jaintia Hills and Sylhet. In Cachar and Sylhet, the following table is also used :— 4 *karas*=1 *ganda*; 20 *gandas*=1 *pan*; 4 *pans*=1 *rak*; 4 *raks*=1 *jaishtha*; 7 *jaishthas*=1 *pao*; 4 *paos*=1 *keyar*; 12 *keyars*=1 *hal*.

In Cachar, 20 *tils*=1 *kan*, 4 *kans*=1 *kara*; and in Sylhet, 3 *krantis*=1 *kara*; 3 *keyars*=1 *chok*. The *rekh* is a square *nal*. In Cachar the *nal* is 7½ *haths* of 18 inches. In Sylhet, it is supposed to be 7 such *rekhs*, but it varies from 6 to 8 cubits, a cubit varying also from 18 to 22 inches. In sub-letting land on rent in Cachar, the *keyar* is taken to be 1½ of the *keyars* as just defined. In tea-gardens in Cachar, land is measured by the square *nal*, a *nal* being 4 yards. In Kasi and Jaintia Hills a *mong* of 500 square yards is used in certain upland tracts in calculating the hire of labourers for ploughing, etc. No measures of area are used in the Lushai Hills and no information is available regarding the measures of area in Naga Hills.

4. Measures of capacity (dry).—Trade in rice, paddy, pulses, linseed,

etc., is usually carried on by measures of capacity. These are generally baskets made of cane or bamboo. They are used heaped but the diameter of the same kind of measure is not constant. The measures vary from district to district

in name and also in capacity. The katti or katha holds $2\frac{1}{2}$ seers (80 tolas each) weight of rice in Cachar; $\frac{1}{3}$ a seer of paddy in Darrang; a $\frac{1}{4}$ seer of rice in Kamrup; about a lb. of rice in Nowgong; and $2\frac{1}{2}$ seers of rice in Sibsagar. In Darrang, the done holds 2 seers of 80 tolas each weight of paddy, in Garo Hills, 440 tolas of water; in Goalpara 400 tolas of rice; in Kamrup $3\frac{1}{2}$ to 8 seers of rice; in Lakhimpur 4 seers; in Nowgong about 10 lbs., in Sibsagar, 5 seers of rice. In Darrang, a dhol=10 dones and holds 20 seers weight of paddy. In Garo Hills in retail trade in rice, pulses, wheat, etc., 40 tolas make a maund, but in retail trade in paddy, 80 tolas make a maund. The former tola holds 76 tolas of water and the latter 420 tolas of water. In Goalpara 40 tolas make a maund in trade in paddy, pulses, til and linseed and 24 tolas make a maund in trade in mustard-seed. In Sibsagar the following table is used:— 3 mutts=1 katha; 2 kathas=1 seer; 5 seers=1 done, 3 dones=1 pura. In Sylhet, 4 seers=1 pura; 4 puras=1 pali; 8 palis=1 katha; and in other parts of the district, 4 palis=1 bhota or bhar and 16 bhars=1 paila. In another portion of Sylhet district, 4 seers=1 pura, 4 puras=1 katha and 20 kathas=1 bish. In Kamrup, Goalpara, a dang containing 5 seers of cotton is used in certain places for trade in cotton. In Khasi and Jaintia Hills, the following measures are used:—ukhri, (originally made so as to contain a man's head) pyrha (said to hold 5 seers of water), and ushang (holding 50 seers of water), the latter being used for potatoes only. In Lushai Hills a dorun or am, holding about 20 to 30 seers of paddy, is used for rice and paddy trade

5. *Measures of capacity (liquid)*—Retail trade in milk, oils, curds, ghi, etc., appears to be really carried on by weight in Assam, but for purposes of convenience vessels are used which hold specified weights of the commodity sold.

These weights are usually based upon a seer of 80 tolas, the vessels consisting of pieces of bamboo called chungas or earthenware pots or tins. These measures are said to be used for kerosene oil also in Goalpara, Kamrup, Nowgong and Sylhet and Lushai Hills districts. In Sylhet, chungas holding 30 tolas of dahi (curds) and 45 tolas of milk are used in Habiganj. Lotas holding 40 or 45 tolas of milk are used in the same subdivision, milk being sold in that subdivision by the seer of 60 tolas. In other places in Sylhet district, ghi is sold by the seer of 96 tolas, in other places 82 tolas and in others again of 90 tolas. The English apothecaries' fluid measures are used for medicines in the various parts of the province.

6. *Measures of cubic content*.—English cubic measures are generally used in Assam when measures of cubic contents are required. Sometimes the measures are given special names for special commodities, e.g., for pruh of about $2\frac{1}{2}$ cubic yards for firewood; a ghup of about $15\frac{1}{2}$ cubic yards for cut stones; a khum (a bundle) for thatching grass and reeds and a khop (a conical basket) for cow-dung, etc., in Khasi and Jaintia Hills. A thak of 180 cubic feet for firewood in Lakhimpur and a fera for lime and surki and a koobas in Sylhet.

NORTH-WEST FRONTIER PROVINCE.

Measures of weight.—The use of the 80-tola seer, frequently known as the British seer, is practically confined to the Hazara district, the railway and the various Cantonments. In Hazara it is used to a considerable extent for ordinary purposes. The ordinary seer of the province is one of from 100 to 105 tolas, the seer in Peshawar being apparently slightly larger than that in the trans-Indus districts. This seer is subdivided into 16 chataks (sometimes known as sharak) as usual, but the chatak is divided into 4 sirsahis, and not as a rule into 5 tolas, though the tola is known and as a rule deemed equal to the rupee in weight, but for gold a larger tola is as usual used. The original Peshawari seer appears to have been of 102 Doadzashahi or Nanakshahi rupees, the two coins were apparently of equal weight and are reckoned as equal to 12 mashas, while the ordinary rupee of 180 grains is regarded as $11\frac{1}{2}$ mashas.

Whatever the origin, however, the equivalent of the seers now in use in Government rupee is well-known.

The weights in actual use are in the larger towns (Peshawar and Dera Ismail Khan) usually locally made of iron, being square, octagonal or polyhedral, and usually bear nothing to indicate what they purport to be. Better weights are found with some goldsmiths. The usual sizes include 5, 4, $2\frac{1}{2}$, 2 and 1 seer, 8, 4, 2, 1 and $\frac{1}{2}$ chataks and the sarsai, all based on weights of 9, 6, 4, 3, $1\frac{1}{2}$ mashas and of 10, 5, 2, 1, $\frac{1}{2}$ and $\frac{1}{4}$ tolas; many of these are made of pieces of china or buttons rubbed down to the right size. For weighing bulks and cheap articles such as fireworks, palm leaves, etc., stone weights are often used. The Kabul seer is said to be about 157 tolas.

2. *Measures of length.*—The most widely used indigenous measure appears to be the Peshawari gaz of 38 to 38 $\frac{1}{2}$ inches. This is still common throughout the province except in Dera Ismail Khan, though it is being replaced gradually by the British yard, which in Peshawar is reckoned as equal to 15 girahs, *i. e.*, $\frac{1}{16}$ of the Peshawari yard. In Hazara the British yard has come into use to a larger extent than elsewhere, and it is fairly well-known in Bannu and Dera Ismail Khan. Hazara and Peshawar also report a smaller yard of about 34 inches known as the Mir'ari gaz, and used for carpentry and building. This is probably the Imarati gaz of elsewhere.

The *morni* or crooked hath (described among the measures of length of the Punjab) is reported from Dera Ismail Khan. For purposes of land measurement a karam of 66 inches corresponding to the jarib (chain) of 55 feet is almost universally used.

3. *Measures of area.*—The ghumaon equal to one acre, and subdivided into merlas, kanals and sirsais as in the Punjab is the system of land measure used throughout the province. One or two local measures dependent on the quantity of seed sown are reported from Dera Ismail Khan and Peshawar, but the Government system seems to have displaced all such to a great extent.

4. *Measures of capacity (dry).*—These are widely used throughout the province in all rural areas except the Peshawar district where their use is confined to the Swabi tahsil. In these areas they are used in practically all village transactions concerning grain though a preference for weights is shown in the larger towns and by Afghan traders in Dera Ismail Khan district. The units are practically always either the topa or the odhi or ozha, which are apparently much the same being used in different parts. The topa is found in Dera Ismail Khan and part of Bannu, its limits being from $3\frac{1}{2}$ to 15 seers of grain, usually wheat. The odhi or ozha is found elsewhere and varies between 3 and 16 seers. In Kohat it is known also by some tribes as the Kashra or Kasa, though it is alleged by others that these are different measures. The most usual limits of the contents of both measures seem to be between 4 and 6 seers of the prevalent grain, wheat, except in Hazara where it is maize. These measures are usually made of wood, circular round bottomed and with bulging sides. They are invariably used heaped (*makhruts* or *gandum*).

5. *Measures of capacity (liquid).*—The only district to report any liquid measures is Dera Ismail Khan where one of the dry measures (the *paropi* and its fourth part or *pan*) is used for measuring milk. Elsewhere liquids are sold by weight, measures known as palli in Peshawar constructed to contain certain definite weights (*e.g.*, in Peshawar 1, $\frac{1}{2}$, $\frac{1}{4}$ or $\frac{1}{8}$ seer) of milk being used. For country liquor and European liquid medicines British Imperial and Apothecaries' measures are respectively used. Kerosene oil is, as usual, sold in small quantities by the reputed quart and pint bottle.

6. *Measures of cubic content.*—None have been reported save the British measures which are used by the Public and Military Works Departments.

7. Testing and correcting of weights and of measures of length and liquid capacity (for milk only) is done in Dera Ismail Khan under the executive orders of the Deputy Commissioner. The actual work is carried out by a blacksmith under the supervision of the Tahsildar; the fee usually charged is 2 annas for a set consisting generally of 1, 2, 4 and 8 chataks and 1, 2 and 5 seers; the British yard is also stamped. The district authorities at Peshawar considered but dropped the question of testing and stamping weights.

AJMER-MERWARA.

Weights and measures in force.—The weights and measures of this district are substantially similar to those of the United Provinces. The usual unit of weight is the 80-tola seer, and of length the British yard. The long hath of 21 inches to 24 inches is used occasionally but only in rural areas. Areas are measured by the bigha of 1,936 square yards (subdivided as in the United Provinces) which is the square of the jarib (chain) of 44 yards. Measures of capacity are little used only surviving in a few rural areas. The chief measure is the *manu* holding about 2½ seers of grain. Of measures of liquid capacity and cubic content there are none indigenous. The remarks regarding these measures generally applying to the United Provinces (Chapter IV, U. P. 12 and 13) apply here

2. *Actual weights used*—The weights in actual use in the towns and larger villages are usually of iron, round for weights below 5 seers, and square in the case of larger weights; they are made locally. The poorer classes frequently use stone weights, especially for cheap and bulky articles, such as grass or wool.

3. *Stamping.*—Testing, correcting and stamping of weights is carried out under the executive orders of the Deputy Commissioner. A blacksmith is appointed who travels over the district under the aegis of the local authorities, testing, correcting and stamping weights at a charge which averages one anna per seer. This is done at varying intervals, about five years in Ajmer and annually in Beawar.

BALUCHISTAN.

Measures of weight.—The Railway weights are used throughout the province. A weight of 10 seers, called *dhadi*, is also used in the Bolan Pass and Sibi districts. In Fort Sandeman Bazaar (Zhob district) 2½ lbs. are reckoned as one seer.

The variations in the maund are comparatively very few in this province. In Quetta town and in some villages in the neighbourhood, a maund of 100 lbs. is used for the purchase of commodities like coal, firewood, fodder, etc., by and for the Commissariat Department. A Kandahari *man* or maund of 45 Railway seers is used for ghi, oil, wool, dry fruit, etc., in the Chaman, Pishin and Killa Abdula Bazaars. In Quetta town which is less unsophisticated and where the population is more mixed than in the rest of the province, there are special maunds for various commodities, such as a maund of 45 railway seers for dry fruit.

British avoirdupois weights are generally used by the Commissariat Department for buying food stuffs, etc. Apothecaries' weights are used in all hospitals, dispensaries and by chemists.

For weighing gold and silver and for Indian drugs, the standard tola of 180 grains is used. Weights smaller than the tola for these articles are—

8 rice or mung grains	...	...	...	= 1 ratti.
8 rattis	...	...	...	= 1 másha.
12 máshas	...	...	...	= 1 tola.

It will thus be seen that the system of weights in the whole province is remarkably simple. Another noteworthy fact is the celerity with which a simple system like that of the Railway weights has been established in Quetta town. This system was introduced by executive order in 1891, before which period a variety of weights was in use, the principal one being a seer of 90 tolas. A primitive kind of steel yard is still used in the interior of the district. A man's load is called *bharota* and a bullock load *lad* or *gonda* in some places. In the Quetta-Pishin district a camel load is called a *langar*.

2 *Measures of length*.—The British yard, divided into 16 girahs, is used throughout the province. The hath or forearm measure, varying from 18" to 20½", is also used. In the rural areas of Quetta-Pishin, Chagai and Zhob districts, the Kandahari gaz of 40½" to 42" is also used. This gaz is divided into two haths and a hath equals two *twists*. The Kandahari gaz is generally used in dealing with tribesmen, who prefer using their forearm as a measure, *i.e.*, from the elbow to the tip of the middle finger and back to the second knuckle. These measurements are also used for measuring *karez* which is an underground tunnel with shafts at regular intervals, for irrigation purposes. A pace measure, which is called *danga* and considered equal to 40½", is also used for measuring *karez*, and land under *karez* irrigation.

In Quetta town merchants from Meshed and Siestan use the Meshed gaz which is shorter than the Kandahari gaz by one-twentieth.

3. *Measures of area*.—The acre is used by the Settlement Department throughout the province and is divided in the Bolan Pass and Chagai and in a part of the Sibi districts into 2 *jaribs* or 40 *gunthas*.

Irrigated land is measured by the amount of water supplied thereto, and the quantity of water is measured by the flow for a number of hours. Thus, the term *shabanaros* means an area requiring flow of water for 24 hours.

In the Loralai district the area of unirrigated land is estimated by the time in which it can be ploughed. Thus, a *jora* means an area that can be ploughed in 12 hours, *yavgi* means an area under one plough. In and about Quetta town British measures are used. Area under one plough is called *jora* or *kolba*. In the Zhob district, *yavgi* represents an area that can be ploughed by a pair of bullocks in one day or that has a seed capacity of 10 or 12 seers of wheat.

4. *Measures of capacity (dry)*.—The simplicity of the system of weights does not extend to measures of capacity for dry articles. These vary from district to district, and in different parts of the same district, and the greatest diversity obtains in the Loralai district. In the Quetta-Pishin and Zhob districts, the most common measures are—

2 pinkis	...	...	...	= 1 manga
2 mangas	...	...	..	= 1 topa or chothra.

The measures above the *topa* in the Bolan Pass and Chagai districts are 1½ *topas* = 1 *yakhman* and 2 *yakhmans* = 1 *kasa*. The measure most generally used in the province is the *kasa* the capacity of which varies from 3 to 7 seers of wheat. All measures are used heaped. *Lap* represents a fistful of grain in a part of the Loralai district, and a handful in the Zhob district, a handful in Loralai being called a *buk* or *mangul*.

Grain is sold by measure throughout the province except in the Quetta-Pishin district and in Fort Sandeman Bazaar and rural shops in the Zhob district.

5. *Measures of capacity (liquid).*—In the Quetta-Pishin, Chagai and Zhob districts the measures generally used are—

Measures of capacity (liquid).
 2 kurwais, kuros or charyaks ... = 1 nim-wuzhai or yakhmani.
 2 nim-wuzhais ... = 1 kasa or man.

In the Bolan Pass and Sibi districts the principal measures are—

2 salorams ... = 1 manga.
 2 mangas ... = 1 path or chothra.
 4 paths ... = 1 kasa

The *kasa* is made to hold 3 to 5½ seers of wheat. In Quetta town and Fort Sandeman Bazaar (Zhob district), a seer to hold 80 tolas of milk and 80 tolas of water, respectively, is used. In the Zhob district, any vessel is turned into a *kasa* for milk, the space occupied by a *kasa*-ful of wheat by the dry measure being marked.

6. *Measures of cubic content.*—British measures are used for measuring timber, etc., in Quetta-Pishin and Chagai districts and in Fort Sandeman Bazaar. There is evidently not much use for these measures in the rest of the country.

7. No weights and measures are stamped. The Excise Department has prescribed measures for liquor shops. Weights and measures are inspected by the Police and local Magistrates and in the markets where the Railway weights have been prescribed by executive orders the use of unauthorized weights is strictly prohibited.

DELHI.

Measures of weight.—The weights and measures of Delhi are quite similar to those in use in the neighbouring portions of the United Provinces and the Punjab. The basis of the weights in use is the 80-tola seer. Jewellers' weights as might be expected are elaborate and various. The gold tola is usually 181.9 grains or the weight of one rupee plus one ratti. A special tola of one rupee plus two rattis is used for gold and silver lace, while for precious stones a separate table based on a ratti of 2½ grains of 1½ times the ordinary ratti is used. Two old tables of medicine weights have also been reported.

2. *Other measures.*—For length the British yard is the usual basis, though the Imarati (katai or milmar) gaz of 32" to 33" is used. Areas are measured by the usual 3,025 square yards bigha. Dry measures of capacity have almost disappeared but are still used to some extent in canal areas and there are no indigenous measures of liquid capacity or cubical content, the British measures being used where necessary in the way usual in the United Provinces and the Punjab. Liquids are really sold by weight, measures being made for convenience sake to hold certain definite weights of the article concerned. If a customer has any doubt of the correctness of the measure it is the recognized custom to check this by weighing.

3. There is no system of testing and checking weights in force though the Municipality have had under consideration the introduction of by-laws on this subject. Some witnesses estimate that about 5 per cent of the weights actually in use are seriously inaccurate.

COORG.

Measures of weight.—The principal table of weights in Coorg for ordinary commodities is 40 seers=1 maund. The Commissioner reports that the seer is 27½

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tolas and the maund is $27\frac{1}{2}$ lbs., the lb. being taken as equivalent to 40 rupees. Merchants of Mercara and the First Assistant Commissioner report the use of a maund of 28 lbs., *i.e.*, 1,088 $\frac{2}{3}$ tolas, the maund of 40 seers of $27\frac{1}{2}$ tolas being 1,110 tolas. In retail trade in metals such as gold, silver, copper, brass, etc., the seer is 24 tolas and in the sale of mutton it is 84 tolas. The First Assistant Commissioner reports that a new weight of $1\frac{1}{2}$ maunds regarded as equal to 50 seers has been recently introduced for use in connection with coffee, in order to agree with the weights in Kottayam taluq of the Malabar district in the Madras Presidency. Commodities are sold by the pound or rathal when customers desire it. Jewellers use the following table throughout the province :—

6 grains = 1 fanam; 9 fanams = 1 varaha; $3\frac{1}{2}$ varahas = 1 tola; 80 varahas = 1 seer. Virajpet goldsmiths use the following table :
4 ganjis = 1 hana; 9 hanas = 1 varaha; $3\frac{1}{2}$ varahas = 1 tola.

2. *Measures of length*—English measures appear to be used in Coorg for measuring cloth, distance, etc., but the foot is called adi, the yard, gaj; the half yard, mola; and 2 yards = 1 maru; 3 miles = 1 haradari; 4 haradaris = 1 gavuda. A kole of 28 inches is used for measuring timber when dealing with Malayalis.

3. *Measures of area*.—In Coorg, the area of land is expressed in acres and cents, the cent being $\frac{1}{100}$ of an acre. Formerly, the area which yielded 80 seers of paddy was called a *bhatti* but this measure is now obsolete, 100 *bhattis* of land being regarded as equivalent to 3 acres.

4. *Measures of capacity (dry)*—Grains are sold by measure in Coorg. The table of measures of capacity is—16 chataks = 1 seer; 2 seers = 1 hani; 80 seers = 1 batti; 100 seers = 1 palla; 120 or 160 seers = 1 kandaga. There are two definitions of the seer; one that it holds 80 tolas of second sort rice heaped and the other that it contains 80 tolas of nine different kinds of grains mixed together in equal proportions; but the Commissioner reports that both these definitions are misleading and that on experiment the seer was found to hold $83\frac{1}{2}$ tolas of second sort rice. In measuring paddy and cherry coffee, a Malabar measure called para of 8 to 12 seers is used.

5. *Measures of capacity (liquid)*.—Oils, ghi, toddy, honey and milk are dealt with in Coorg by the same seer that is used as a measure of capacity for grains, *i.e.*, a seer which nominally holds 80 tolas of second sort rice when heaped. Arrack is sold by English measure and kerosene oil by gallon and bottle.

6. *Measures of cubic content*.—A cubic foot is used as a measure of cubical contents in Coorg.

BANGALORE (CIVIL AND MILITARY STATION).

Measures of weight.—In Bangalore, the local seer weight = 24 tolas. It is divided into 16 chataks and also into 8 palams; 5 seers = 1 viss; 2 visses = 1 dadiyam; 6 visses = 1 maund; 8 maunds = 1 pothi; 20 maunds = 1 candy.

These weights are used in retail sale of all commodities except meat, iron, flour, sugar, bread, etc., which are sold by the avoirdupois weight, and rice, grains, pulses, oil-seeds, etc., which are sold by measures. The Committee found that grocers in the Bangalore Bazaar kept both lb. and local seer weights and used either as desired by a customer. In wholesale trade in certain articles, the maund is $42\frac{1}{2}$ seers. There are also other special maunds varying from 45 to 50 seers of 24 tolas each and others varying from 25 to 35 lbs. avoirdupois. Gold is sold by the varaha (which is regarded as $\frac{9}{17}$ tola) and silver by the tola.

2. *Measures of length.*—English linear measures are used for all purposes in Bangalore.

Measures of length.

3. *Measures of area.*—The area of land is expressed in terms of acres and guntas, the gunta being 121 square yards.

Measures of area.

4. *Measures of capacity (dry).*—The seer measure in Bangalore holds 84 tolas of cleaned ragi when fully heaped. It has a constant diameter. It is divided into 16 chataks 8 seers = 1 marakkal; 20 marakkals = 1 putti; 4 puttis = 1 cart-load.

Measures of capacity (dry).

This is the usual table of measures for trade in rice, grains, pulses and oil-seeds. One witness states, however, that in wholesale trade, it is customary to allow 4 marakkals extra for each cart-load. Other measures are mentioned by witnesses such as a marakkal and a kolaga of 10 seers each, a palla of 10 kolagas, a candy of 2 pallas and a balla of 4 seers and various cart-loads but it is not clear whether these measures are actually used in Bangalore or only in the vicinity.

5. *Measures of capacity (liquid).*—Oils are measured by a viss of 5 seers, eleven seers of oil being regarded as one maund. Country liquor and kerosene oil are sold by English measures. The latter is also sold by the tin or bottle.

Measures of capacity (liquid).

6. *Measures of cubic content.*—Cubic foot is used for certain purposes. For lime, a measure called para is used; it is very nearly 50 Bangalore measures, but it is based upon inches.

Measures of cubic content.

NATIVE STATES.

Our instructions did not require us to consider the question of weights and measures in connection with the Native States; but as in the course of our inquiries we received certain information in this connection, and were specially requested by the Baroda Darbar to discuss it with their representatives it seems convenient to place on record the information received.

Action taken by Baroda

A considerable number of witnesses from districts bordering on these States urged the great advantage to be derived from the adoption by the States of whatever system was adopted in British India. (See Chap. V, U P 19; M. 39; Bo. 2; N. W F P 14; Aj 12; and Ba. 15.) We were told action has already been taken in several States towards enforcing a uniform system. Thus in Baroda an Act to this effect has been passed and rules have been promulgated, and given effect to. The table of weights there is based on the 180-grain tola, but the 40-tola Gujarat seer (sher) has been adopted so that the seer and maund in Baroda are precisely half those in use on the railways. For length a gaj of 24" has been prescribed, and for liquid capacity a measure containing one sher of water. The Darbar has specially urged the difficulty of the varying weights in use in the adjoining and interlacing parts of the Surat district.

2. In Gwalior, we understand there are regulations for enforcing the use of the 80-tola seer, but are not able to give full details. In Indore also, we believe the use of this seer is required to a greater or less extent. In Samphar, a seer of 82 tolas is used, and weights are said to be annually checked at the capital of the State. Bhopal uses a 96-tola seer and weights are reported to be supplied through the Customs Department. We have reason to believe that action is under contemplation by some of the other Central India States.

Central India.

3. In Cochin, we were told that there are very stringent rules for the use of the 42½ tola 'pound', and that "the Cochin people would be glad to adopt whatever was ordered for British India".

Cochin.

PROPOSALS FOR ALTERATIONS IN COINAGE.

In connection with the proposal to alter the weight of the coinage with a view to facilitate the introduction of the British system we consulted the Mint Masters of Bombay and Calcutta to ascertain how the proposal might be viewed from their point of view, and though we have come to the conclusion that any such alteration is inadvisable we think it useful to place on record the result of these inquiries.

The proposals were six in number :—

- (i) To reduce the weight of the rupee to 175 grains or $\frac{1}{16}$ lb without altering its composition.
- (ii) To reduce the weight of the rupee to 175 grains leaving the amount of silver unchanged.
- (iii) To increase the weight of the rupee to $194\frac{1}{2}$ grains or $\frac{1}{8}$ lb. by addition of copper.
- (iv) To increase the weight of the rupee to $218\frac{1}{2}$ grains or $\frac{1}{3}$ lb. by addition of copper.
- (v) To reduce the weight of the one-anna piece from 60 to $54\frac{1}{2}$ grains or $\frac{1}{3}$ oz.
- (vi) To raise the weight of the piece from 75 to $109\frac{3}{8}$ grains or $\frac{1}{4}$ oz.

2 (i) From the minting point of view no objection was urged against reducing the weight of the rupee from 180 to 175 grains. There would be a slight saving in cost.

3. (ii) To reduce the weight of the rupee to 175 grains by reducing only the amount of alloy contained therein from 15 to 10 grains, leaving the content of silver as at present 165 grains. As regards this possibility we made considerable inquiries. To merely reduce the amount of copper in the rupee from 15 to 10 grains gave a coin too soft to stand wear, although the fineness (942.86) would be slightly less than that of the Dutch guelder (945). Accordingly some experiments were very kindly made by the Mint Master, Calcutta, with a view to find some other metal which might take the place of copper and produce a harder coin. Aluminium and nickel were tried but to no purpose and later in accordance with information received an alloy composed of 165 parts of silver and 5 of each of copper and zinc was employed. This was, however, found to be 47 per cent softer than the existing rupee. The only possibility, therefore, of making a rupee of hardness equal to the present coin and of the same intrinsic value would appear to be to add sufficient gold.

4. (iii) To raise the weight of the rupee to $194\frac{1}{2}$ grains by addition of more copper. To this there is no minting objection, the extra cost is estimated at Rs. 10½ per lakh together with a slight excess in the cost of carriage.

5. (iv) To raise the weight of the rupee to $218\frac{1}{2}$ grains by addition of more copper. This would reduce the fineness of the rupee to about 755, as compared with 750 the fineness of the subsidiary coinage in some countries; it is not considered that there would be any difficulty in minting. The extra cost is estimated at about 18 per cent, an increase which it is not thought likely to be counterbalanced by the increase in the wearing properties of the coin that would certainly follow on the increased hardness thereof. It is not thought that the colour of the coin would be substantially altered.

6. (v) To reduce the weight of the nickel one-anna piece from 60 to $54\frac{1}{2}$ grains. To this there is considered to be no objection; the saving in so doing would be very slight.

7. (vi) To increase the weight of the pice from 75 to $109\frac{1}{2}$ grains. From the minting point of view it is said that this would be an advantage, provided that the diameter were left unchanged, as the life of the die would be lengthened if it had a thicker piece of metal to work on. The increase in cost is estimated at about 13 per cent.

8. The Mint Masters, however, point out that the legal remedy, *i. e.*, the maximum excess or defect in weight as compared with that prescribed, of the one anna and pice are $\frac{1}{40}$ as against $\frac{1}{30}$ in the case of the rupee, and that this would render them unsuited for testing weights. Experimental weighings of new annas and pice made by the Mint Master of Bombay showed, however, that only six anna pieces in 1,00,000 varied from the prescribed weight by as much as one grain; but that in the case of pice out of 15,396 weighed a "fairly large proportion" showed an excess or defect of over 2 grains, while 27 were in excess or defect by as much as 6 grains.

CHAPTER V.—OPINIONS REGARDING A UNIFORM SYSTEM,
BEING A DIGEST OF THE EVIDENCE THEREON.

N. B.—With a view to avoiding repetition the questions have been referred to by their numbers only as given in Appendix A.

UNITED PROVINCES.

In these Provinces 10 districts, *viz.*, Agra, Aligarh (Hathras), Banda, Benares, Cawnpore, Gorakhpur, Jhansi, Kheri, Moradabad, (Chandausi) and Naini-Tal (Ramnagar) were visited by part or all of the Committee and written replies were received from Almorah, Azamgarh, Bulandshahr, Etah, Fatehpur, Garhwal, Gonda, Jalaun, Mirzapur, Partabgarh, Saharanpur, and Sitapur. In all 113 written replies were received, which, however, represented more than 222 individuals as many replies were joint; of these 47 were from officials (21 from Europeans) and 66 from non-officials; 250 persons were examined orally, all but 7 in groups of from 2 to 20. The replies of several of the officials were the results of inquiries from large groups of petty traders.

A very considerable amount of interest was taken in this province more especially in Cawnpore and Gorakhpur, and almost every district officer asked to do so had clearly given his personal attention to the Committee's inquiries.

2. There is practical unanimity in the desire for the uniform system of weights being enforced by Government.

General desire for a uniform system. The Deputy Commissioner of Garhwal opposes it for Kumaon, but this view is not supported by the witnesses from Almorah and a zamindar of Gorakhpur sees no necessity for it. Two Agra witnesses are very lukewarm and the Marwari Chamber of Commerce in Cawnpore does not favour action. The Collector of Bulandshahr suggests a uniform system to be used in all towns of 50,000 inhabitants, other areas being left to "use local standards". With these insignificant exceptions all opinions favour action.

3 As to the system to be followed, opinion is nearly though not quite as uniformly in favour of the Indian Railway weights. There are, however,

System desired. some important exceptions in favour chiefly of the metric system; chief of these is the Upper India Chamber of Commerce and a group of large traders in Cawnpore. The Chamber considers, though apparently by no means unanimously, that the metric system is both "politically and practically possible", and that it should be accompanied by a metric system of coinage based on the sovereign, a silver coin equal in weight to $\frac{1}{100}$ kilogramme and in value to £1, being struck. The metric system has some support from an Agra merchant who, however, does not think it "practical politics". A few Chandausi merchants more or less definitely recommend this system and two, somewhat doubtfully, in Gorakhpur; lastly it is supported by a few officials. The support from any persons really intimately acquainted with the mass of the people, the petty traders and the agriculturists cannot but be termed infinitesimal.

4. Somewhat the same remark applies to the advocates of the British system, which is generally proposed in

Opinion regarding British system. the form of the 2 lb. seer, combined as a rule with a reduction of the weight of the rupee to 175 grains or $\frac{1}{16}$ lb. The chief advocates are the Collectors of Banda, Benares, and Moradabad, the Secretary to the Municipal Board of Chandausi and (though in a somewhat

lukewarm manner) a pleader of Gorakhpur. A certain number express a preference for the British system over the metric *if they have got to choose between the two*, and it is as a rule considered that its introduction would be facilitated by altering the weight of the rupee to 175 grains or $\frac{1}{16}$ lb., though this idea of altering the coinage is almost invariably disliked, the dislike being always by reason of the confusion of weights likely to be caused thereby, and more often than not also on the ground that there will be suspicion of its value being diminished.

5. To sum up, the immense preponderance of opinion in this province is in favour of the introduction and enforcement by Government of the Railway weights as the one uniform system, and this opinion is almost as marked in those areas centring in Moradabad and Gorakhpur where the 80-tola seer is not the usual popular weight, as in the other parts of the province where it is so.

6. As regards measures of length opinion is practically universally in favour of the 36" being the unit, to be divided into feet and inches and also into 16 girahs each of $2\frac{1}{4}$ ". Some even of those who advocated the metric system for weights thought it advisable to retain the yard in view of its present widespread use. The only other suggestions are 32", 33" and $33\frac{1}{2}$ " yard. But these were not urged with insistence. A Cawnpore cloth merchant thought the abolition of special yards might do away with "trade secrets".

7. For area, the Committee put forward the proposal that the use of the acre subdivided into hundredths should be aimed at being introduced where not already in use, at re-survey, and entries in the land records being made as regards each field both in this measure and in that in previous use. It was proposed that once this was done it should be required that areas in deeds and suits be required to be shown in acres and hundredths of an acre whether they were or were not also at the same time shown in the old measure. This proposal was very rarely objected to, and was generally thought likely to result in the introduction of the acre. The Collector of Banda suggested a bigha of 56 yard square, and he of Mirzapur the retention of the local bigha. A few witnesses in Cawnpore and Chandausi were doubtful proposal, and it was considered doubtful if the acre could be introduced into the hill tracts in place of the local nali. Advocates of the metric system advocated metric areas as a rule.

8. Measures of capacity occur to an appreciable extent in Bundelkhand, the hill districts and Gorakhpur and neighbouring districts only. A general desire for standardization is expressed though a fear of difficulties in customary payment was urged by some it was usually accepted that the standard measure should be one that contains such an exact number of seers of water as gives a vessel of about the size of the average in use in the tract concerned. This standard would vary in the various tracts. An assimilation to some British measure is not strongly opposed but would not be preferred to the above mentioned system.

9. Of measures of liquid capacity there are none, and all that is desired is that the measures purporting to contain a specified weight of some liquid should really do so.

10. Very few opinions were expressed as regards the suggestions of confining a particular name to either a weight or a measure, such opinions as there were were about as equally numerous in favour of either course. A few have suggested abolition of measures, but as a rule this is considered inadvisable in tracts where they are used to any extent.

11. The custom of using special weights, in particular special maunds and to a less extent special seers, for special commodities is a widespread one in this province, being of particular importance in Agra and Cawnpore. The great majority of witnesses favour entire abolition of the practice. An Agra merchant objected in his written evidence but modified his objection orally: while the only serious objections were put forward by the Marwari Chamber of Commerce of Cawnpore. The reasons alleged for these variations are various, to allow for dryage, dirt, etc., is one, but the chief seems to be trade custom, the merchant making his profit by varying the weight of his maund instead of the price per maund. Variations in the maunds for indigo plant and in bighas are occasionally due to the local influence of the purchaser or the zamindar. The objection urged is that the use of a uniform maund would expose important trade-secrets, and make it easy for (say) a gñi trader to enter the grain trade or *vice versa*, which is not the case now in view of the special knowledge of trade weights required. The Chamber in oral examination somewhat reluctantly concluded that it would be possible always to express the value of the special maund in documents, etc., in terms of the standard weights. All others favoured abolition as likely to lead to increased honesty in dealing.

12. *Special weights for special trades*—Very few requests for special weights for special trades were put forward. Such as there were, were for the British apothecaries' weights in Agra "if necessary under a license"; other old druggists' weights, and jewellers' weights—usually the old tola and weights connected therewith.

13. *Means of introduction of authorized system.*—As regards means of introduction, the Committee's proposals were as a rule approved; the chief suggestions made are noted—

- (a) Municipal and District Boards should be specifically added.
- (b) The issue of sample weights is recommended also to post offices, patwaris, municipalities, Co-operative Societies, pound clerks, town clerks (*i e.*, Bakshis of Act XX Towns), and weighmen appointed by zamindars. On the other hand, a few consider their issue to headmen and elementary schools as likely to prove too expensive. As a rule, however, such issue is deemed advisable.
- (c) Copies should also be kept by patwaris and bazaar chaudharis, and at first be kept posted up on village chaupals and in bazaars. The copies sent to headmen, etc., would require periodical renewing.
- (d) Teaching of weights and measures current in foreign countries should be permitted. The Collector of Cawnpore considers that any weights and measures should be taught so long as they are as matter of fact in current use in the neighbourhood of the school concerned.
- (f) The testing and stamping of weights and regular inspection and an order requiring the use of stamped weights and measures and of none other are considered by the great majority of witnesses as absolutely essential. A few are doubtful of the necessity of stamping but these consider testing and inspection necessary. The majority are in favour of the testing and stamping being done free of charge for the first year or so; a few favour immediate imposition of fees and a few that it should always be done free. A stamping party of a mubarrir, blacksmith and peon should be appointed to travel about the district. The difficulties of rural shopkeepers were specifically considered by a group of petty traders and agriculturists from the rural portions of the

Agra district; and their opinion is as follows:—

All are strongly in favour of a system of testing and stamping weights and of its being prescribed by Government that only stamped weights shall be used. Stone weights should be prohibited. (They are emphatic as regards this). One or two urge that such an order may be a bit harsh on some of the poorer people and suggest that Government sell weights cheap to such people. But more than this is not urged, all are strongly of opinion that the same order must hold for all, both large and small shopkeepers and vendors of all kinds. Inspection should be periodic, the interval between successive inspection is variously suggested; the general opinion seems to favour annual inspection in the larger towns, and triennial in rural areas.

- (g) Almost the only opponent of this suggestion is the Deputy Commissioner of Almora who considers it not the duty of Government. Kheri refers to the hard case of petty vendors who ordinarily use stone weights, and thinks that special arrangements to let such have weights cheap are required. From Ramnagar comes the suggestion that to get rid of the present miscellaneous weights Government might take over all, whatever their condition, at $1\frac{1}{2}$ times their value as metal and replace them by new weights at slightly above cost price. From Azamgarh it is suggested that stores of stamped weights be kept at tahsils and be issued through village headmen, Co-operative Societies, etc.
- (h) Practically all who have specifically considered the proposal that Government pay for the alteration of weighing machines consider it unnecessary.
- (i) The only comment worth noting is that of the Collector of Cawnpore who points out that a very probable result of insisting on the use of unpopular weights and measures in such markets would be to ruin the markets rather than introduce the use of the weights or measures.
- (j) The only comment on the proposal to render illegal such incorporation is one of disapproval.
- (k) There are few comments, such as there are disapprove of the proposal of free import of authorized weights, etc.
- (l) The proposal to sell at cost price is almost universally disapproved as prejudicial to private enterprise. One suggests such sale for three months, and thereafter that firms be specially authorized to manufacture and sell subject to inspection. Others that manufacturers and vendors of weights and measures be required to take out licenses, such licenses to be given free of cost and freely, solely with the object of enabling Government to check the manufacture or sale of incorrect weights, etc. This received a certain amount of support. Others again thought it sufficient to require weights and measures to be tested and stamped before sale. Still other proposals are that prescribed weights and measures be sold by Government on commission like stamps, or through bazaar chaudharis. Supply by Government is also advocated by some Benares traders.
- (m) and (n) These proposals are disapproved of by the Collectors of Banda, Benares and Cawnpore; the Upper India Chamber of Commerce is doubtful about them; two witnesses from Cawnpore disapprove of (m), one of whom approves of (n). The Collectors of Etah and Kheri would only require the equivalents of unauthorized weights being expressed in terms of authorized weights.

- (o) The Collectors of Benares and Cawnpore alone object to unauthorized weights being deemed illegal after a suitable period.
- (p) Few have commented. A Cawnpore banker deems the proposal harsh and would only throw the burden of proof on the possessor; and a Cawnpore pleader would deem such possession illegal but not presume it.

A few suggested that scales also should be inspected, but that was deemed hardly practicable by others.

14. *Period required for introducing uniform system.*—Opinions vary considerably as to the period over which the introduction of a uniform system should be spread. If the system be the Railway weights the general opinion seems not unfairly expressed by a group of petty traders and agriculturists from Gorakhpur (both urban and rural) who say “we all agree that it would be a suitable procedure if all shopkeepers, etc., were ordered to get their weights tested and stamped within a year and to use nothing but stamped weights after that period, and that any one using other weights after that should have them seized when first detected and be fined if again caught with unauthorized weights”. This expression of opinion is of especial importance as coming (a) from the very class likely to be most affected by the change, and (b) from a district in which the Railway weights are not at present in general use, so that the change would be a reality.

Other opinions vary between that of a Kheri group who considered that the use of the 80-tola seer could be immediately introduced, to that of the Deputy Commissioner of Partabgarh who thinks ten years necessary.

If a foreign system were to be introduced the usual opinion is that anything from 3 to 50 years would be necessary with a preference for the longer period.

As to the periods after which the various proposals put forward in Question 20 be given effect to, there is no definite trend of opinion. Most witnesses give one period for everything. A large merchant of Cawnpore suggests that weights be replaced free for a year, the use of authorized weights be required in documents after six months, and unauthorized weights be deemed illegal after five years. Others would not make unauthorized weights illegal in documents for five years. One witness points out that a suitable date for introducing regulations would be October 1st as that is the date when new accounts are opened.

15. *Penalties.*—The general opinion favours leniency to begin with; probably a fair summary would be that for a first offence the punishment should usually be confiscation, for a second, confiscation accompanied by fine, and for a third or subsequent offence, confiscation with fine or imprisonment. The Marwari Chamber of Commerce, Cawnpore, advocates no punishment but it also advocated no action of any sort. The Collector of Banda would not go beyond confiscation. The Upper India Chamber of Commerce suggests that the English law be followed.

16. *Staff.*—With reference to the staff by which regulations regarding weights and measures should be enforced many opinions were offered. As a rule, the police were not favoured but regarded as indispensable by several. But powers should be restricted to the Sub-Inspector. The Revenue staff was almost invariably approved of, to be limited to officers of a grade not below that of a supervisor kanungo, or, in a fair number of cases Naib-tahsildar. Few, save in the hill districts, favour the patwari.

In Municipalities, the superior grades of the Municipal staff were approved, Secretaries, Inspectors of octroi and Sanitary Inspectors, or such as do not draw less than Rs. 75 per month unless the Secretary draw less in which case he should be employed. In towns the Town clerk (bakshi) is proposed. Several also approve the Excise Inspector especially after a year or two.

Of unpaid agency the chief suggestions are in favour of Members of District and Municipal Boards, Co-operative Credit Societies, Honorary Magistrates and village munsiffs, bazaar chaudharis and (almost universally as the best agency for rural areas) the village headman (*mukhia* or *pradhan*). Some fear that the headman might be inefficient, and a few that he might use his power to gratify private spite, but the great majority view him with favour. Village panchayats, or special committees in villages, lambar-dars and selected zamindars are recommended by one or two witnesses.

Several have suggested that power to seize incorrect weights and measures be given to the lower grades of officials, such as patwaris, headmen, lambar-dars, lower grade municipal officials and (rarely) constables, who would then report to some superior officer, such as the Tahsildar or Sub-divisional Magistrate.

Several also whose opinions carry weight consider it advisable to have a special establishment at any rate to start with. The most general idea appears to be to have a special Inspector of the grade of Tahsildar or Naib-tahsildar to supervise inspection work more particularly in the bigger centres, or for larger cities. Many witnesses, however, are strongly of opinion that all work in this connection in extra-municipal areas be done through the tahsil mainly apparently because as one group put it "there is confidence in the Tahsildar and his subordinates".

17. Opinions as to the probable effect of the introduction of a uniform system are curiously varied. The only undisputed opinion is that dishonest traders will suffer. Otherwise of the three classes of large or small traders and others, each is thought to be likely to benefit by some and to be troubled by others, but all are expected to be benefited in the long run. Perhaps the most general view is that the actual introduction will cause least temporary inconvenience to the large trader, more to the petty trader and most to the poorer and agricultural classes; but this is by no means universal.

18. Other points worth noting are the suggestion that authorized weights be of a special pattern; and the various estimates of the proportion of weights in actual use that are inaccurate:—'10 per cent.' in Cawnpore and '2 to 10 per cent.' or 'scarcely one really accurate' and '5 per cent. wilfully inaccurate' in Gorakhpur.

19. Several witnesses from districts bordering on Native States especially Agra and Jhansi urge the great advantage of their also joining in adopting such uniform system as may be adopted for British India. One witness from Jhansi points out that in the States of Bhopal, Gwalior, Indore and Sampthar certain action towards maintaining a uniform and accurate system of weights is already taken. Witnesses from Benares, Kheri and Moradabad also urge the necessity of consideration of this point.

BENGAL.

Replies to the Committee's written questions were received from 177 witnesses distributed over eight districts in Bengal, namely, Bakarganj, Chittagong, Dacca, Dinajpur, Midnapur, Mymensingh, Rajshahi and 24 Parganas (Calcutta). These witnesses included 22 officials, of whom 8 were Europeans, 4 non-official Europeans and 8 commercial corporations including the Bengal Chamber of Commerce. The evidence of some of the officials represents the views of a large number of traders, etc., whom they consulted. The Committee or a portion of it visited Jhalakati (Bakarganj), Chittagong, Dacca, Narain-ganj (Dacca), Dinajpur, Midnapur, Bhairab Bazaar (Mymensingh) and Calcutta (24-Parganas). Besides examining individually some of the witnesses who had sent written replies, the Committee examined 297 witnesses

orally in groups varying from 2 to 44 members. The number of groups examined in all was 19.

2. A great majority of witnesses in Bengal is in favour of a uniform system of weights and measures throughout India; but they are not so unanimous

Desire for uniform system

on this point as witnesses in other provinces. The principal reasons urged in favour of a uniform system of weights are that though the various weights and measures are understood locally, their variety is a great obstacle to trade, renders the introduction of a large number of middlemen an absolute necessity, causes much inconvenience and loss to the purchasing public, facilitates fraud and places a stranger at a great disadvantage. A uniform system would therefore facilitate trade, improve the position of the cultivators and poorer classes by putting them in closer touch with the best markets, remove confusion, minimize chances of fraud and enable a stranger and a traveller to understand without difficulty the weights and measures in force in every part of India. Some of the witnesses who would like a uniform system of weights and measures point out the difficulties which they see in its introduction and in some cases state that they do not consider it to be feasible. The reasons urged in support of this view are that at first a uniform system would cause inconvenience to persons accustomed to use local weights and measures, that the people would have difficulty in learning the use of the new weights and measures and their relation with the old weights so as to determine prices in terms of the new system, that the people would be reluctant to use a new system, that illiterate tenants and others would raise objections to the new weights and measures as a pretext for not paying creditors (zamindars, etc.), that traders would take advantage of the situation to the disadvantage of the purchasers and that wholesale traders would object to using the uniform system when purchasing from agriculturists and other producers. Other witnesses are opposed to the introduction of a uniform system of weights and measures throughout India, though two of them favour provincial standardization. Similar objections to those already indicated are urged by these witnesses, the general idea being that the ignorant peasantry and small traders would be put to considerable inconvenience and would resent any change, while the bigger merchants would object to the abolition of the allowances for wastage, dryage, etc., and that chaos and confusion would be the result. Some witnesses refer especially to the difficulty of applying the uniform system to Indian medicines, while others object to any attempt to alter the present land measures.

3 A great majority of the witnesses in Bengal are in favour of the extension of the use of the Bengal system based on the seer of 80 tolas throughout the rest

Railway weights favoured

of India. The principal reasons urged in support of it are that the system is known to everyone, that cultivators and traders are familiar with it, that merchants in all provinces are acquainted with it; that calculations in it are easy, that the tola is used everywhere, even though the seer varies; and that it is a national system. The Bengal Chamber of Commerce states "there is not any indication so far that this system is being generally adopted but seeing that it is in use on all Indian railways, it must be known to a fairly large number of people." The representatives of the Chittagong Chamber of Commerce state that the Bengal seer and maund would do very well so far as Chittagong is concerned and that in the opinion of the Chamber it is not worth the extra trouble to introduce one of the world wide systems into India.

4. A few witnesses have suggested certain miscellaneous systems. The principle involves the reduction of the tola to 175 grains so as to make the seer

Miscellaneous systems.

equal to 2 lb. avordupois. A few witnesses suggest a seer of 100 tolas and the Collector of Midnapur suggests one of 64 tolas as an alternative to the railway system.

5. A few witnesses and the Calcutta Trades Association favour the introduction of the metric system on the ground that it is the best system, most scientific,

Metric system.

most simple, most easy for calculation, most convenient and that it would commend itself to the masses when they know it, and that it is likely to be

adopted by all civilized countries. Some witnesses consider that it will be better to wait till it is adopted by Great Britain. A few witnesses orally examined in groups would prefer the metric system to the British system if the railway system is not adopted. Some witnesses have objected to the metric system on the ground that the mass of the population is too illiterate and unintelligent to grasp it and that it would cause much hardship, while another objects that the coinage must be altered and a new system of writing weights and measures in Indian vernaculars must be devised if it is introduced.

6. There is a certain number of supporters of the British system in Bengal chiefly on the ground that it would facilitate commercial intercourse between

British system.

India and other parts of the British Empire, that the people are used to it to some extent and that many educated persons, especially traders and merchants, understand it. A few more witnesses prefer it to the metric system if the railway system is not adopted. Objections are raised by some witnesses on the ground that it would take a long time for the people to become accustomed to it, that females would find difficulty in learning it, that it will cause great inconvenience to the public and is too complicated for practical purposes now. The Marwari Association, Calcutta, and some witnesses object, as the coinage will have to be altered.

7. A majority of the witnesses who have given answers to the Committee's question regarding the possible alteration of the coinage if the British system were

Alteration of coinage

introduced are opposed to such an alteration. On the other hand, the majority of those orally examined on the point are in favour of the alteration of the rupee. Both the Bengal and Chittagong Chambers of Commerce are opposed to the proposal. The latter state that a change will cause much inconvenience to bankers in weighing out large quantities of coin. They add that it is risky and inexpedient to alter the coinage and that the alteration would cause much inconvenience and meet with a storm of opposition and that women folk would not like it as they would get smaller ornaments for the same number of rupees when melted down. On the other hand, a group of witnesses state that rupees are not used to make ornaments now and it is also stated that it is unnecessary to alter the coins as British weights can be checked with sufficient accuracy by the present silver coin.

8. For ordinary linear measurements, it does not appear there would be any objection to the English linear measures in Bengal, while for the measurement of land the British system of areas is recommended as the local units vary widely and no indigenous system is preferable to the British. Some of the witnesses, however, are in favour of retaining the *higha*, *katha*, etc., and it is urged that the existing land measures are closely associated with the peculiar land-revenue system and that an alteration to the acre would cause much trouble and inconvenience.

Length and area.

9. Very few of the witnesses in Bengal have touched on measures of capacity. The Chittagong Chamber of Commerce is prepared to accept an *ari*

Measures of capacity.

(basket) of 4 gallons, if Akyab, etc., accept it. They state that difficulty may arise in standardizing the *ari* owing to the fact that rents are paid in *aris* of a certain size. Some witnesses state that the measures of capacity should be adapted to the unit of weight. One group of witnesses want different *káthas* for every commodity so as to give the same weight always.

Cubical contents.

contents.

10. No witness in Bengal has made any suggestion regarding measures of cubical

11. Special weights fall into two main classes: (1) special seers and maunds used in wholesale trade, and (2) those used for special commodities, such as

Special weights.

gold, silver, jewellery and Indian medicines. The reasons assigned for the former are that the higher weight for wholesale trade is intended to cover wastage, freight drayage and profit, while keeping the price apparently the same as in retail sales. It is stated that these weights have been in use from time immemorial. Several witnesses state that these special weights may be abolished but many others object to their abolition as it will involve a change in the methods of carrying on trade and customers will object to the retail price being higher than the wholesale price. The Narayanganj Chamber of Commerce states that it is extremely questionable whether buying and selling by any of the existing weights and measures can legally be put a stop to in any instance unless it can first be proved that these are being used dishonestly. It is specially stated that an exception should be made in the case of jute, because it is purchased in the first instance in a very wet condition. As regards the second class of special weights, a few witnesses consider that jewellers and vendors of country medicines should be allowed to retain their own weights permanently and in the case of foreign goods it is urged that they should be sold by British weights.

12. A great majority of witnesses who have answered the Committee's question on the subject of the use of weights and measures for the same commodity are of opinion that the dual system should be disallowed. A few consider it unnecessary especially in the case of liquids where measures are practically used for convenience in place of weights. But, as regards grains, etc., it is urged that the measures are inaccurate, can be easily enlarged or diminished and that the measurer can by his skill reduce or increase the amount contained in the measure. Some witnesses would go so far as to put a stop to sale by measure altogether, as measures are used so much for fraudulent purposes. On the other hand, it is stated that it will be inconvenient to the poorer and agricultural classes if measures are abolished, as they cannot afford to buy scales and weights and sometimes goods are sold on the way to market and it would be inconvenient to have to carry weights and scales instead of measures.

13. In Bengal, the same name appears to be used both for a weight and a measure generally in the case of liquids where the measure purports to hold the weight of the same name of the liquid. There is therefore little or no confusion at least for the people of the same locality and many witnesses contend that it is unnecessary to interfere with the existing practice. Many, however, would prefer that the same name should not be employed to denominate both a weight and a measure.

14. No objection is raised to the proposal that the authorized weights and measures should be adopted in all transactions by Government, railways and bodies controlled by Government.

15. The Additional Collector of Dacca considers it expensive and unnecessary to supply specimens of the authorized weights and measures to all revenue offices, police stations, village headmen and recognized elementary schools. But this suggestion is approved by other witnesses, some of whom suggest the addition that specimens should also be supplied to all village panchayats, teachers, Municipal and District Board offices, higher grade schools, railway stations, post offices and principal traders in trade centres.

16. No objection is taken to the suggestion that the tables of the authorized weights and measures should be published in the district gazettes and a copy should be kept by the village headmen. On the other hand, some witnesses suggest further measures for the publication of the tables. It is proposed that they should include conversion tables between the new and the old weights and that they should be published in local vernacular newspapers and by police officers,

chowkidars, village headmen and zamindars and by beat of drum; also that they should be posted up in post offices, in permanent places in *hats*, markets, etc., and in schools and that copies should be distributed free of cost as widely as possible.

17. All the witnesses in Bengal agree that the use of the authorized weights and measures should be taught in elementary schools but some object to the proposal that the use of other weights and measures should not be taught in recognized elementary schools. They say that education should be wide and that a knowledge of other local systems is necessary for some time.

18. The proposals that Government should verify and stamp authorized weights and measures are approved in Bengal. Some witnesses consider that the stamping should be done free of fee for periods varying from one month to ten years, while others consider that no fee should ever be charged.

19. Some witnesses consider it unnecessary for Government to replace free of cost stamped weights and measures which are no longer authorized.

20. The Additional Collector of Dacca states that the suggestion that Government should alter or make grants for the alteration of weighing machines should not be adopted as it would be expensive and involve much labour.

21. No witness in Bengal has raised any objection to the suggestion that only stamped authorized weights and measures should be used after a certain date in markets under the control of Government or any local authority; but some suggest that this provision should not be brought into force for periods varying from 90 days to three years.

22. Two witnesses consider it unnecessary and too drastic that the import, manufacture and sale of other weights and measures should be declared illegal, while one witness suggests the addition of the words "except under the authority of the Government" and another states that some provision should be made for weights required for special purposes, such as apothecaries' weights.

23. The Additional Collector of Dacca states that it is unnecessary for Government to forego the import duties on authorized weights and measures and weighing machines.

24. The proposal that Government should undertake the sale of authorized weights and measures is approved in Bengal except by the Additional Collector of Dacca who considers this provision unnecessary unless a new system of weights is adopted, in which case it would be preferable for the Government to sell at a reasonable profit. Generally, witnesses consider that the Government should not sell free of cost except perhaps for a short time when the system is first introduced.

25. A few witnesses take exception to the suggestion that civil courts should not recognize any unauthorized weights and measures in documents executed after a prescribed date. They state that this would lead to fraud and the exploitation of the poor by the rich.

26. Three witnesses do not approve of the proposal that the use of the unauthorized weights and measures should be illegal after a certain date. Others would not have this provision brought into force for periods varying from one to five years.

27. Three witnesses are opposed to the proposal that it should be presumed that any unauthorized weights or measures found in the possession of a shopkeeper, trader or merchant are intended to be used and that such possession should be illegal.

28. As regards the period which, it is anticipated, would elapse, before the new system can be established, the most common period stated by witnesses in Bengal is one year and the next most common term is 5 years, especially if the British system is adopted. But some witnesses consider that in the latter event, 50 years will be required for its establishment.

29. Very few witnesses have raised any objection to the penalties of destruction, confiscation and fine proposed for the use of unauthorized weights and measures. Three witnesses object to penalties of any kind. The amounts suggested as the maximum fine vary from Rs 5 to Rs. 500. A few witnesses suggest that fine should be inflicted only for a second or subsequent offence. A few others suggest imprisonment for repeated offences and one witness suggests whipping as a punishment.

30. Only one witness has objected to the employment of the municipal staff on the detection of cases and that only on the ground that the staff has already too much to do. Only two witnesses take exception to the Revenue Department. A larger number object to the village headman and still more witnesses object to the police. Some witnesses suggest the following as the grade of officers to be employed:—Police, Head Constable, Sub-Inspector or Inspector; Revenue Department, kanungo, Sub-Deputy Collector, Sub-Registrar and Sub-Inspectors of Excise; Municipal, Tax daroga, Sub-Overseer, Overseer, officers specially authorized by the Council, Municipal Commissioners, Vice-Chairman and the Chairman. The following officers or persons are also suggested for employment in this connection—Honorary Magistrates, members of Local and District Boards and village and chowkidari panchayats, zamindars, respectable villagers, school-masters, post masters, honest and educated gentlemen, Government pensioners, elected citizens and the staff of Local Boards. One witness considers special paid agencies will be required.

31. The views held by witnesses in Bengal regarding the effect of the introduction of a uniform system of weights and measures on large and small traders and on the agricultural and poorer classes are varied; some considering that the traders will be most affected and others that the poorer classes will be more affected especially at first; but the general view is that in the long run, all classes will be benefited, though there will be some inconvenience and perhaps hardship when the system is first introduced and people are not thoroughly acquainted with it. Some consider that traders would take advantage of it and raise their prices.

32. The Bengal Chamber of Commerce and the Calcutta Trades Association draw attention to the necessity for a systematic inspection and verification of weights and measures by duly qualified inspectors when the new system has been brought into force. Among other miscellaneous suggestions made are the following:—

- (i) that weights should be made of strong and hard metal so that they will last for a long time;
- (ii) that the Government should make them;
- (iii) that the prices should be as low as possible so that they should be accessible to all, poor and rich, and a set of weights can be kept in every house;
- (iv) that certain firms should be recognized by Government as suppliers of weights or that they should be supplied by municipalities;
- (v) that lists of authorized weights should be published in every village and hamlet preferably on the anniversary of the last Delhi Durbar;

- (vi) that a schedule of all existing systems of weights and measures should be made and a comparative table should be prepared and made part of an Act which should be freely and widely circulated ;
- (vii) that all customers should be vested with power to arrest any man attempting to sell by wrong or false weights and to take him to the local custodian of the standard weights but not to the police ;
- (viii) that the result of all cases relating to the fraudulent use of possession of false weights and measures should be printed in the vernacular and published in markets and other public places as a warning to others ;
- (ix) that a penalty should be prescribed for the wilful harassment of innocent traders by unlawful confiscation and destruction of their authorized weights and measures ;
- (x) that measures should be used struck ;
- (xi) that as the method of weighing goods at railway stations by weighing machines at present in use is not understood by the common people and machines easily get out of order steps should be taken to remove these defects .

MADRAS.

In the Madras Presidency thirteen districts were visited by part or all of the Committee and in the case of Bellary, Malabar and Trichinopoly, two places were visited in each district. Written replies were received from South Arcot, Bellary, Godavari, Kistna, Madras, Madura, Malabar, Ramnad, Salem, Tanjore, Tinnevely, Trichinopoly, and Vizagapatam. The total number of individuals whose replies were received is 841; 19 witnesses were individually examined by the Committee orally as well as 130 persons in 13 groups. The replies of several of the officials represent the results of inquiries from local people.

2. A great majority of the witnesses in the Madras Presidency are in favour of a uniform system of weights and measures throughout India. The principal reasons given for desiring a uniform system are that the present diversity of system is very confusing and leads to litigation and facilitates fraud. Traders find it difficult to understand the weights and measures prevailing in other parts of the country; in consequence errors sometimes arise as they think that they are purchasing by one weight, whereas they find that the goods are delivered by another weight, the seller not having enlightened them as to the difference in weights; the use of the same name for different weights and measures, therefore, leads to confusion and litigation. This tendency is increased by the fact that weights and measures which purport to be of the same weight or capacity at the same place or neighbouring places differ among themselves. A uniform system would facilitate internal and external trade and create confidence among traders and customers who would be able to understand the weights and measures in force and would save calculations both to traders and to purchasers, would save labour and expense, while litigation would be lessened. People would be able to follow the variations in prices in different places with greater ease. An example given in the Tinnevely district is that the people think that the Tuticorin prices are high because the tulam there is 144 palams while in Tinnevely it is 100 palams.

3. The principal reasons urged against the introduction of uniform system of weights and measures are that the present weights would be useless and new weights will not be understood and that traders and people will be put to much trouble and inconvenience. New weights and measures will have to be specially purchased and the ignorant masses will take a generation to learn new tables of weights and measures. The Collector of Ramnad considers that any attempt to interfere with the existing units will be fraught with immense difficulties and possibly even with political danger. He says

that "we should be told that Government was introducing a 'small loaf' or something corresponding to it". At the same time, he is prepared to recommend the introduction of the metric system or some system based on it after Great Britain has adopted it. The Collector of Madura considers that a uniform system will not be attended by advantages commensurate with the inconvenience and disturbance of local custom which would be involved; in theory difficulties may arise and fraud is possible between local purchasers and sellers in other parts of India, but the purchaser is likely to satisfy himself regarding standards of weights and capacity in force at the place of sale and in the last resort transactions can be in terms of the English pound and Railway maund. No other officials are opposed to the introduction of the uniform system. A few traders have objected to the introduction of the uniform system because it would disclose their trade secrets and deprive them of the profit which they now derive owing to the diversity of weights and measures. One witness stated that unless there is difference in weights and measures in different places, there is no scope for the exercise of one's intelligence. A variety of systems keeps people who are not in trade ignorant of current prices. If everyone knew what the current prices are, traders would lose their profits.

4. Of the witnesses who have expressed an opinion regarding the system which should be introduced, some are in favour of the extension of their local system throughout India, and particularly of the Madras city system of

Systems proposed					
3 tolas	...	...	...	...	=1 palam
8 palams	...	...	...	...	=1 seer
5 seers	..	...	...	...	=1 viss
8 viss	.	...	...	...	=1 maunds,

with a candy of 20 maunds. The Collector of Godavari recommends the introduction of this system in addition to the Railway weights and the British system for the Madras Presidency. Some of the witnesses of Ramnad suggest the retention of the old palam of $\frac{1}{2}$ lb. av. and the tulam of 144 palams in preference to the Madras system.

5. Some witnesses suggest systems of their own invention. The Collector of Bellary suggests a decimal system with an Indian series of names. The Collector of Ganjam apparently favours a decimal system based on the tola for weights and the seer for measures of capacity until Great Britain adopts the metric system. The Collector of Kistna also suggests a decimal system based upon the tola. The Collectors of Malabar and Salem suggest the following system:—

New systems proposed.					
175 grains	...	...	...	...	=1 tola.
40 tolas			...	.	=1 lb. av
25 lbs. av	...	...	...	...	=1 maund.
20 maunds	...	...	...	...	=1 candy.

A witness of Madras suggests a decimal system based on the seer of 80 tolas, if the metric system cannot be introduced. Another witness of Madras suggests a tola of 175 grains, a seer of 25 tolas, a lb. of 40 tolas, a Bengal seer of 2 lbs., a Madras maund of 24 lbs. and a Bengal maund of 80 lbs. A witness of Madura suggests a palam of 5 tolas, a viss of 20 tolas and a maund of 80 visses. The Chamber of Commerce, Cochin, suggests that the Railway maund should be reduced to 80 lbs., until the metric system or some other decimal system is adopted in the United Kingdom. The Tuticorin Chamber of Commerce is apparently in favour of "the tola, seer and maund" in districts and the British avoirdupois weights at ports and in foreign trade. A witness in Tinnevely suggests a decimal system based on the palam. Some witnesses suggest the maund of 1,000 tolas.

6. A certain number of witnesses suggest the introduction of the system of weights at present in use on railways. Indian Railway weights. Some of the witnesses recommend this, only if the local system or the British system cannot be introduced. Some state villagers would understand this system easier than the British avoirdupois system. The Collector of Godavari states that it is well-known on account of its use on railways. Some witnesses recommend it, because it is used on railways and by Government; and because it is used by the important firms. One witness of Madras states that the educated public knows the system as well as villagers away from railways; but the latter is denied by other witnesses. Another witness of Madras recommends it, because it is known to 125 millions of people, because the 80-tola seer fits into the Madras viss and because it can be easily correlated approximately with the British and metric systems. One witness of Madura recommends it, because Indian trade is carried on with British territories on a larger scale than with other countries. One group of witnesses prefers it to the British system, because the seer is an exact number of tolas.

7. On the other hand, some witnesses object to the system, because it is not known to any one except railway people and those dealing with railways, because it is inconvenient to traders and agriculturists, because the seer is too big for local trade and is not suited for retail trade and because the railway maund is a very awkward unit with very awkward submultiples. Objection to Railway weights.

8. Certain witnesses including the Collectors of Bellary, Ganjam, Kistna, Nellore, Ramnad and Tinnevely recommend the adoption of the metric system. Metric system The Collectors of Ganjam and Ramnad and the Cochun Chamber of Commerce recommend its adoption after it has been adopted by the United Kingdom. The Collector of Bellary later suggests a decimal system with an Indian series of names and the Collector of Ganjam apparently favours a decimal system based on the tola for weights and the seer for measures of capacity. The Collector of Kistna also apparently favours a decimal system which is based on the tola. Some of the more educated witnesses in Bellary, Kistna, Madras, Malabar, Trichinopoly and Vizagapatam also recommend the adoption of the metric system as well as groups of witnesses orally examined in Malabar and Tanjore. The principal reasons urged for its adoption are that as the majority of the population is ignorant and unintelligent and lives by produce, the uniform system must be a simple system and the decimal system is the most simple that can be devised; that it is the only rational system; that it is already in use in most civilized countries; that it is convenient for calculation; that it is adaptable to all sorts of materials and even to electricity; that the aim should be to have one system for the world to facilitate commercial intercourse; that the adoption of the system by India will accelerate its adoption by England; that if it is not adopted now and has to be adopted later, two changes will have to be made giving unnecessary trouble; that trade will be facilitated, confusion avoided, time and energy saved, that it could be easily learned; that it is in world-wide use for scientific purposes; that the introduction of a third system into the world will make confusion worse confounded.

9. Against the metric system, it is urged that it is novel, foreign and unknown that it is in conflict with the existing system, that the people are not sufficiently intelligent to understand a decimal system and are accustomed to binary subdivisions; that it would puzzle country people and put them at the mercy of the traders and that it would be difficult to overcome local custom; that it is not easy for traders to use, that it would cause a new line of cleavage between England and India which would divert foreign trade from England into other countries and play a sad havoc with the English language. Objections to metric system

10. The number of witnesses who have expressed themselves in favour of the British system is larger than the number of those who have given opinions in favour of the metric system or in favour of the Railway weights, though British system.

some of the witnesses stated that they want a system "connected with the British system"; for instance some suggest that the seer should be made 2 lbs. and a maund 25 lbs. Some witnesses would accept it failing the metric system. The Collector of South Canara qualifies his recommendation with the condition that the system should not lose connection with the rupee. The main reasons urged in favour of the British system are that India has dealings chiefly with British countries; that the pound is already largely used, and traders, shopkeepers and villagers already know it to some extent; wholesale trade with other districts of South India and Burma is carried on in terms of English pound and it is in vogue in many countries as well as in many places in India and Burma. It appears from the evidence that the pound weights are largely used even in villages in the Northern Circars, while one witness of Madras estimates that 10 per cent. of transactions in villages are done by the pound and a group of witnesses of Madura estimate that 50 per cent. of the rural population and more in towns are acquainted with the pound.

11. Objections were taken to the British system on the grounds that it is complicated; not free from anomalies; not easier than any of the Indian systems; not indigenous; not divisible binarily; is almost unworkable even in Britain; is a collection of irregular discordant denominations, the relationship between the various denominations; being so incongruous that it baffles any attempt at reasonable systematization; that it is neither scientific nor logical and as between two bad systems they would prefer the indigenous system. A witness of Madras and a group in Malabar say that the pound is not based upon the weight of the rupee, but a group in South Arcot state that this objection is not sound.

12. A certain number of the official and more educated witnesses have given written replies to the Committee's questions regarding the possible alteration of the coinage in the event of the introduction of the British system; while groups of witnesses and others were orally asked questions regarding this matter. Not much objection is raised to the alteration of the nickel and copper coins, though some witnesses consider it undesirable even to change those coins and some witnesses think that the change would not serve the purpose intended, as they are more liable to loss of weight by wear and tear than silver coins. Some of the witnesses consider that it is unobjectionable to alter the weight of the rupee, while others consider that it would give rise to considerable suspicion especially if the quality of silver is altered and that the reduction in the weight of the rupee would lead to confusion and inconvenience; that the addition of alloy would spoil the silver for ornaments, that any alteration in the coins would create mistrust and lead to fraud. The Collector of Kistna objects to the proposal as altering the only standard weight in India. Other witnesses state that they do not use coins to check weights, as coins vary in weight and they can get their weights checked by the establishment provided for the purpose by the Government; that the coins are only used as a rough check of small weights; that, if necessary, weights can be checked with sufficient approximation now by coins; that it is therefore unnecessary to provide coins to check weights especially if the Government undertake to check weights periodically.

13. *Length, area and cubic content.*—The British system of length and cubical contents are in use throughout the Presidency, and no objection is raised to the proposal that they should be made the standard system for India in addition to the acre and cent. ($\frac{1}{100}$ of an acre) for areas, as they are already understood. Two witnesses in Tanjore state that the cent. and the link (100th part of a Gunter's chain of 66 feet) should be abolished and that a square pole, foot and yard be used for the measurement of land. Their objection to the link is that it does not fit in with the foot and yard. One witness suggests that $\frac{1}{2}$ yard should be an authorized measure.

14. Most of the witnesses in the Madras Presidency are in favour of a uniform system of measures of capacity. Some of the witnesses state that the measures of

capacity should correspond to the standard weights. Witnesses were generally prepared to accept English measures if the British system of weights were adopted. Some have expressed preference for the Madras type measures.

15. Some commodities appear to be sold sometimes by weight and sometimes by measure in every district of the Presidency. The commodities which are so treated vary in different districts, but they are generally salt, chillies, spices, ghi, oils, jaggery, dals, coriander, wheat-flour, ground-nut, mustard seed and sometimes rice and grains. Some witnesses state that the practice leads to confusion and fraud; but others state that as the local practice is well-known to the people of the locality and prices vary according to the weights or measures used, there is no confusion and no deceit so far as local people are concerned; and it is undesirable to interfere with local practice in this matter. Several witnesses, however, have expressed a desire that sales should take place by weight only and that measures should be abolished. The reasons given are that measures vary in capacity and can be easily altered; that the measurer can make a difference in the amount which a measure will hold; that some articles weigh less when dry than when green; that, in the case of grains, chaff, bad grains, etc. are mixed up with the grain. On the other hand, it is said that it would be a hardship to ordinary ryots to make them keep weights and scales; but, as against this, it is stated that merchants would carry weights and scales with them when purchasing produce. Some witnesses urge that salt should be sold by weight only, because its specific gravity varies when the crystals break up; that it is sold by Government by weight and, as retail sales are by measure, traders endeavour to obtain salt with large crystals and the salt of particular factories is preferred by traders. The objection to the measuring of ghi is that it has to be melted before it can be measured and it expands as its temperature rises. On the other hand, it is urged that it is convenient to deal especially with small quantities of all commodities by measures.

16. As regards the question whether confusion arises in consequence of the same term being used both for weights and measures in some parts of the Madras Presidency, this does not appear to be invariably the practice; but where it is the case confusion does not arise generally among the people of the locality because they know what commodities are sold by weight and what by measure and consequently they realize whether a weight or a measure is going to be used. On the other hand, strangers may be put to some difficulties in consequence of the practice. A few of the witnesses that have given evidence on the point appear to think that in the case of the new system it is desirable to make the names of weights and measures distinct, but that it is not necessary to interfere with local practices already in vogue.

17. Special weights are used in certain cases in the Madras Presidency especially in connection with wholesale transactions and special articles such as jewellery and native medicines. The principal reasons assigned for this practice are long usage; convenience and suitability; allowances for dryage, wastage, etc.; the sale of articles by the weights in vogue in the places from which they were imported; the sale of articles by the weights in vogue in the country to which they are to be exported (*e.g.*, ground-nuts by the kilogramme on account of the export to French territory); the sale, by the Forest Department of Government, of firewood by English weights (cwt. and ton); the benefit of retail merchants; and in the case of jewellers' weights, the fact that they are based on former current coins and that small weights are required for valuable articles. Generally, witnesses state that there would be no objection to dealing in commodities by means of standard weights, though there would be initial inconvenience and trouble to illiterate customers and even to petty dealers. Some witnesses, however, desire the retention of local weights or of jewellers' or apothecaries' weights.

18. No objection is raised in the Madras Presidency to the suggestion that the authorized weights and measures should be adopted in all transactions by Government, Railways and bodies controlled by Government.

Methods of introduction, use of authorized weights by Government, etc.

19. In the Madras Presidency, no objection is taken to the proposals to supply specimens of the authorized weights and measures to Revenue offices, police stations and recognized elementary schools. One witness would not supply them to the village headman or to the police, as the headman or police constable may parade the bazaar to check weights and take people to task whether weights are right or wrong. Others suggest that specimens should also be supplied to municipalities, unions and respectable traders and landholders.

20. Some witnesses suggest that the tables of the authorized weights and measures should also be published by means of pamphlets distributed free. It is also suggested that the tables should be published by beat of tom tom and that copies of the tables should be pasted in *diglott* at the entrances of markets and in other conspicuous places and important shops and in all post offices, revenue offices, railway stations, police stations, schools, choultries and travellers' bungalows.

21. As regards the proposal that the use of other weights and measures should not be taught in recognized elementary schools, some witnesses in the Madras Presidency state that at first the local weights and measures should also be taught as it will take some time for their use to cease, especially with reference to documents which have already been executed. Some witnesses urged that the use of the authorized weights and measures should be taught in all schools.

22. The suggestions regarding the stamping of weights and measures are approved in the Madras Presidency. Some witnesses, however, object to the present system adopted by the Madras Government on the ground that the stamping gumastahs, being ill-paid, are open to corruption, and for a consideration are prepared to stamp weights and measures which are not strictly accurate. It is urged therefore that the original stamping should be done at some central place and that the stamping establishment should be properly supervised. The Collector of Madura does not approve of the proposal that only the authorized weights and measures should be stamped. He considers it an extreme step to force shops dealing in English articles to abandon the English weights. The witnesses generally approve of the proposal to remit the fees of stamping for periods varying from one to five years. Some witnesses, however, consider it unnecessary to forego the fees, while the Collector of Trichinopoly considers that local conditions should determine the fees.

23. Some witnesses state that Government should replace all weights and measures by corresponding authorized weights and measures free of cost; while others suggest that new weights and measures should be supplied free to persons having less than a certain income. Some witnesses, however, consider it unnecessary to supply weights and measures free. The proposal to do so will involve a considerable outlay on the part of Government and one group of witnesses pointed out that when the Madras Government altered the measures in use in certain districts, they did not supply new measures free in exchange for old ones.

24. Some witnesses state that it is unnecessary for Government to make grants for the alteration of weighing machines, because the owners of weighing machines are generally firms or well-to-do persons who could afford to alter the machines without any grant from the Government.

25. No objection is raised to the proposal that only stamped authorized weights and measures should be used after a certain date in markets under the control of Government or any local authority; but some witnesses suggest that this provision should apply to all markets and others that it is unnecessary to limit the application to markets.

26. Generally, no objection is raised to the suggestions that the import, manufacture and sale of other weights and measures should be declared illegal. One witness, however, suggests that the importation of foreign weights and measures should be permitted. In this connection, some witnesses urge the desirability of Government undertaking the manufacture of weights and measures, while others suggest that the manufacture should be undertaken only by firms licensed by the Government. It is stated that locally made measures are inaccurate.

27. Some witnesses state that it is unnecessary to forego the import duties on authorized weights and measures and weighing machines, because it would make very little difference to the price, and it is further urged that it is desirable to encourage the manufacture of weights and measures and weighing machines in India. Most witnesses, however, approve of the proposal to forego the import duties temporarily.

28. As regards the question whether the Government should sell the authorized weights and measures at cost price or at a price which would allow reasonable profit to private trade, many witnesses expressed their agreement with both suggestions; but many prefer the second, which would allow a reasonable profit to private trade, rather than the first proposal. A suggestion is made that the first proposal should be adopted for two years and then the second. Another suggestion appears to be that the Government should sell at cost price to the trade and with reasonable profit to persons not in the trade.

29. As regards the suggestion that after a certain date documents should be drawn up only in terms of the authorized weights and measures and that civil courts should not recognize any others in documents executed after a certain date, the Collector of Kistna in the Madras Presidency considers this suggestion impracticable, while the Collector of Nellore considers it would be an unwarrantable hardship. A few other witnesses also object to the suggestion, while some are apprehensive that it might affect documents which have already been executed. It is suggested that parties may be allowed to enter their own weights and measures as well as the authorized weights and measures in documents and that the courts may be allowed to recognize weights and measures in documents executed after the prescribed date, provided the *bonâ fides* of the executant is not doubted. Another witness suggests that such documents should be admitted on payment of a fine.

30. Exception is taken to a certain extent to the suggestion that documents drawn up after the prescribed date in terms of unauthorized weights and measures should not be registered in the office of the Registration Department on the grounds that it would be a great hardship to the people and will lead to fraud. It is suggested that registration may be allowed on payment of higher fees.

31. Exception is taken to the suggestion, that the use of any weights and measures except those authorized should be illegal throughout India after a certain date, by witnesses who consider that special weights and measures are necessary in particular localities or for a particular purpose. One or two witnesses are opposed to it, apparently on the ground that it will be a considerable hardship.

32. A few witnesses object to the suggestion that it should be presumed that any unauthorized weights and measures found in the possession of a shopkeeper, trader or merchant are intended to be used and that such possession should be illegal. They consider this suggestion severe; other witnesses, however, approve of the proposal.

33. The periods suggested by witnesses after which the various steps are to be brought into force in connection with the introduction of a uniform system vary very widely. Many witnesses have given one period for all the steps, varying from one month to ten years. The favourite period seems to be one year. A few witnesses suggested 3 years under the misapprehension that the new system would affect documents previously executed. Other witnesses vary the periods after which the principal measures are to be adopted, and they generally recognize that the last measures to be taken will be those relating to the declaration that the use of unauthorized weights and measures is illegal. The period after which this notification might, according to witnesses, be issued, varies from six months to ten years. The Collector of Tinnevely and another witness of Madura district consider, however, that documents should not be required to be drawn up in terms of the authorized weights and measures for 30 years.

34. The penalties proposed namely, destruction, confiscation and fine for the use of unauthorized weights and measures appear to be generally approved in the Madras Presidency. Some witnesses have pointed out that it is desirable that all unauthorized weights and measures concerned in cases should be destroyed as, if they are confiscated and not destroyed, there is a danger that they may be sold by public auction and then used again. Some witnesses consider that fines should not be inflicted until the second or third offence. Many witnesses appear to contemplate the possibility of confiscation or destruction without prosecution before a Magistrate which would involve the accused attending at perhaps a distant court. Some witnesses propose that the fines should be limited and the limits proposed vary from one rupee to Rs. 250. A few witnesses propose that imprisonment should also be made a substantive punishment for repeated offences.

35. The proposals made by the Committee regarding the agencies to be employed in detecting cases of unauthorized weights and measures are generally approved in the Madras Presidency. Many, however, suggest that the lowest grade of officials to be employed should be fixed, *e.g.*, Sub-Inspector of Police, Revenue Inspector, Chairman of the Municipal Council, Sanitary Inspector, Overseer, Market Superintendent in municipalities, the Union Chairman in unions. A few witnesses would prefer that the work should be done by the Revenue Department; while others state that the Revenue Department has already got its hands full. Some witnesses suggest the employment of officials in every Department, such as Salt, Abkari and Customs and Forest Departments. A few suggest that the village headman should not be employed, while others propose that he should be associated for this purpose with three or four influential persons in the village. Honorary and Bench Magistrates are also suggested as suitable persons to be empowered to detect cases.

36. As regards the effect of the introduction of a uniform system of weights and measures, most of the witnesses in the Madras Presidency who have expressed any opinion on the point state that it will have no effect on anyone. But some state that it will cause inconvenience initially to smaller traders and the agricultural classes, but in the long run the results will be beneficial. The larger traders will find their accounts and calculations simplified and have a clear conception of the fluctuation of prices in various markets. Smaller traders and the public will benefit, as there will be less liability to confusion and the poorer classes being able to understand weights and measures more easily will be less liable to be defrauded.

37. A few witnesses suggest that measures should be struck as the heaps vary. A few other witnesses prefer heaped measures; some witnesses state that it sounds inauspicious to knock off the head; while others state that there would be disputes regarding the method of striking and difficulty in measuring large quantities by means of struck measures.

38. One or two witnesses in the Madras Presidency suggested that scales should be tested every year and that the rough bazaar scales now in use should be replaced by good metal balances to prevent the frauds now extensively practised by petty shopkeepers owing to the scale now in use.

Testing of scales.

39. Witnesses of South Arcot, Bellary, Kistna and Cochin have drawn attention to the desirability of the adoption by Native States and Foreign possessions in India of the uniform system of weights and measures which may be adopted in British India, so as to facilitate trade between British India and other parts of India.

Desirability of Native States adopting the same system

40. Among miscellaneous suggestions made by witnesses of the Madras Presidency are proposals that weights and scales should be of iron; that measures should be made of a metal which cannot be corroded by salt, oil or ghi; that if measures are made of sheet metal, there is chance of fraud being practised as they can be altered; that the diameter of measures should be the same at the top and bottom; that large measures are required for certain purposes and the measures should be of convenient shape; and that weights should be made of one uniform moulding like coins so as to prevent tampering. Two witnesses suggest that rewards should be paid to informers of offences. The Collectors of Kistna and Salem consider that fairly drastic measures should be taken at first and that such a course would be the truest kindness in the long run for the alleviation of the difficulties of the agriculturists and poorer classes who are now cheated by petty shopkeepers. The Collector of Kistna suggests that measures should be adopted first in large towns and then in smaller towns and he is of opinion that if this is done, the inhabitants of rural villages will soon fall into line without difficulty, when they find that their produce is bought according to the new system.

Miscellaneous suggestions.

BIHAR AND ORISSA.

Written replies were received from 512 persons in Bihar and Orissa; these included 39 officials (of whom 21 were Europeans), five European non-officials and the representatives of two Associations. In some cases the replies of officials represented synopses of opinions obtained from large numbers of persons. Replies were received from all the 20 districts in the province. The Committee or a portion of it visited six districts, *viz.*, Bhagalpur, Champaran, Cuttack, Manbhum, Muzaffarpur and Patna. In these districts 130 persons were examined orally in 13 groups, ranging in size from 2 to 18 persons' besides a few witnesses who had sent written replies and were examined individually.

Places visited and evidence received.

2. Witnesses in Bihar and Orissa are almost unanimously in favour of the introduction of a uniform system of weights and measures throughout India. It is stated that a trader purchasing articles from a distant place has now to ascertain the system of weights and measures in force there as well as the price of the articles and to convert the weights and measures to his own system and that the consequent delay sometimes affects rates; that commodities are sold to ignorant persons by smaller weights than they should be according to the price quoted; that unscrupulous traders deliberately use short weights; that hundreds of civil cases arise out of disputes regarding the length of the *lagga* or the weight to be used in determining the landholder's share of the crop; that a traveller finds great difficulty in calculation when he visits a place where the standards of weights and measures differ from those at home; that in consequence the adoption of a uniform system will facilitate trade, help in its growth, prevent fraud and cheating and minimize misunderstandings and litigation between landholders and their tenants.

Desire for uniform system

3 The Collector of Patna considers that the practical difficulties in the way of imposing a uniform system of weights and measures on the agricultural classes appear to be insuperable; but thinks that a system based on the seer of 80 tolas might be introduced by legislation in the future. Only two other witnesses and one group are opposed to the adoption of a uniform system on the grounds that any change will be very inconvenient; that the people are mostly uneducated; that confusion will arise in converting old weights into new; that the people are conservative and opposed to innovation; that the market-price of staple-foods, etc., would rise; and that it would be difficult to insist on uniform linear measures as villagers use their forearm for measuring cloths. One witness states, however, that if the new weights have different names from the present weights, the conversion from the old to new weights could be easily made and the danger of a rise in prices would probably be avoided.

4. A few witnesses are in favour of their own local weights as opposed to the railway system, as it would take the people a long time to learn any other system and there would be difficulty and confusion in the future. The seer of 101 tolas is recommended because it is practically 100 rupees weight, the extra tola being allowed for inaccuracy, dust, etc.

5. One witness recommends the seer of 100 tolas, because the labourer is paid in grain and if the seer is reduced, the labourer as well as those who receive alms will lose. Three witnesses favour a seer of 2 lbs, while one witness suggests a seer of one kilogramme with the usual Bengal table of weights.

6. The Railway system of weights is the favourite system among the witnesses of Bihar and Orissa. A few witnesses add certain local weights to the table. It is stated that it will rouse the least opposition; could be most easily enforced and most easily understood by villagers and traders, being already in use in many places. Another reason given is that it is an indigenous system and one group of witnesses urges that the weights can be easily checked with rupees. Two witnesses would prefer it to the British system if the metric system cannot be introduced.

7. A few educated witnesses are in favour of the metric system. The reasons given are that it is easy to learn, simple to remember, simplifies calculations, saves unnecessary trouble and waste of time in calculations; is the most convenient known system and has been recognized by all civilized nations as affording for the future the advantages of a universal system. Two of these witnesses, however, regard its introduction into India as impracticable; while the District Officer of Champaran is doubtful whether the change would not be too sudden or violent as suspicions might be aroused amongst the illiterate and there might be a good deal of opposition to be overcome. A few witnesses recommend the metric system, failing some other system recommended by them.

8. Only four witnesses in Bihar and Orissa, all officials, select the British system as their first choice. The reasons given for the selection are that India has more trade with British territories than other countries and that there would then be one uniform system throughout the British territories and United States of America. A few witnesses prefer the British system to the metric if the local system or the Bengal system is not adopted. The principal reason is that the British system is already known to some extent. One witness prefers it as the pound is divided into 16 ounces. A few witnesses are opposed to the system on the ground that it will give rise to much confusion and inconvenience; that uneducated classes will take a long time to understand it; and that it is not akin to any system in India.

9. The great majority of the witnesses who dealt with this question, especially of those orally examined, consider it unnecessary to alter the weight of the rupee if the British system is to be introduced. It is stated that any change would create difficulties, inconvenience and confusion and hamper business transactions; that counterfeit coins may be introduced; that it would upset the weights now used for gold, silver and Indian medicines and might lead to fraud in connection with the making of jewellery from rupees. There is not so much opposition to the proposal to alter the nickel or copper coins.

10. Witnesses of Bihar and Orissa are prepared to accept the English yard and a cubit of 18 inches and a girah of $\frac{1}{16}$ yard. For areas, some witnesses prefer the bigha, katha, and dhur system. One witness would have the bigha made equal to an acre. The Collector of Bhagalpur makes a similar suggestion; but other witnesses would fix the length of a lagga at $5\frac{1}{2}$ cubits which would give a bigha of 3,025 square yards or $\frac{1}{4}$ th of an acre. Only three witnesses, two of whom are Collectors, recommend the acre and decimals but one group state that there would be no difficulty in expressing areas in acres and decimals in the surveyed portion of their district. On the other hand, one witness states that the measures of area vary and have been in existence from time immemorial and that it would therefore be difficult to alter the system now and that these measures should not be interfered with.

11. A few witnesses of Bihar and Orissa, who have given evidence regarding the question what should be the uniform measure of capacity appear to accept a measure fixed on the unit of weight of water or of some multiple of it. For instance, at Cuttack, witnesses are prepared to accept a ganni of one gallon.

12. No witness in Bihar and Orissa has made any suggestion regarding the measures of cubical contents.

13. Grains, oil-seeds, liquids, ghi, milk, oil, salt, tobacco, coal, fuel, etc., are sometimes dealt with by special weights in wholesale trade. The reasons given are, custom, allowances for dryage, variation of coins, concession for wholesale purchase, method of obtaining profit without raising the prices apparently and for purposes of cheating. As regards gold, silver, etc., it is said special weights are used as they are sold in small quantities. Generally, it is thought that there would be no objection to standard weights and measures being used in all cases. Some witnesses would make an exception in favour of druggists and jewellers, etc. There would be temporary confusion by the introduction of the standard weights and measures while traders and others become accustomed to them.

14. Grains, rice, pulses, liquids are sometimes dealt with by weight and sometimes by measure. In the case of liquids such as milk and oil, the measures purport to hold a particular weight of the commodity sold. In such cases, witnesses are generally of opinion that there is no objection to permitting the present practice to continue. In the case of grains, etc., however, where measures are used, there is a more general desire for the prohibition of the double practice except in so far as it may affect backward races who are not used to weights. It is said that measures can be easily manipulated and are frequently inaccurate. On the other hand, it is stated that the total abolition of measures which is suggested by some witnesses would be inconvenient, especially to the poorer classes.

15. Generally, witnesses in Bihar and Orissa consider that no confusion arises owing to the use of the same term for a weight and also a measure except among strangers. Consequently the majority of those who have expressed any

opinion do not consider it necessary to make any change in the existing practice, especially as in many cases the weight and the measure purport to represent the same quantity, *e.g.*, generally in the case of liquids.

16. (a) No objection has been raised to this proposal. A steamer agent suggests the addition of Adoption of the authorized system by Government, etc., methods of introduction. steamer offices trading only in Indian waters.
- (b) This proposal is approved. Some witnesses suggest that they should also be "supplied to zamindars' village kutcheries, mustajirs, lease-holders of *hats* and fairs, presidents of village panchayats, co-operative credit societies, post offices, all registration offices, presidents of village unions, presidents of chowkidars' unions, brokers, etc.
- (c) Witnesses generally approve of this proposal. Some witnesses suggest that the tables should also be published by or supplied to zamindars, village chowkidars, village panchayats, presidents of chowkidari unions, co-operative societies, elementary schools, lease-holders of *hats* and of fairs, local bodies and police stations. It is also suggested that the tables should be published in vernacular newspapers and should be distributed at fairs, railway stations and other places of public resort.
- (d) No comment is made on this suggestion except that one witness proposes that the use of the corresponding English measures should be taught in schools where English is taught.
- (e) This proposal is approved throughout Bihar and Orissa. A few witnesses suggest that no fee should ever be charged for this service.
- (f) A few witnesses consider it unnecessary for Government to supply authorized weights and measures free of cost, in place of the weights and measures now in use.
- (h) A few witnesses consider this unnecessary as they are used only by well-to-do people.
- (i) One witness suggests that owners of private markets and landed proprietors should be asked to adopt authorized weights and measures; otherwise no comment is made on this proposal.
- (j) The only suggestion made is that the words "except for scientific purposes" should be added.
- (k) A few witnesses in Bihar and Orissa consider it unnecessary that Government should forego the import duties. Two witnesses suggest that no import duty should ever be charged.
- (l) Witnesses generally approve of the proposal that the Government should sell weights and measures but some consider it unnecessary for Government to sell at cost price, while others suggest that sale might be at cost price for a limited period.
- (m) and (n) These are generally accepted but the Collector of Patna is wholly opposed to the suggestion as it will cause inconvenience to trade. Two other witnesses consider this provision unnecessary and a hardship.
- (o) Only two witnesses are opposed to the suggestion that the use of any weights and measures except those authorized should be illegal throughout India after a certain date.
- (p) The proposal that it should be presumed that any unauthorized weights and measures in the possession of a shopkeeper, trader or merchant are intended to be used and that such possession should be illegal is approved by all witnesses in Bihar and Orissa except two.

17. Witnesses in Bihar and Orissa have generally given one single period by which they expect that the uniform system of weights and measures will be completely introduced. The most favourite period is one year and the next is two years. The periods mentioned vary from one month to 20 years, while one group of witnesses state that it will take 20 or 30 years for the acre to exclude the bigha.

18. The proposal that the penalties for failure to adopt the prescribed system should be destruction, confiscation and fine is generally approved by witnesses in Bihar and Orissa. While a few consider that confiscation is unnecessary, others would inflict a fine only for a second or subsequent offence or after a certain period after the first introduction of the system. Some witnesses point out that destruction is necessary in any case to prevent the use of the unauthorized weights and measures again. Sums varying from Rs. 2 to Rs. 100 are mentioned as suitable amounts for the fine. It is also suggested that arrangements should be made to punish offenders locally without making them go to distant places. Two witnesses suggest a penalty of imprisonment for repeated or serious offences.

19. The agencies proposed for the detection of cases are generally approved by the witnesses in Bihar and Orissa, but a few witnesses object to the employment of the police as they are liable to abuse their powers, while others would only allow the police above the rank of head constable or Sub-Inspector to detect cases. Others, on the other hand, suggest the employment of the police only. The suggestion to employ the revenue staff, including the kanungo, has been more generally approved though some witnesses appear to fear that the revenue officials may harass the people. The employment of municipal authorities and village headmen or village panchayats is generally approved. The employment of officers of Co-operative Credit Societies, inspecting officers of Excise, Education and Public Works Departments, Local and District Boards and Sub-Registrars, Headmasters, Government pensioners, all gazetted officers, Zamindars, Municipal Councillors, Members of District Boards and presidents of chowkidari unions is also suggested as suitable persons to be employed in this connection.

20. Witnesses in Bihar and Orissa generally consider that the ultimate effect of the introduction of a uniform system of weights and measures would be beneficial to all concerned, though there may be some temporary confusion and inconvenience until everyone has become familiar with the new system.

21. The following are among the miscellaneous suggestions made by the witnesses of Bihar and Orissa. Weights and measures should be made easily available and as cheap as possible. They should be manufactured in Government factories or under the supervision of Government and issued to the public after being stamped. The Government should license recognized reliable firms to manufacture and sell standard weights and measures at prices fixed by Government. The Government should reserve the right to manufacture and sell weights and measures for some time, after which the right should be given to recognized private firms over which the Government should retain control. The Government should confiscate all the old weights giving a rebate for them. Licenses should be granted to approved firms to stamp standard weights. Weighing machines for weighing authorized weights should be kept at every municipal office and in every bazaar. Owners of markets should be made responsible for the use of standard weights and measures and they should be fined if they fail to report the use of illegal weights. If it is not practicable to introduce a uniform system for India, provincial standards should be fixed. Gorakhpuri pice and dhebuas should be done away with. A confidential enquiry should be made regarding the inaccuracy of scales.

PUNJAB.

Seven districts were visited (Ambala, Amritsar, Ferozepore, Lahore, Ludhiana, Multan and Sialkot), and written evidence was only received from these districts. 81 replies were received, though these represented considerably more individuals as several were the result of inquiries from a considerable number. 24 were received from officials (7 Europeans), and 57 from non-officials; of persons who sent in written replies 6 were examined individually, and 15 with 195 others in 16 groups.

2. Opinion is unanimously in favour of a uniform system being enforced. Thus, the Deputy Commissioner of Sialkot writes ".....uniform system, which I thoroughly believe is strongly desired by all honest people". The great majority favour the Railway weights, a few saying that unless that system be enforced there should be no uniform system. This is more particularly noteworthy, as all the districts visited except Multan are districts in which the 80-tola seer is not the prevailing rural weight, and certainly in some cases the opinions of the petty trader and agriculturist were obtained; one witness of Ferozepore suggested retaining the kachha weights in rural areas. It is to be noted that the Railway weights are frequently known as the "British" system and that the 80-tola seer is often known as the *Angrezi* seer. This is in consequence of these weights having been introduced by the British at the time of the annexation. This introduction is said to have been effected without great difficulty, the Tahsildars calling up the traders and explaining to them the new system. The introduction of any other system is considered to be very difficult. One group is ready to accept any system based on the tola.

As regards alternative systems, a few witnesses favour the British system, as a rule by way of the 2 lb. seer; one or two prefer the metric system, while the Deputy Commissioner of Lahore proposed that the existing weights be allowed to continue side by side with the metric system for some time. When asked to choose between the metric and British systems on the hypothesis that one or the other was to be introduced, the majority favoured the British, only three preferring the metric, while one group was about equally divided in favour of either. But it was quite clear that the selection was only that of what was least disliked, the real preference being for the 80-tola seer. As a rule, a change of coinage is deemed necessary if the British or metric systems are introduced. But a fair number say that there is no necessity to change the rupee if the pound be introduced, one witness urging that 39 of the present rupees are quite near enough to the pound for all practical purposes. But the proposal is very obviously disliked as a rule, and suspected by some. Others say that it would be necessary to convince the people that the reduction in weight was for general convenience and not for Government's gain. The objection on the score of upsetting weights is, as usual, really the greater. A greater or less approval is expressed by some. The majority of those orally examined disliked the suggestion unless the amount of silver be left unchanged; approval is only more or less expressed by three groups. If the metric system were decided on, a new coin of £ 1¹/₂ is approved of by a few.

As grounds for the preference for the Railway weights, it is urged that through the railways and post office the system must be more or less known all over India.

As regards weights below the tola, not many witnesses have expressed any opinion. Some have advocated that the tola be fixed at 180 grains; others have asked for the retention of the current tola on the ground that if it were reduced, prices of articles weighed by it would remain unaltered.

3. For measures of length the British yard is with very little exception recommended, its division into 16 girahs and 2 haths should be recognized. It is pointed out that piece goods from metric countries even (France, Germany and Austria) practically always come made up into yards. One witness in Sialkot suggested the recognition of a 33-inch yard, but admitted that he could do with the 36 inches. Another proposed a somewhat fantastic system involving a 10-inch foot and a 40-inch yard, and one the recognition of the 24-inch hath. The furlong and mile were recommended by such as proposed anything larger than the mile save by one witness who wished for the 5,000 feet Canal mile.

4. *Area*.—As already noted, the acre is fairly widely known but is not subdivided decimally. The bigha of $\frac{5}{8}$ acre is recommended from Ambala and the 4,000 square yard *ghumaon* from Amritsar. A fair number are quite prepared to accept the proposal that the acre and its subdivision into one hundred parts be introduced in the way adopted in several other provinces, *i.e.*, by giving the areas of all fields at next re-survey in both acres and hundredths, and also in the current measure, the two methods being used side by side in the Land Records until people were sufficiently familiar with the acre. A few think there would even then be difficulty in insisting on areas in deeds and suits being expressed in acres and hundredths, whether they were or were not at the same time also expressed in the old measure. The necessity of a uniform system of land measurement is specially urged by reason of the difficulty experienced where districts using different systems adjoin, more especially as this is frequently on the banks of rivers liable to alluvion and diluvium.

5. Only one of the districts in which measures of capacity are used to a considerable extent was visited (Sialkot). They are used to a moderate extent in Ferozepur, but appear to be dying out in Lahore and Multan. In fact most of the Lahore witnesses thought it unnecessary to recognize any such measures, but some considered that this should be done and that a *topa* about equal to a gallon would be suitable. In Sialkot the Deputy Commissioner proposed that the *topa* be standardized so as to contain, when struck, 2 seers of dry wheat. The witnesses thought that if the *daropa* were fixed at about the size of the gallon it would be suitable, the *topa* and *paropi* being respectively $\frac{1}{2}$ and $\frac{1}{4}$ thereof. It was considered very improbable that the custom of heaping could be stopped. As regards shape, the existing bulged more or less circular shape was naturally preferred but it was thought possible to secure acceptance of a cylindrical shape, but height and diameter must be more or less equal.

6. As a rule, the only liquid measure used is one made to hold some exact weight of the liquid for which it is used. An Amritsar milkman asked that the *babki* be made to bear some fixed proportion to the *gadwoi*, a measure, usually holding a seer of milk. An oil seller similarly asked for the prescription of a uniform *palli*, while a group of witnesses in that town recommended the adoption of the British Imperial liquid measure for milk.

7. Opinions as to the advisability of abolishing the simultaneous use of weight and measure are, as a rule, of comparatively little value, as measure is very little used in most of the districts visited. In such (Ambala, Ferozepur, Lahore and Multan) the general opinion favours abolition of measures, and even in Sialkot several favour such action. The ground, where any is given, is that in this way fraud would be prevented. A few witnesses, especially those from or acquainted with rural areas where the use of measures is still considerable, consider that abolition would not be practicable.

Most witnesses, who have considered the point, consider it inadvisable to use the same name for a weight and measure, but the matter, as a rule, is of

academical interest, as practically the only measures that bear the same name as any weights are measures that purport to contain that weight of the particular liquid sold by it, and in that case the use of the same name is deemed unobjectionable.

8. The use of special maunds and seers for special commodities is moderately prevalent. Such use is variously attributed to ancient custom, the necessity of allowing for dryage, wastage, etc., or to different weights having originally been in use in the place whence the article comes. The great majority of witnesses advocate abolition of all such special weights, and consider that at most there may be some temporary inconvenience. The Secretary to the Punjab Chamber of Commerce at Amritsar considers it "impossible to put a stop to these variations by legislation" quoting in particular the 97-tola seer for tea. Accordingly the evidence of a tea merchant on this very point is specially valuable. He discusses the tea seers and tea-trade customs in detail and after pointing out the inconveniences that may arise from abolition winds up by saying that "if a standard weight is fixed . . . there would be a great advantage for all buyers and sellers alike". The silk trade is another in which in Amritsar there are several special measures. A silk merchant says, "Such seers . . . cause much inconvenience and hindrance and are troublesome for trade and commerce". An Ambala witness asks for the retention of the special firewood maund, but other Ambala witnesses do not support him.

9. A few witnesses have suggested special weights or measures for special trades. Two propose the retention of the old tola, etc., for jewellers, one for medicines, and an important Lahore witness urges that the prohibition of the British weights would be very inconvenient, and urges that their use be permitted if some other system be prescribed either under a license or else accompanied by orders requiring these weights to be always of a different shape from the usual weights.

10. With reference to methods of introducing and enforcing a uniform system the proposals of the Committee, as set forth in Question 20, met with a considerable amount of approval. The following are the chief suggestions and criticisms made :—

- (a) It is suggested that pressure be also exerted on other bodies to persuade them to take similar action.
- (b) Distribution of specimens is also recommended to Municipalities, District Boards, Notified Area Committees, Octroi posts, zaildars and chowkidars, bazaar chaudharis, and patwaris. The only adverse criticism is that of the Deputy Commissioner of Lahore who would restrict distribution to treasuries and sub-treasuries.
- (c) It is urged that publication be in all the vernaculars, Urdu, Hindi, Multani and Gurmukhi; that the tables be hung up in post offices and railway stations, police stations, schools, dispensaries, public libraries, and Municipal and District Board offices, and wherever samples of the weights are kept; that they be published in all newspapers, engraved on stone and set up in bazaars and large villages; and lastly that the new weights and measures be proclaimed by beat of drum.
- (d) Teaching of other weights as well is only urged by one witness. Special instruction on first introduction is also urged.
- (e) The Deputy Commissioner of Lahore urges that no weights should issue at all without a Government stamp.

- (f) A system of regular testing, stamping and inspection of weights and measures is disapproved by none, and specially approved or recommended by a large number. The only criticism offered is on the score of expense, and several advocate that it be done free, while only one specifically proposes a fee and one after 50 years. The period between successive inspections is variously recommended; annually for shopkeepers in towns and triennially to quinquennially elsewhere may be taken as the general opinion.
- (g) Several urge the free replacement of all weights to begin with as a good way of starting the system, and popularizing it with the poorer classes, and especially with those who at present use stone weights, a fairly numerous class in parts of the Punjab. One recommendation as regards poor people is that a free set be given to every 25 families, but this witness appears to contemplate the enforcement of the use of prescribed weights in private households for purposes other than ordinary trade. One or two suggest that Government arrange to buy up old weights as old iron, or at a slightly higher price. One witness (a pleader and trader of Multan) urges that if free replacement be done at the beginning it would "ensure the success of the new system".
- (h) Disapproved, except for a short period for weighing machines.
- (i) Opinions are various. A considerable number think that the supply of weights should be arranged for by Government; some simply at cost price, or for a period of 6 months, or of 10 years, or combined with free licenses to private firms. The Deputy Commissioner of Ferozepur thinks that no private trade in weights should be allowed, Government arranging all, and a group of witnesses in that district urge that Government should see that a supply of stamped and tested weights is available; the Deputy Commissioner of Lahore puts forward an elaborate scheme for the manufacture and distribution of weights by a method similar to the central distillery system for liquor, sales to be through treasuries and sub-treasuries, with a system for withdrawing and replacing weights when worn out, on the lines of coin and an important Lahore witness suggests that weights be replaced for a period at cost price free of charge, but that after that had expired double cost should be charged. The Deputy Commissioner of Sialkot would employ a monopolist contractor thinking this the best way of regulating the prices. A Multan witness suggests that Government should provide traders with weights and measures at cost price on condition that they sell at a price not more than $3\frac{1}{2}$ per cent. in excess thereof, Government recasting old weights by a contractor. An Ambala witness suggests that weights be made by private firms under the control of Government and one from Amritsar that they be made by Government agency. A few favour the suggestion that manufacturers of weights and measures should be required to take out licenses which should be given free of charge while more think this unnecessary if testing and stamping be insisted on. Six witnesses definitely recommend that Government either sell at a profit, or leave the supply entirely to private enterprise.
- (m) and (n) The only criticism offered is that of the Deputy Commissioner of Lahore who urged that scribes of such documents are, as a rule, not well-trained men.
- (p) One witness, an Ambala banker, objects to this presumption. Other suggestions are:—That weights should show what they are by inscriptions in English and vernacular; that prescribed weights should be coloured red; that stone weights be absolutely prohibited; that there should be no interference with weights used otherwise than by shopkeepers; that balances should also be

inspected; that shopkeepers in rural areas might record the fact of having provided themselves with standard weights with the patwari; and lastly that to arrange for the introduction of the new system into a town, a committee should be appointed consisting of a grain-dealer, cloth-merchant, shroff, landlord, general merchant, druggist, factory-owner, leather-merchant, engineer and lawyer.

11. The period deemed necessary for the complete introduction of the Indian Railway weights with stamping of weights is variously estimated at from 3 months to 6 years; most opinions vary about 1 to 2 years. For the British system anything from 5 years to a generation is deemed necessary.

Period.

12. The progressive exercise of confiscation and imposition of fine was generally approved. Leniency at first is generally urged. A group of Ferozepur witnesses urge that the word 'penalty' be used instead of 'fine' as implying less stigma.

Penalties.

13. As regards the staff by whom inspection etc., is to be carried out, opinions are very numerous and varied. Most do not care about the Police, but there are a fair number who favour the employment of the superior grades, *i.e.*, not below a Sub-Inspector, a fair number favour the Excise Inspector, and the Secretary to the Punjab Chamber of Commerce proposes a properly organized Weights and Measures Department to be connected with the Excise Department. On the other hand, one witness objects to the Excise Inspector on the ground that his methods are likely to be similar to those of the Police. The employment of the Revenue staff, as a rule, of rank not below supervisor kanungo, occasionally not below Naib-tahsildar, is approved. A few would also employ the patwaris. In towns the Municipality, it is universally agreed, should supervise matters, the members themselves, with the bazaar or trade chaudharis and the superior staff, being generally recommended, though one witness would go as low as officials drawing Rs. 15 per month. In rural areas the headman (with zaldar, safedposh and lambardar) is generally recommended; only two witnesses urge definite objections, one on the ground of his being frequently illiterate and likely to use his powers to gratify personal spite, and the other on the ground that he is less reliable than a constable; one or two would select headman for this purpose—but it is clear that he has the general confidence of the witnesses. That he or the bazaar chaudhari be paid for their work in this connection, or at least rewarded in cases of successful prosecution is recommended by some.

Staff

A special establishment, or at least special Inspector, is recommended for the larger places by some. A special committee of shopkeepers, etc, is also proposed; and others suggest that the inspecting officer, be he Excise Inspector or other, be accompanied, when inspecting, by one or two respectable residents of the place. One important group of witnesses urge that cases should go to a revenue court

14. Opinions as to the effect of the introduction of a uniform system are less divergent than usual. It is practically agreed by all that the ultimate effect will be a benefit to all, a few consider that there would be some slight temporary inconvenience, more especially to the small traders and poorer and agricultural classes. These opinions are, it must, however, be remembered, practically invariably based on the assumption that the uniform system introduced will be the Indian Railway weights. It is also urged that interference with weights and measures must be confined to shopkeepers, traders and merchants; and that no attempt at touching weights or measures in use in private houses must be made.

Effect of uniform system

BOMBAY.

The Committee visited seven districts besides Bombay City. 238 replies were submitted by 572 witnesses, of whom 524 were non-officials. 29 witnesses were Europeans and 542 Indians. Besides, several officers had consulted a large number of people before submitting their replies. The Committee examined 41 witnesses individually and 114 in groups. Among the witnesses were the representatives of the Bombay Chamber of Commerce, the Karachi Chamber of Commerce, the Great Indian Peninsula Railway Company, the Bombay Presidency Trades Association, the Bombay Cotton Trade Association, the Indian Merchants' Chamber and Bureau, the Bombay Commission Agents' Association, the Bombay Grain Merchants' Association, the Bombay Country Tobacco Trade Association, the Karachi Indian Merchants' Association and the Mill-owners' Association at Ahmedabad.

2 The weight of the evidence as a whole is in favour of uniformity, but there is divergence of responsible opinion as to the pace at which uniformity should be introduced or enforced. The Bombay Chamber of Commerce are of opinion that "uniformity in weights and measures is a matter that will take years to bring about." They would deprecate compulsion, but would advise persuasion and co-operation of local bodies. Some attempt should be made towards uniformity, but it should not be of a penal character. The Bombay Cotton Trade Association and the Indian Merchants' Chamber and Bureau hold more or less the same view. The Karachi Chamber of Commerce, the Bombay Presidency Trades Association, the Bombay Commission Agents' Association and the Ahmedabad Mill-owners' Association are for uniformity. The Bombay Grain Merchants' Association and the Bombay Country Tobacco Trade Association think that the masses in India are so illiterate and so accustomed to their own weights and measures that a uniform system would cause confusion and paralyse trade, and the latter body further remarks that the "remedy would be worse than the disease." There are also several individual witnesses who generally agree in this view. Another set of witnesses would introduce uniformity gradually and without any measures of a penal nature. There are again a few witnesses who would introduce uniformity into a small area, spreading it gradually over the rest of the country.

There is also some evidence pointing out the necessity of the Native States adopting the uniform system that may be introduced into British India.

Apart from the witnesses who want their own local weights adopted for the whole of India, the balance of evidence, especially that of Indians, is in favour of the Railway system of weights which are either familiar to the people generally or are used throughout the Presidency. The Bombay Chamber of Commerce in general terms and the Karachi Chamber of Commerce specifically recommend the Railway system, but the latter make a proviso to the effect that if and when the United Kingdom adopts the metric system, it should also be introduced into India. It is significant that many Indian witnesses of Bombay who use a seer of 28 tolas have recommended the Railway system. Several Europeans, and a few Indians who are residents of towns like Bombay or Ahmedabad, have recommended the adoption of the British or the metric system, but it is clear that they are not much in touch with the rural population. The idea of making the Railway seer (80 tolas) exactly equal to 2 lbs. by reducing its weight by $\frac{1}{80}$ th with a similar reduction in the weight of the rupee or the tola has also been supported by several witnesses, but in this connection it must be remembered that to the witnesses of smaller towns and villages the idea was absolutely new till the Committee actually examined them orally, and their opinion could not therefore be characterized as well-considered. On the whole, there is no doubt that the witnesses generally, and those of smaller towns and rural areas particularly, would prefer the Railway system, without any alteration, to any other system.

As between the British and the metric systems, the balance of evidence is generally in favour of the former, provided that the weight of the rupee is reduced to 175 grains so as to bring the Railway weights into line with the pound. The alteration in the weight of the rupee which would reduce its intrinsic value is not much liked, especially by witnesses in the districts, as they think that it would create difficulties, but they would accept it rather than have no simple connection between the rupee weight and the uniform system of weights

3. As to weights below the tola, it has already been shown in Chapter IV (Bo. 7) that there are special tolas for gold, drugs, etc., only in a few tracts and that these are used side by side with the tola of 180 grains. That these special weights should be retained for jewellers and Indian druggists is maintained by very few witnesses, while the general trend of evidence is in favour of the smaller weights being based on the present rupee-weight. Mr. Ramchand Nathumal, a jeweller who has dealings in several parts of India where these special tolas are used, advocates uniform weights based on the tola of 180 grains.

4. As regards measures of length, the people generally are so familiar with the British yard or its adaptations (18," 24," 27" and so forth), corresponding in some degree with their old indefinite measures, that scarcely any objection has been raised to its adoption as a uniform measure for the whole of India. It would appear, however, that there is a general desire to retain the popular subdivision of the yard into 16 *girahs* (of 2½ inches) or 32 *tasus* (of 1½ inches).

5. As regards area measures, the British yard and its subdivisions in one shape or another being recognized, the only measure to consider is one for agricultural land. The acre is widely known and witnesses who have given evidence on this subject accept it as the unit. Throughout the Presidency, the acre is divided in the Land Records into 40 *gunthas*, and this subdivision is widely known. In Sind, the *farsh* is half an acre. It is difficult to say how a decimal division of the acre would be liked by the people, but such evidence as there is is in favour of the retention of the *gunthas*.

6. As to measures of capacity (dry), these are not used in the Ahmedabad, Broach and Kaira districts, and are used only for domestic purposes in the Panch Mahals. In the rest of the Presidency, they are very largely used. Uniformity in the matter of measures is generally supported by the evidence, evidently the result of the great confusion that exists at present. Of course many of the witnesses would prefer their own measures being extended over the rest of the country, but it seems to be recognized much more than in the case of weights that this is not possible. While the present measures are generally based on a definite weight of one or more kinds of grain, the evidence generally is in favour of a definite weight of water being made the basis. Several witnesses have advocated or suggested the adoption of British measures. A larger number of witnesses would abolish measures altogether, as there is a considerable amount of cheating done with them.

The above remarks, *mutatis mutandis*, apply to liquid measures

7. There is scarcely any evidence as regards measures of cubical contents, and there are practically no such indigenous measures, the British cubic foot being used where required.

8. Considering the localities in which witnesses were examined, and not merely their number, opinions appear to be evenly divided as to whether the sale of the same commodity both by weight and by measure in the same place should be prohibited. There is no evidence to show that in places where such a practice obtains, customers have been allowed no choice.

9. As regards the use of the same term for both a weight and a measure of capacity, the witnesses who recommend its prohibition on the score of its causing confusion are in the minority. The majority of witnesses are of opinion that there is no confusion, as the parties clearly understand whether a certain article will be sold by weight or by measure and that even if some misunderstanding is caused, it is not advisable to legislate on the subject.

10. As will be seen from Chapter IV (Bo. 4 and 8) the use of special maunds and seers for certain commodities is widespread. The saying among grain sellers and grocers, quoted by a Bombay witness, that there are 52 maunds and 56 weights is almost literally true. If we consider vested interests in the different trades which wish to maintain the present confusion of weights as a trade secret for their own advantage and the preponderance of their representatives among the witnesses, the evidence in support of the abolition of these trade variations is remarkably strong. The dissentients urge that the people are accustomed to the weights for certain commodities and their abolition would cause confusion or that abolition may be desirable but is not practicable.

11. Local standards are scarcely recommended. The Bombay Chamber of Commerce think that they may be necessary temporarily, and possibly, even permanently. As regards special standards for special commodities or for special purposes, such as the British weights for export trade or for certain imported or other articles like Europe stores or tea, or the apothecaries' weights and measures for European medicines, there is very little evidence, but such evidence supports the retention of these weights. The question of the retention of the special tolas has already been dealt with.

12. As regards the methods to be adopted for introducing and enforcing a uniform system of weights and measures, the suggestions of the Committee contained in Question 20 are generally approved, subject to the following remarks:—

- (a) This is practically unanimously approved.
- (b) This suggestion is also generally approved. Some witnesses further propose that specimens of weights and measures should also be kept in Municipal and Local Board offices and with *shetyas* of bazaars. A few think that it is not necessary to keep specimens at police stations, or with village headmen or in schools.
- (c) There are no District Gazettes in this Presidency. The suggestion is accepted, and some witnesses would include school-houses and all public places, and would periodically distribute the tables to leading merchants, etc., or would issue them free to the public, the penal clauses being inserted in them.
- (d) The witnesses accept the suggestion, but some of them think that it is not desirable to prohibit the teaching of other systems including foreign systems.
- (e) The Bombay Chamber of Commerce would proceed very cautiously in the matter, and Mr. Metaxa, their representative and agent of Messrs. Ralli Brothers at Bombay, would stamp only authorized measures 10 or 15 years after the introduction of a uniform system. The General Traffic Manager, Great Indian Peninsula Railway, also thinks that this should be done after a certain period of grace. Periodical stamping is recommended by witnesses generally.
- (f) Here again the Bombay Chamber of Commerce enjoins great caution. The stamping of measures free of charge as a permanent measure is recommended by several witnesses, and by others for one to five years, while Mr. Metaxa recommends a period of 10 to 20 years.

- (g) The Collector of Bombay, the Collector of Customs, Bombay, the President of the Karachi Municipality, and the Collectors of East Kandesh and Satara consider this measure unnecessary. The period for which this concession is recommended to extend is six months to five years.
- (h) This affects only a limited class of people, while many witnesses approve of the proposal, others consider it as unnecessary on the ground of expense to Government.
- (i) The Bombay Chamber of Commerce would advise great caution, and Mr. Metaxa would enforce this after 20 years. The other witnesses who approve of the proposal generally recommend that it may be enforced from six months to five years after the introduction of the system.
- (j) The Collector of Customs, Bombay, is doubtful as to the necessity or wisdom of adopting this proposal. Mr. Metaxa thinks this should be done 5 or 10 years after the introduction of a uniform system. The Collector, Nasik, thinks that this restriction should apply only to weights and measures intended for public use.
- (k) The Collector, East Khandesh, does not agree in this proposal, while two witnesses say that import duty should be levied with a view to encourage manufacture of weights and measures in India, and there is no valid reason for any exemption. The period of exemption proposed by several witnesses ranges from one to five years, and Mr. Metaxa recommends 20 years.
- (l) (z) and (11) Several witnesses urge that the sale of weights and measures should be left entirely to private enterprise, while others recommend that their sale should be undertaken by Government for a few years. A few witnesses would restrict sale by Government to outlying areas beyond the scope of private enterprise.
- (m) This is objected to by a few witnesses. Those who agree to the proposal recommend its being enforced 1 to 20 years after the introduction of a uniform system.
- (n) This is generally accepted, and the period of grace recommended generally is one to five years. One witness urges that registration should not be refused if the equivalents in terms of the authorized weights or measures are also specified.
- (o) This is opposed by a few witnesses including the Bombay Chamber of Commerce. The Collector of Bombay and several other witnesses do not recommend the adoption of this measure till a considerable time after a uniform system is launched or till the people are familiar with it.
- (p) The Collector of Bombay thinks that this measure should be adopted after a considerable period, and Mr. Metaxa suggests 20 or 25 years.

13. As regards penalties, destruction or confiscation of unauthorized weights and measures in the first instance and fines subsequently are recommended. Several witnesses think that for the first offence a warning should suffice and that for some time offenders should be leniently dealt with. The maximum amount of fine recommended generally is Rs. 50.

14. As to the agencies to be employed for detection, there are a few witnesses who object to the employment of the Police, but the majority are of opinion that officers not below the rank of head constable or Sub-Inspector may be entrusted with this duty. One witness suggests that no prosecution should be instituted without the sanction of a special officer

appointed in this behalf. The employment of the Revenue staff for this purpose is more readily approved, and the general recommendation is that the officials should not be of lower rank than the *Awal Karkun* or Circle Inspector (Naib-tahsildar and Revenue Inspector in other parts of India). The agency generally recommended for Municipalities is the President, the Secretary and Chief Officer, and by some witnesses, members of the Committee and paid officials on a salary not below Rs. 50. The employment of village headmen is generally approved, and several witnesses also recommended kulkarnis (Patwaris) and committees consisting of non-officials, while a few would have a special trained staff.

15. It is generally agreed that a uniform system will eventually benefit the public as a whole, especially the ignorant masses. According to many witnesses, petty traders will suffer as there will be no trade secrets, but it is also argued that honest trade will benefit. For some time illiterate and ignorant people will be imposed upon.

Effects of a uniform system

CENTRAL PROVINCES AND BERAR.

The Committee visited seven districts. 82 written replies were received from 163 witnesses, but these latter do not include many tradesmen and agriculturists whom several district officers had consulted and whose opinions have been incorporated in the replies. Of the 163 witnesses, 9 are Europeans and 154 Indians; 22 officials and 141 non-officials. 112 witnesses were examined orally, 22 being examined individually and the rest in groups.

Number of witnesses.

2. The non-official evidence is all but unanimous in favour of the adoption of a uniform system of weights. Messrs. Ralli Brothers, who do a considerable amount of business in the province, are of opinion that uniformity will take years to bring about; they deprecate compulsion, but urge persuasive measures and the co-operation of local bodies in the matter. One witness says that the present multifarious weights cause no inconvenience, and is against a uniform system, as it would deprive tradesmen of their profits and would afford an opening to petty officials to harass ignorant people. Some cultivators and artisans consulted by the district officers in Nagpur were divided in their opinion. The Deputy Commissioners, Nagpur, Jubbulpore, Drug and Bilaspur are of opinion that under present conditions uniformity in a vast country like India is not feasible and they would deprecate compulsion. The Deputy Commissioner, Bilaspur, is of opinion that the most that could be done at present would be the standardization of measures in municipal towns. The Deputy Commissioner, Narsingpur, is of opinion that it is impossible to enforce one system all over the country, and he advises such system being enforced only in the principal towns and other trade centres.

Desire for a uniform system

3. As regards the system to be adopted, the evidence in favour of the Railway seer of 80 tolas and the maund of 40 seers preponderates. The chief reasons for this are that the people in this province are familiar with these weights, that the system is simple and admits of convenient binary subdivisions down to the lowest weights required for ordinary transactions and that the whole series of weights are based on the tola or rupee weight and are therefore susceptible of easy check. On the other hand, there is also some evidence of weight in favour of the British or the metric system and opinions seem to be evenly divided as to which of these two systems should be preferred. Two witnesses would introduce the Railway or some other Indian system as a step to educate the people to uniformity and to facilitate the eventual adoption of the metric system. The Deputy Commissioner, Bilaspur, would adopt

System to be adopted.

the British, and the Deputy Commissioners, Nagpur, Jubbulpore and Drug, the metric system, if a uniform system is feasible in India, of which they are very doubtful. Some advocates of the British system have confused it with the Railway system which the British Government have introduced. Several witnesses have either supported or acquiesced in the proposal to adopt the Railway system but to reduce the weights down to the weight of the tola or rupee by $\frac{1}{16}$ th, so that the seer may be exactly equal to two pounds. But the evidence of the petty traders, etc., in this respect should be accepted with caution, as they had not considered this matter till they were actually examined by the Committee. The objections to the alteration of the rupee were the reduction in its intrinsic value (which is important from the point of view of the people who hoard money as so much silver), the confusion and inconvenience that would be caused when the rupee is used as a weight, so long as the old coins are current side by side with the new, and owing to the very small difference, the probability of prices of articles not adjusting themselves to the new weights.

On the whole, the weight of opinion is on the side of the Railway system because it is familiar to the people and because it involves no change in what has always been the fundamental unit of weight, *viz.*, the current coin of the realm.

As regards weights below the tola, it has been pointed out in Chapter IV (C. P., 6) that in a very few places the tola for weighing drugs, gold and silver and other valuable articles is different from the rupee weight, and that even in those places the rupee weight is used for some or all of the articles. There is practically no opposition to the tola or rupee weight being standardized throughout India for weighing all articles.

4 As to measures of length, as already shown in Chapter IV (C. P. 10),
Measures of length the British yard is widely known and used, and such witnesses as have given evidence in this matter are practically unanimous in recommending the adoption of the yard or half-yard measure (or a *hath* of 18 inches) as the unit; but they are generally for the retention of the popular subdivision of this measure into *girahs* of $2\frac{1}{2}$ inches each. The foot and the inch with which the people are to some extent familiar are not objected to, so long as the above binary subdivisions are retained.

5. The same remarks apply, *mutatis mutandis*, to the area measures. As
Measures of area. regards agricultural land, the witnesses who have given evidence on this point approve of the adoption of the acre, and the Central Provinces witnesses also approve of a decimal division of the acre, as at present. But in Berar, the acre is divided into 40 *gunthas* (1×1 chain of 33 feet each) and none of the witnesses of Akola (the only centre visited by the Committee in Berar) has expressed any opinion as to the desirability of a change to a decimal division of the acre.

6. Coming to measures of capacity for dry articles, uniformity is desired
Measures of capacity (dry) by the witnesses generally. Two witnesses think that there would be some difficulty in introducing uniformity, but one of them says that this difficulty would be removed by Government replacing the old measures free of charge. Many of the witnesses who advocate uniformity, however, want their own measures introduced elsewhere, so that their recommendation practically amounts to local standardization. These witnesses would have the capacity of the measures based on a definite quantity by weight of a particular kind of grain, as at present, while others realize that the fixation of capacity by the weight of water would be a more scientific method. Some witnesses again would abolish the use of measures entirely, while one would have grain and oil sold by weight only, but this recommendation is a counsel of perfection. A few witnesses either approve of or have no objection to the British measures being

adopted, but generally measures based on the Indian system of weights are recommended. Practically all witnesses recommend the custom of using measures heaped being allowed to continue, either because this method is easier or because the method of striking allows of malpractices.

7. The above remarks, so far as they are applicable, hold good for liquid measures. Several witnesses (cultivators, artisans, etc.) in the Nagpur district, consulted by the district officers, were of opinion that the same measures should be used for dry articles as well as liquids.

8. There are practically no indigenous measures of cubical contents, and the few witnesses from rural areas who are interested in the matter have raised no objection to the adoption of British measures, while the townspeople use these measures.

9. Opinions are fairly evenly divided as to whether the custom of selling the same commodity both by measure and by weight should be prohibited. The general impression is that the tradesman adopts the one or the other method according as it suits him, to the disadvantage of the customer. While this may be true in some cases, it appears that the general desire of customers, with the competition that undoubtedly exists among tradesmen, especially in towns, would certainly regulate a custom. Then the tradition of popular suspicion of all tradesmen as a class is not peculiar to India, although perhaps it is more pronounced than in more advanced countries, as ignorance breeds suspicion. Further, amongst a people suspicious by nature, a desire for change in the abstract suggested by the belief that they would get the better of their neighbours is a very different thing from such abstract proposition taking a concrete form. Many of the advocates for the abolition of the present practice would probably resent a change by legislation as unnecessary interference with an old custom.

10. Regarding the question whether the use of the same term for a weight and for a measure of capacity causes any confusion, the bulk of the evidence is in the negative and is against any interference in this respect. The evidence as a whole shows that the parties to a transaction exactly know whether a particular commodity is to be sold by weight or by measure and the custom in any particular locality is more or less fixed in this respect, so that there is no likelihood of any misunderstanding. The Deputy Commissioner, Jubbulpore, says that no confusion is caused and adds "Theoretically, no doubt it would be better to separate terms. Practically, I do not think that it matters."

11. Considering the interests involved, and the widespread net-work of multifarious maunds and other weights for various commodities, the evidence in favour of abolishing such weights is remarkably overwhelming. It is suggested that while the proposal is favourably received, the difficulties would be insuperable; that tradesmen would lose their profits and that no allowance for wastage would be possible. But apart from these notes of warning, inevitable in connection with any reform, it is clear from the evidence generally that the measure would be welcomed by the bulk of the population.

12. As regards local standards, the general opinion is that they should not be allowed, temporarily or permanently, the principal reason being that they would retard the progress of a uniform system throughout the country. Messrs. Ralli Brothers are of opinion that "it may and probably will be necessary to prescribe local standards temporarily, or possibly, even permanently."

The Deputy Commissioner, Drug, who considers a uniform system for India impracticable, is also of opinion that local standards would be necessary as a temporary measure.

The Agent at Raipur of Messrs. Bansilal Abirchand, one of the biggest banking firms in the Central Provinces, considers that local standards would be necessary as a permanent measure. The Deputy Commissioner, Seoni, says that no permanent local standards would be necessary "if the uniform standard or the unit approaches fairly nearly to some standard or unit already recognized," and looking below the surface, this is really what the evidence as a whole practically amounts to, especially so in the case of measures of capacity, for the bulk of the witnesses have advocated the Railway system which is the predominant system in the province, and the adoption of their own measures of capacity.

13. There is scarcely any evidence as regards allowing the use of special weights for special trades. It has already been shown in Chapter IV (C. P., 4 and 18) that the British pound is largely used for imported and certain other articles, and also the gallon, but to a much smaller extent. It may fairly be presumed that the witnesses did not contemplate the total prohibition of these weights and measures. The jewellers' special tola weights in some tracts, which are also generally used for Indian drugs, have already been referred to, but apparently no difficulty is anticipated in the case of these commodities, the rupee weight being also concurrently used for these articles. The case of precious stones and pearls is a special one and is outside the ken of the witnesses generally.

14. Subject to the following remarks, the methods of introducing and enforcing a uniform system, outlined by the Committee in Question 20, have been generally approved by the witnesses—

- (a) The Deputy Commissioner, Nagpur, who maintains that "the introduction of a uniform system into India is an almost impossible undertaking," goes on to say that "in practice it may prove impossible to establish such a concert of action."

Use of authorized system by Government, etc.
- (b) The Deputy Commissioner, Bilaspur, would exclude the village headmen, because it is unnecessary to supply them with specimens of weights and measures and the Deputy Commissioner, Narsingpur, who would introduce a uniform system only in towns, would exclude villages as the cost would be large. Another witness negatives the whole proposal as unnecessary. The Deputy Commissioner, Nimar, and two other witnesses suggest the addition of the offices of Municipal Committees, District Councils, Local Boards, Sanitation Committees and Cantonments and Courts and Excise warehouses.

Supply of specimens of authorized weights and measures to village headmen, etc.
- (c) Three witnesses suggest the addition of all public places and schools, and the supply of these tables to patwaris and touring officers, these latter being required to explain the tables to villagers.

Tables of the authorized system.
- (d) Some witnesses urge that the teaching of the old systems of weights as also of foreign systems is necessary.

Teaching of the authorized system in schools.
- (e) One witness considers the stamping of authorized weights unnecessary while another fears that the poorer tradesmen will be put to inconvenience by this system.

Stamping of authorized weights and measures.

- (f) This proposal is generally accepted (with one dissentient). The period suggested by several witnesses for Government stamping measures free of charge is six months to ten years, while one witness would have permanent exemption from fees. Another witness thinks that petty officials will harass the poorer tradesmen.
- Facilities and fee for stamping, etc.
- (g) Some witnesses consider this concession as either unnecessary in itself or because it would entail considerable expenditure on Government.
- Free supply
- Alteration of weighing machines.
- (h) The proposal is not approved by several witnesses.
- (i) The Deputy Commissioner, Akola, considers that this proposal is quite feasible in Berar, where the cotton markets are under Government, and grain markets and weekly markets are under the control of Municipalities or District Boards. He further remarks that if uniform weights and measures are used in these places, the people down to the agricultural labourers will soon get to know and understand such weights and measures. One witness says that this rule would cause hardship to the poorer tradesmen, while another would confine its application to towns only. The period suggested for bringing such a rule into operation is six months to ten years. One of the witnesses thinks that it will take the people a generation or two to get used to a new system while another says that no arbitrary period should be fixed.
- Use of authorised weights and measures in markets.
- (j) The Deputy Commissioner, Bilaspur, considers that this measure would be far too radical a change. The Deputy Commissioner, Jubbulpore, deprecates this step which he thinks would cause great discontent, and he advises that the use of authorized weights and measures should be spread by persuasion and by subsidizing it.
- Import, manufacture and sale.
- Import duties.
- (k) This is agreed to except by two witnesses.
- (l) (i) Some witnesses approve of this suggestion as necessary only for a certain period while two consider sale of weights and measures by Government as unnecessary.
- Sale by Government at cost price.
- (ii) The Deputy Commissioner, Akola, considers this unnecessary and even objectionable. The Deputy Commissioner, Narsingpur, and two other witnesses would leave the sale of weights and measures entirely to private enterprise.
- Sale by Government at reasonable prices.
- (m) The Deputy Commissioners, Nagpur, Jubbulpore, Bilaspur and Akola, are against this proposal, and one of them (Bilaspur) characterizes it as "revolutionary" and not possible to enforce. Several other witnesses also more or less object to the proposal, while one suggests that documents in terms of unauthorized weights or measures should be admitted in evidence on payment of a penalty.
- Admission of documents by civil courts.

(n) There is very little evidence on this suggestion which, however, has not been objected to.

Registration of documents.

(o) The Deputy Commissioners, Nagpur, Jubbulpore, Bilaspur and Narsingpur, condemn the proposal generally. The Deputy Commissioner, Bilaspur, would restrict the application of such a rule to Municipalities only. The Deputy Commissioner, Jubbulpore, recommends the use of unauthorized weights and measures being licensed, the license fee being gradually raised till it becomes prohibitive. The Deputy Commissioner, Akola, suggests that it should be left to Local Governments or local bodies to apply such a rule to any area after giving fair notice. One witness says that those unable to buy stamped weights and measures should be allowed to use their own, provided they are up to the standard. Some witnesses approve of the suggestion subject to a considerable amount of time, say, ten years being allowed from the date of introduction of a uniform system. The period generally suggested ranges from 6 months to 3 years.

15. As regards the punishments for the use of unauthorized weights and measures suggested in Question 21, the Deputy Commissioners, Nagpur, Jubbulpore, Bilaspur and Narsingpur, as also Messers Ralli Brothers deprecate penalties of any kind. But generally the penalties suggested are approved, fines ranging from Rs. 2 to Rs. 50 being recommended as a last resort.

16. As regards the agency to be employed for the detection of cases, a few witnesses consider the present agencies sufficient. But the majority are emphatically against the employment of the police for this purpose, and this is the opinion of those who seem honestly to desire a uniform system. The other agencies recommended are Revenue officials not below the rank of Revenue Inspectors, malguzars and mukaddams in the Central Provinces and patels in Berar, committees consisting of respectable merchants or tradesmen, members of Municipal Committees, Octroi Superintendents, District Councils and Local Boards in the Central Provinces and District and Taluq Boards in Berar. According to a few witnesses, the Excise staff and patwaris may also be employed. Witnesses also urge that no low-paid officials should be entrusted with this work.

17. Coming to the question of how the introduction of a uniform system would affect various classes, the opinions are, as may be expected, of a speculative character. Briefly, some think that large or small traders or both would suffer, others that they would eventually benefit. The general trend of the evidence is that agriculturists, etc., who are not familiar with the system that may be prescribed, would be cheated, but that they will eventually benefit most by uniformity.

No inconvenience is anticipated from a uniform system in connection with the various existing sizes of gunny bags.

BURMA.

The towns actually visited were Akyab, Bassein, Bhamo, Henzada, Magwe, Mandalay, Moulmein, Myingyan, Pegu and Rangoon, while evidence was received from Pakokku, Prome, Putao, Pyapon, Sagaing, Shwebo and Toungoo. In all 284 written replies to our questions were received, of these 46 (21 from Europeans and 25 from others) were from officials and 238 from

non-officials (18 from Europeans, 140 from Burmans, Talaings or Arakanese, 55 from Indians and 25 from Chinamen). 247 persons were examined orally, including 123 who had sent in written replies; for the most part these persons were examined in groups, but 20 were examined individually.

Great interest was shown in the subject of the Committee's inquiries in this province, and the officials responsible for preparing evidence and collecting witnesses for us had evidently given the matter careful attention in spite of the time allowed having been distinctly short.

2. Opinion is practically universally in favour of Government taking action

Possibility of a uniform system to enforce a standard system of weights and measures throughout the country, practically the only objector is a Burman paddy broker of Henzada who pleads that this would deprive the middleman of his profits; the very thing which is urged as one great advantage by many witnesses. There is very little genuine opinion in favour of having one system for India and Burma, it being pointed out that there is very little direct communication between the two countries, and such as there is of the nature of wholesale trade and by sea. There is, however, a certain amount of opinion in favour of doing this and the majority of those who favour such action consider that the introduction of the British system into both countries is the most hopeful method. There is also some but less opinion in favour of introducing the metric system into both and the chief supporter of this view is the Chamber of Commerce of Rangoon which believes that such action is both "practically and politically possible." They are not, however, universally supported even by the European merchants of Rangoon, while those of Bassein as well as some of those of Rangoon advocate the British system, while those of Moulmein favour the standardization of the existing Burmese weights with no attempt at one system for India and Burma. The demand for a uniform system for the two countries cannot be said to be strong even among European merchants. Save in Akyab there is the strongest opposition to the introduction of any Indian system, e.g., the Indian Railway weights into Burma.

3. The introduction of the British system, apart from whether it is or is not introduced into India, is urged by a

British system not introduced into India, is urged by a few witnesses, but not with any force. Pegu is apparently the most in favour of, or possibly a more correct description of the attitude would be, less against such a course. The Director of Agriculture and Registrar of Co-operative Societies (examined at Mandalay) advocate the mere authorization of the British system, and the leaving of this and the indigenous Burmese system side by side, Government to recognize both, but apparently to take no action, such as testing or stamping weights of the one system and not of the other in favour of either. Such action, they consider, combined with the introduction of a pure weight system on the British pound in the paddy trade, would result in the natural death of the Burmese system in the course of a decade or two. They further lay stress on the spread of the knowledge of the pound among cultivators resulting from intercourse with the exporting firms of Rangoon in consequence of the large proportion of agricultural produce grown for export. The evidence of witnesses consulted on the suggestion that the British system should be introduced by being used in Government and quasi-Government transactions and on railways, by sample weights of the system being supplied to all offices, village headmen, etc., and by British weights alone being tested and stamped while viss weights were left alone does not favour the idea.

4. As regards the necessity and advisability of a change of coinage if the

Change of coinage if new system introduced. British or metric system were introduced, the general opinion seems to be that if one of these systems were to be introduced a change of coinage with a view to

giving a direct relation between the weights in use and the weights of the coins would be advisable though such was not considered absolutely indispensable. If the pound were adopted, preference seemed to be for the $\frac{1}{2}$ lb. rupee, if the metric system, a decimal system similar to that in Ceylon was preferred. On the whole, there did not seem very great opposition to such a change of coinage, nor did it seem to be feared that the alteration would affect the value of the rupee ; but the proposal was certainly not popular.

5. As special reasons against any fundamental change in the weights used at any rate in retail trade, it is urged that General opinion favours standardization of the Burmese system of weights. conditions in Burma are different from those in India in that practically every household does a certain amount of retail trade, and, therefore, possesses weights, so that the number to be replaced is per 1,000 of the population very much greater than it is in India ; and also that there are a very large number of female traders who are specially conservative. It is also urged that the system in force in the greater part of Burma (practically all except Akyab) is much more uniform than it is in India, and that hence there is less internal reason for any change. Opinions may, therefore, be summarised as distinctly against any change of system, such as the introduction of the British, metric or Indian Railway systems would entail ; but there is a strong desire for the standardization and enforcement of the Burmese system of weights. Akyab, however, forms an exception : in that district as also in North Arakan and the Cheduba township of Kyaukpada Indian weights predominate though not to the total exclusion of the viss.

6. For length, the British yard is unanimously approved as the fundamental unit, to be subdivided, however, according to the Burmese system as well as into feet and inches, thus, the *taung* should be fixed at 18", the *htwa* at 9" and so on.

Measures of area

7. For area, the acre subdivided into hundredths is unanimously approved.

8. As regards the basket, the great desire is for a standard of some sort, it does not so much matter what The majority of opinion is in favour of an 8-gallon basket, at present recognized as more or less a standard. The Rangoon Chamber of Commerce, however, is averse to changing from the 9 to the 8-gallon basket, though their Secretary admits that they would "of course adopt this if ordered to, just as we deem it certain the people would adopt the metric system if directed so to do." The representative of one of the chief European paddy firms in Rangoon admitted that the only difficulty resulting from such a change would be that "certain tables would have to be recalculated once for all." The European merchants of Moulmein expressed themselves as quite ready to accept an 8-gallon basket, as also did those of Bassein, where, however, the more important objection that it might entail a larger labour bill was put forward. The majority of non European merchants in Rangoon appear to consider the standardization of the basket the important point, and to be ready to accept an 8-gallon basket, though one preferred a 9-gallon one. In Myingyan and Pegu a preference for the 9 gallon basket was expressed, but in both places the general opinion was that an 8 gallon one would be far better than the present confusion. Elsewhere, and especially in Mandalay where a conference of Co operative Societies representing 15,000 cultivators were of this opinion, preference for the 8-gallon basket was expressed, it being urged that this size is nearer the real Burman basket of 12½ visses of paddy.

It may, therefore, be said that throughout Burma (as opposed to Arakan) there is a very strong desire for the standardization of the basket, and that the majority of opinion favours an 8-gallon basket. In Akyab a 4 gallon basket is preferred. There is also a certain amount of opinion in favour of standardiz-

ing the weight of paddy in the basket, as is done in respect of bushels of wheat in England.

9. Measures of limited capacity practically do not exist; all that is desired is that it be laid down that a measure purporting to contain some definite weight of liquid should really do so.

Measures of capacity (liquid)

Measures of cubic content.

10. For cubic content opinion unanimously favours the British measure

11. Simultaneous sale of the same commodity by weight and measure occurs to but a very slight extent, practically the only instances being due to the preference of Indians for retail sale of food-grains by weight which leads to rice being sold to them by weight in bazaars where they are numerous, such as Akyab, Pegu, Rangoon, etc. No opinions adverse to the continuance of this practice were received. The system by which food-grains, etc., are dealt in by the basket which is supposed to hold a certain weight was fully discussed in considering that measure (Chapter IV Bu., 13 and 14). One or two witnesses did suggest that the use of measures be abolished for food-grains and one or two advocated prohibition of weight. There was a good deal of opinion in favour of paddy being dealt with wholesale by weight. The same term is practically never used to denote both a weight and measure in Burma, the only approach to anything of the sort is the use of certain measures bearing the names of certain weights which are made so as to hold those weights of certain definite liquids, such as oil or milk. As, however, the measure is made for one liquid only and is merely used to avoid the necessity of weighing on each occasion, it being, however, always open to the customer to insist on a check by weight, the vessel so used can scarcely be called a measure in the ordinary meaning of that term. No objection to this practice was urged though a few witnesses in Magwe, Mandalay and Rangoon requested that steps be taken to enforce such measures holding what they purported to.

12. There are practically no special weights for special commodities in Burma, the only examples brought to our notice being special baskets for groundnuts and sesamum. To the abolition of these there was no opposition. In Bassein, Mandalay and Pegu requests for standard jewellers' weights were made, though the Collector of Rangoon deemed such unnecessary.

13. Comments on the proposals for enforcing the standard system are not very numerous, most of the witnesses contenting themselves with a general approval of all. The comments and suggestions made are :—

Methods of introduction.

(a) The President of the Rangoon Municipality would add also 'markets controlled by municipalities.'

(b) The Director of Agriculture and the Deputy Commissioner of Pakokku consider that it would be too expensive to supply specimens of weights, and measures to every headman and that it would be sufficient to supply them to all public offices and bazaar gongs and market superintendents. On the other hand the Registrar of Co-operative Societies and the witnesses orally examined at Mandalay were strongly in favour of every *thugyi* having a standard basket. From Henzada comes a suggestion that Co-operative Societies should have a set of standard weights and measures, and from Rangoon one in favour of all *hpongyi-kyauangs*. The Assistant Registrar of Co-operative Societies proposes that an acre plot be marked out in every village as a means of familiarizing people with the acre.

- (c) The proposals are to print tables of standard measures on all school exercise books (Akyab); and to have these tables in the *Thugyi's* almanac and in the village manual (Mandalay); while from Bassein it is urged as specially necessary that vernacular notices be in easily intelligible language.
- (d) It is urged from Bassein and Rangoon that schoolboys should be taught the weights and measures of other countries as well, the question having been misunderstood to mean that these also should not be taught.
- (e) and (f) Several have expressed special approval of Government stamping weights.
- (g) From Akyab it is objected that the expenses of replacing weights would be too great.
- (h) From Bassein it is urged that it is unnecessary for Government to alter weighing machines.
- (i) The Deputy Commissioner of Amherst and the representative of the Bombay, Burma Trading Corporation in Rangoon would leave the supply of weights to private enterprise; on the other hand the Chamber of Commerce at Rangoon who propose the metric system advocate a regular Weights and Measures Department the cost of which would be provided by stamping fees and the profits on the sale of weights.
- (m) and (n) The Deputy Commissioner of Amherst does not approve of these proposals.

The only additional proposal is from the Trading Company, Rangoon, that foreign exporters should be required to note on all parcels sent into the country the weight thereof in standard weight in both English and vernacular, and that this regulation be enforced by the Customs staff.

14. As regards period only a few witnesses have expressed an opinion; the most general view seems to be that if it be merely a question of enforcing the use of standard Burmese weights, one year would be enough. Some say two. One witness who advocated the metric system thought two years enough for that.

15. General opinion favours destruction and confiscation for the first offence, the same with fine for the second and the same with fine or imprisonment or both for the third or subsequent offence. A headman in Moulmein considered that wealthy offenders should be imprisoned without the option of a fine, as being probably indifferent to a fine. The Chamber of Commerce suggests the publication of convictions in the Government Gazette. Several urge special leniency to begin with.

16. As regards staff, general opinion favoured the employment in rural areas of the Land Revenue staff down to an Inspector of Land Records, though one or two would not go below a *myook*. As regards urban areas, the work of enforcing the use of the standard weights and measures should devolve on the municipal or town staff. The bazaar-goungs and market superintendents are advocated by all, also generally the superior officials of the municipal staff such "as may be approved by the Board." As regards the Police, there is a considerable body of opinion adverse to their employment at all, this is stronger as regards their employment in rural areas than in urban. Witnesses who have considered the point are practically unanimous in recommending that powers in respect of weights and measures be restricted to officers of rank not below Sub-Inspector, though there are one or two exceptions; thus, one or two would extend powers to a head constable, and a landowner of Magwe thinks any Police official might exercise powers, but he is almost solitary in this opinion save in so far as he is supported by the Deputy Commissioner of Pegu who considers that any Police or Revenue official might exercise powers provided that orders

for confiscation or destruction of weights were only issued by a Magistrate. In Pegu generally there appears to be the least distrust of the Police. Excise Officers down to the rank of Inspector are fairly generally approved. For rural areas, all, with the solitary exception of the Collector of Rangoon, are of opinion that the working of any Act on this subject should be mainly entrusted to the village headman (*thugyi*). It is suggested that he be given powers to fine under the Village Act and that tables of weights and measures be printed in his almanac and in the Village Manual. It is also suggested that the block-elders and ward headmen, the *ywa-goung* and *ywa-ot* should have powers of inspection, etc., and in Rangoon it is suggested by one witness that the *ayat-luggys* be employed and in Moulmein the *so-cin-goungs*. The Deputy Commissioner of Henzada suggests that the provisions regarding searches be the same as those in Excise cases. A few witnesses have suggested a special establishment, the chief of these is the Chamber of Commerce of Rangoon; three witnesses of Bassein propose a Special Inspector.

17. The general opinion is that a uniform system would be of great advantage everywhere except the middleman whose occupation would probably be largely gone and certainly a considerable portion of his gains. The standardization of the basket would be of great assistance to the cultivator as enabling him to deal direct with the exporting firms. Any change in the system of weights was not thought likely to cause inconvenience so far as regards gunny bags save only in Akyab, where the Deputy Commissioner reports that "European firms agree that any alteration would cause them the greatest inconvenience in this respect."

ASSAM

Three districts in Assam—Cachar, Kamrup and Sylhet—were visited by the Committee or a portion of it and written replies to the Committee's questions were received only for these districts. 27 written replies were received in all, 6 from officials and 21 from non-officials; of these 3 officials and 3 non-officials were Europeans. The Committee also examined orally 7 groups of witnesses, the size of a group varying from 3 to 12 and the total number of witnesses examined in groups being 48.

2. All the witnesses in Assam are in favour of a uniform system of weights and measures throughout India. The reasons given are that it will minimize uncertainties and inaccuracies; that it will do away with the difficulty now felt in ascertaining and comparing prices of the same commodity in distant places; that it will facilitate the wholesale merchants' calculations and that it will lessen the opportunities for cheating by unscrupulous dealers. One official witness recommends that the system should be introduced gradually as the people will not be able to give up their old customs easily, while another considers that the introduction of a uniform system should be postponed until such a system has been adopted and enforced in the United Kingdom and that system should then be adopted if found convenient for India.

3. The predominant opinion amongst witnesses in Assam is that the Railway system of weights should be made the uniform system for India. This is the system generally in force in Assam; so the people are familiar with it. It is urged that as Bengal and Assam are more densely populated and more advanced than the rest of India and as the rest of Northern India is familiar with the system, it is the most suitable for adoption.

4. One group of witnesses orally examined is in favour of the reduction of the tola to 175 grains combined with the Bengal table of weights. Another group is prepared to accept a seer of 100 tolas, but prefers the Railway system.

5. One witness recommends the adoption of the metric system as it is already in use in most civilized countries ; Metric system two other witnesses recommend its introduction when adopted by Great Britain. Another would adopt the metric system in preference to the British system if the Railway system is not adopted. On the other hand, the Collector of Kamrup is opposed to its introduction as it would involve a violent change of existing weights or a new system of nomenclature.
6. A few witnesses of Assam recommend the adoption of the British system on the grounds that Indian weights and measures can be brought into exact British system. relation with them by very slight modification, that the greater portion of India is under British sway and British trade is likely to predominate, that the people are fully acquainted with it, and that it approximates more nearly to Indian practice and is more natural to Indian mensuration and methods of calculation. One witness would adopt it if the metric system cannot be introduced, while another group prefers it to the metric system as easy to understand if the Railway system cannot be introduced. On the other hand, another group objects that it will be difficult for the masses to understand the British pound.
7. The prevalent opinion in Assam is against the alteration of the rupee if the British system is introduced, as the Alteration of coinage rupee is taken by everyone as an honest weight of one tola and any alteration will facilitate counterfeiting and lead to cheating and confusion.
8. Two groups of witnesses want the local systems of measurement of land maintained as the acre is not Length and area. convenient and as the local measurements are very complicated and any new standards will cause confusion and would not be understood by landholders. The only two other witnesses who have expressed an opinion regarding measures of length and area are in favour of the English systems.
9. Witnesses in Assam state that either the British measures of capacity (quart, etc.), or a system based on the Measures of capacity. measure holding so many seers of 80 tolas of water would be suitable ; but one group wants a five-seer one
10. No suggestions have been made by witnesses in Assam regarding Cubical contents measures of cubical contents.
11. Two kinds of weights are used in some of the neighbouring localities for dealing with such commodities as rice, Special weights and measures. paddy, pulses, jute, chillies, ghi, lime and limestone. The reasons commonly assigned are local custom, allowances for wastage, dirt, dryage or shortage and the adoption of modern methods. Generally, it is said that there will be no objection to abolishing special weights and measures, but it is stated that dealers and consumers will be losers to some extent as the wholesale prices will not alter and dealers will add to the retail prices. One witness would make an exception in favour of jute as it becomes light by drying up. One witness recommends the retention of special weights for gold, silver and medicine permanently, while two others recommend the local standards.
12. Grains, rice, pulses, oil and milk are sometimes dealt with by weight and sometimes by measure in Assam. Use of weights and measures for same commodity Witnesses generally take the view that this double practice should be stopped as the measure holds more or less according to the cleverness of the measurer ; as measures are inaccurate ; as purchasers cannot test the correctness of measures and as traders keep measures of different sizes for buying and selling and there is, therefore, confusion and fraud. Only three witnesses are in favour of the continuance of the practice on the ground that prevention of it will cause inconvenience to the

poor cultivating classes. On the other hand, two groups specifically suggest that measures of capacity must be abolished.

13. In Assam, the same name is sometimes used both for a weight and a measure; but no confusion is generally said to arise from this practice as it is well-known except to strangers. Generally, the witnesses prefer that the same term should not be used both for a weight and a measure.

Use of same name for weight and measure.

Means of introduction.

14. (a) No objection has been raised in Assam to this suggestion.

(b) No objection has been taken to this proposal. On the other hand, it is suggested that they should also be supplied to leading zamindars, merchants, traders, and shopkeepers, to one or more toll-collectors in every market and also to post offices, dispensaries, local board officers, municipalities and selected members of the village panchayat.

(c) Witnesses in Assam approve of the proposals regarding the publication of tables of weights and measures. It is further suggested that tables should be hung up in local markets and village schools and should be published as standing matter in vernacular newspapers and as widely as possible.

(d) The suggestion that the use of authorized weights and measures and no others should be taught in all recognized elementary schools is approved, but one witness would also have foreign weights taught.

(e) All witnesses of Assam except one approve of the proposal that the Government should stamp only authorized weights and measures. Four witnesses consider that no fees should ever be charged by Government for verifying and stamping weights and measures. The other witnesses, however, approve of the proposal that no fees should be charged for a certain period. One witness suggests that weights and measures should be re-stamped every five years.

(g) Two witnesses of Assam consider this unnecessary. Other witnesses, however, approve of this suggestion.

(h) One witness considered this unnecessary but this suggestion is approved by other witnesses.

(i) All witnesses in Assam approve of the proposal.

(j) The Deputy Commissioner of Cachar is the only witness in Assam who disapproves of the suggestion. One witness, however, states that the Government need not interfere with the manufacture and sale of weights and measures.

(k) The Deputy Commissioner of Kamrup does not consider this necessary. Other witnesses of Assam have approved of this suggestion.

(l) The proposal that Government should sell authorized weights and measures has received general approval in Assam but one witness considers that they should be sold at cost price only as a temporary measure and that Government interference with private trade is to be deprecated. He suggests that Government should sell wholesale at cost price to accredited private traders and retail at a reasonable profit only. Other witnesses are in favour of the proposal that the Government should sell at a reasonable profit and suggest that the sale should be done through post offices, village headmen or head panchayats.

(m) and (n) The Deputy Commissioner, Cachar, is the only witness in Assam who disapproves of the suggestions; other witnesses approve of the proposals. The Deputy Commissioner, Cachar, disapproves of penal legislation altogether.

(o) All the witnesses in Assam except two approve of the proposal that the use of unauthorized weights and measures should ultimately be illegal throughout India.

15. The periods which must elapse before the various measures can be adopted for introducing a uniform system of weights and measures are estimated at from six months to 16 years by witnesses in Assam. Six months or one year appear to be the favourite periods unless the British system is to be introduced. In this case, three groups of witnesses estimate that its introduction will take from 5 to 15 years and one group states that it will take 40 or 50 years to replace the existing systems entirely.

16. The Deputy Commissioner of Cachar is the only witness in Assam who disapproves entirely of penal legislation; otherwise the proposal that the penalties for failure to adopt the prescribed system should be destruction, confiscation and fine is approved; but one witness does not consider confiscation desirable and others consider that a warning or simple destruction or confiscation will be sufficient for a first offence. One witness suggests that imprisonment should be a substantive penalty for a second offence.

17. Little objection is taken in Assam to the suggestions in the Committee's questions regarding the agencies to be employed in detecting cases of the use of unauthorized weights and measures. A few witnesses including two groups disapprove of the employment of the Police, while another would allow the Police to interfere only on complaint; others would not allow any Police officer below the rank of Sub-Inspector or head constable to interfere. Objection is taken to the employment of the Revenue Department only by the Deputy Commissioner, Kamrup, while others would only allow officials of the standing of kanungo, Excise Sub-Inspector or Special Deputy Collector to detect cases. The employment of municipal officials is generally approved, the municipal over-seeer being usually mentioned as the lowest official to be empowered to detect cases. The Deputy Commissioner of Sylhet would not employ the village headman for this purpose, while the Deputy Commissioner, Cachar, would only empower selected village headmen. The employment of the following authorities or persons is also suggested: village panchayats, members of Local Boards, Sub-Inspectors of schools, owners of markets and all officers of different departments.

18. The general opinion in Assam is that the effect of the introduction of a uniform system of weights and measures would be beneficial to all, though it might cause temporary inconvenience as ignorant classes will not be able to understand how to convert the new weights in terms of those to which they are accustomed.

19. Witnesses in Assam suggest that standard weights should be supplied by Government or manufactured by companies recognized by Government, that in posting parcels the sender should be required to enter the weight of the parcel in terms of the authorized weights and that medical institutions should issue instructions in respect of patients in harmony with the authorized weights.

NORTH-WEST FRONTIER PROVINCE.

Two districts (Dera Ismail Khan and Peshawar) were visited, and in addition written evidence was received from Bannu. 33 written replies were received, 5 from officials (3 Europeans), and 28 from non-officials. 409 persons were examined orally in five separate groups, of these 18 had sent in written replies. A considerable amount of interest was taken in the subject of our inquiries, and the replies received showed that care and attention had been bestowed on the matter by the officials responsible.

2. With one exception, opinion is universally in favour of a uniform system of weights being enforced. This one exception is one member of a group examined

Uniform system generally favoured.

at Peshawar (a Peshawar tea merchant) who fears lest there should be loss of profit to traders if the different weights in force in various parts of the country were to be done away with. One other trader goes no further than to say that there is "no objection" to a uniform system. All others view it with favour. The great majority recommend the enforcement of the Indian

Railway weights which are often referred to as the "British system," or British weights, through their having been introduced by the British on annexation as the uniform system of weights, and this opinion is the more striking when it is remembered that in the three districts from which evidence has been received the use of these weights is practically restricted to the railways (which are not numerous) and to Government transactions. The ordinary seer in common use is of 100 or 105 tolas. It is, therefore, of special importance to examine alternative proposals or objections. A group of traders in Dera Ismail Khan prefers the 100-tola seer urging that a change to the 80-tola one might affect trans-frontier trade, they receiving produce by that seer from Afghanistan and selling by the 80-tola seer in the Punjab, making their profit by the difference in the weight. They fear also "some inconvenience as regards internal trade," but agree that the chief thing is uniformity. A zamindar of Peshawar expresses a similar fear. Another expresses a preference for the Peshawar weights but has "no objection" to the Railway weights. Some members of a Peshawar group who are in favour of the Railway weights fear there may be some difficulty in adjusting prices and ask that special efforts be made to induce shopkeepers to lower rates in proportion to the decrease in the weight of the seer. These are the only objections urged against the 80-tola seer amongst the opinions of 63 persons received by the Committee.

3. There is a certain amount of opinion in favour of, or not strongly against, the reduction of the weight of the tola and therewith also of the rupee, seer, etc., by $\frac{1}{8}$ part. This proposal is supported by the Deputy Commissioners of Bannu, Dera Ismail Khan and Peshawar, but the first named states that general opinion is against any alteration of the rupee, and though the witnesses to some extent favoured the idea, there is on the whole a decided feeling against any such alteration. This would be less were it possible to alter the weight without reducing the amount of silver, or if the tola and rupee were raised to $\frac{1}{2}$ lb., but there was even then a feeling of objection based on the confusion in small weights that was anticipated.

The Deputy Commissioner of Peshawar was under the impression that the pound was equal to 30 rupees in weight, and so apparently were some of the witnesses; he only recommends reduction of weight if this is possible without altering the amount of silver. The proposal met with no support among the Peshawar witnesses.

One witness went so far as to say that there would be "no necessity to introduce and enforce any measure if the seer of 80 rupees were adopted as the standard weight. Every person will welcome the said weight."

4. For a measure of length, opinion is universally in favour of the yard, to be subdivided into 16 girahs as well as into feet and inches.

5. For areas, the acre is widely known, but is not subdivided decimally. It is generally agreed that if areas were recorded in the papers in acres and hundredths thereof, side by side with the present method, there would be no objection to requiring them to be so recorded in deeds and suits, and that in time the new notation would be learnt. One group of witnesses fear some trouble as "there is no word to represent the hundredth of an acre," and as there might be mistakes in the placing of the decimal point.

6. A desire for standardized measure of dry capacity is expressed wherever dry measures are to any extent in use. One Peshawar group advocates total abolition as also one or two witnesses in their written replies to Question 9, but

the general desire in Dera Ismail Khan is clearly for standardization. In that district the *topa*, it is said, should be such as to hold about five 80 tola seers of wheat, but one of about the size of a gallon or such as would hold about 5 seers of water would be accepted. As regards shape, opinion naturally favours the more or less circular bulged and squat shape in use at present; but it is generally agreed that after a possible temporary difficulty a cylindrical shape would be accepted, but the height must not be much greater than the diameter. Also the measure must be light. As regards heaping or striking, one witness says it might be possible to insist on striking, but the majority certainly favour a continuance of the present system.

In Peshawar where measures are only used in the Swabi tahsil, an *odhi* of about the size selected for the *topa* is held suitable.

7. A few witnesses favour the prohibition of the simultaneous use of weight and measure on the ground of possible fraud, but very few witnesses refer to the point, and the Deputy Commissioner of Dera Ismail Khan thinks prohibition unnecessary. The majority of those who have expressed any opinion think it unnecessary to prohibit the use of the same term for a measure and for a weight. This only occurs as regards milk measures, and such measures where called by the name of the weight purport to hold that weight of milk.

8. There are a few special maunds for special commodities and no one has offered any objections to such as there are being abolished. Three witnesses recommend special goldsmiths' weights and one, special weights for druggists.

9. The suggestions contained in Question 20 are generally approved. The following comments are made :—

- (b) Samples should be supplied also to heads of panchayats and of baradaris, and also to mullas and pandits.
- (c) Proclamation should also be by beat of drum, and the new system should be carefully explained, the services of maulvis and respectable residents being enlisted, and copies of the tables should be supplied to all shopkeepers, and others.
- (f) Testing and stamping is disapproved of by none, and definitely approved by many, especially by the witnesses examined orally. Many consider that the stamping should be done free; some say, free for a time. Inspection should be done periodically—annually according to two groups, quinquennially or once in 5 to 10 years.
- (g) Old weights should be replaced free for a time, or in the case of poor shopkeepers who might be defined as those who do not pay income tax. The importance of removing all old weights and replacing them by new ones is urged, as it would not be possible to correct a 105-tola seer into an 80-tola one.
- (l) There is a certain amount of opinion in favour of Government supplying weights, at least temporarily, or arranging for their supply. Some consider that Government should supply at cost price. One suggests that weights be sold at tahsils, and through patwaris and headmen. The witnesses examined at Dera Ismail Khan thought anything in the way of licenses for manufacturers of weights unnecessary. Those at Peshawar thought Government supervision advisable.
- (m) and (n) The Deputy Commissioner of Dera Ismail Khan disapproves of these proposals, he of Bannu thinks that they should be brought into force a year or so later than the other measures, while a pleader of the first named district approves, but considers that no penalty should attach to infringement.

(o) Penalization should only occur in cases of use of such weights in trade transactions, or use only should be illegal

(p) There should be no presumption. Inspection of scales is deemed unnecessary.

10. As to the period for enforcement, two years is about the average, a considerable number think one year or even less enough, others that as much as five or in one case ten years would be necessary for complete enforcement; the period is shorter in towns and longer in rural areas.

11. As usual leniency is advocated to begin with, and for first offences a warning, or destruction of the weights with or without confiscation of the pieces; for subsequent offences fine is approved, and one witness advocates imprisonment.

12. As regards staff for enforcing the orders, there is the usual objection to the employment of the Police which is more unanimous than in most provinces. One or two would employ them, of a grade not below that of a Sub-Inspector. The Revenue staff is universally approved, down to the grade of a Naib-tahsildar or kanungo; in municipalities the municipal staff should be employed, "such as may be approved of by the Committee" or such as the octroi superintendent, but most witnesses do not specify. For rural areas the village headman is unanimously approved, some witnesses suggest lambar-dars, but these, as another points out, are frequently also headmen. This witness suggests that the work of inspection devolves on this man in his capacity as malik (i.e., headman), as that title connotes more honour than that of lambar-dar. The patwari is proposed by a fair number, District and Municipal Board Members are proposed, and also the bazaar chaudhari and mahalladar. A special agency is recommended by a few mainly for large cities, and payment of the patwari or headman for this work is also sometimes proposed.

It is generally agreed that the stamping should be done through the tahsil but one witness suggests that it be done by means of "local bodies and panchayats" and another by the tahsildar, patwari or headman.

13. Opinions are almost invariably to the effect that a uniform system will benefit all, a few think there will be some temporary inconvenience, but even these consider that there will ultimately be a more than commensurate advantage.

14. One witness, a Peshawar zamindar, urges that the frontier tribes also be induced to accept the prescribed system.

AJMER-MERWARA.

Ajmer itself was visited. Written replies were received from 21 persons, 9 officials (1 European) and 12 non-officials 25 persons were examined, in 5 separate groups, of these 15 had submitted written replies.

2. With the exception of two, who appear to be somewhat lukewarm over the matter, all witnesses favour a uniform system; and the great majority recommend the 80-tola seer, which is the system most prevalent at present. One group of small traders suggests provincial systems if this cannot be accepted and another a 100-tola seer as a compromise. There is, however, a certain amount of evidence in support of the possibility of introducing either the British system in the shape of the 2-lb. seer with reduction of weights and of the rupee by $\frac{1}{8}$ part each, or the metric system. Thus, a group of merchants think that the ultimate ideal should be the metric system, to be attained after

15 to 20 years, the country to be first got used to a uniform system by the enforcement of the Railway weights during the next 5 or 10 years. An Extra Assistant Commissioner favours a decimal system. The proposal to make the seer equal to 2 lbs. by reducing the weight of the rupee, etc., by $\frac{1}{8}$ part is viewed with some favour by some witnesses, with not very great disfavour by a few others, or with considerable disfavour by certain others. The chief support for a radical change in system is to be found among the group of merchants above referred to which think the ultimate ideal should be the metric system, and two other groups one of which included four Indian officials and a Medical Missionary who is Chairman of the Municipality. The latter consider that more stress should be laid on a perfect system than on one easily understood by the people, thinking that such system could be learned in 2 or 3 years, though one said a generation. They were somewhat divided in opinion between the British system to be introduced by making the seer 2 lbs., etc., and the metric system with toinage based on the decimalization of the sovereign, the new coin of £1 to weigh $\frac{1}{10}$ kilogramme. On the whole, opinion in both groups was more in favour of the metric system. But any such changes met with but little support from the other witnesses, and the Deputy Commissioner only favoured the 2-lb seer if it were decided to introduce the British system, but he himself recommends the Railway weights. The objections to reducing the weight of the rupee are those usually urged, *viz.* suspicion of decrease in value, though the more educated are beginning to realize that the rupee is merely a token, but more especially the confusion in weights caused by the change, and fear lest prices should not decline *pari passu* with the decline in weight. Accordingly one group thought there would be less inconvenience if the seer were made equal to the kilogramme and the weight of the rupee raised to $\frac{1}{10}$ thereof.

3. As regards measures of length and area, the 36" yard was universally approved, to be divided into 16 girahs, as well as into inches and feet, though one set of witnesses suggested that girahs be abolished. The acre was accepted as suitable by all and objected to by none.

4. Measures of capacity (dry) being scarcely used, but few referred to them. One group suggested that they be made so as to contain a fixed weight of water.

5. The use of British Imperial liquid measures was proposed by the Locomotive Superintendent of the Bombay Baroda and Central India Railway. None else proposed anything.

6. Two witnesses thought it wise to confine the use of a term to either a weight or measure, but, as noted above, measures are practically not used, and the expression of opinion is mainly academical.

7. One witness urges the need of special weights for jewellers.

8. With regard to methods of introduction the following suggestions were made :—

(b) Samples should be supplied to commercial and industrial institutions.

(c) Tables of weights should be posted up in railway carriages and stations.

(f) Testing and stamping of weights is expressly approved by all the witnesses orally examined, and not disapproved of by anyone. Two recommend that it be free always, and one free for five years. The period between successive inspections is variously set at 2, 3 or 5 years.

- (g) One set of three witnesses recommends that weights be replaced free for three years. A group from Beawar urge the hard case of those poor people who use stone weights.
- (h) Considered unnecessary by some.
- (f) English and foreign weights should be permitted for foreign trade. The proposal is deemed harsh by one.
- (k) Deemed unnecessary.
- (l) One set of three witnesses suggests sale at cost price for five years and two at a profit by Government, but most would prefer to leave it to private enterprise. The idea of licensing manufacturers is not generally favoured.

9. The period necessary for introducing a uniform system is variously estimated, one to two years being generally regarded as enough for enforcing the Railway weights, or even less by some. For a new system the estimates vary between 2 to 3 years and a generation.

Penalties.

10. Nothing fresh is suggested.

11. Authority to enforce a uniform system. The Police are objected to, though one or two would have Police of grade not below a Sub-Inspector, and one would go lower. The Revenue staff down to kanungo is generally approved, and the patwari by some. The headman is generally approved, exception being taken by one group of witnesses on the ground that he would not be impartial. Municipal and District Board members are usually advocated, and the superior Municipal staff. The Excise Inspector is advocated by the Deputy Commissioner. The present agency (Chapter IV, A. j. 3) is considered enough by some. Others recommend a special staff. The lower grade officials would only report. The Deputy Commissioner's proposals seem to be in accord with the general view.

Agency.

12. It is specially urged that whatever system is adopted the same should also be accepted by the Native States by which Ajmer is surrounded.

Native States

BALUCHISTAN.

The Committee visited Quetta and Chaman. Five written replies involving 19 witnesses were received, and 41 witnesses were examined in groups.

Evidence received.

2. All the witnesses are agreed that there should be a uniform system of weights for India. The Political Agent, Quetta, is of opinion that discretion might be given to Local Governments to exempt such local areas as might be considered necessary owing to local circumstances. One group of witnesses is doubtful whether it is feasible to enforce a uniform system on the rural tribal population of the province.

Uniform system desired.

3. As regards the system to be adopted, the Political Agent, Quetta, recommends the British or the metric system, retaining, however, the Indian nomenclature, e.g., the tola, chatak, pao, seer and maund. One other witness also recommends the British system. But the evidence in favour of the Railway system preponderates. The witnesses are not agreed as to whether it is desirable to reduce the Railway weights by one-thirtysixth and also to reduce the weight of the rupee (which is practically the tola-weight) in the same proportion, so that the seer may be exactly equal to two British pounds. The Political Agent is against the alteration of the weight of the rupee. On the whole, the trend of the evidence is against alteration of weights or of the coinage.

System recommended.

- Length. 4. As regards length, the British yard is recommended.
- Area. 5. For areas, the British acre is deposited to as possible.
- Capacity. 6. For measures of capacity, a *kasa*, to hold $4\frac{1}{2}$ to 5 seers of wheat, or possibly, a measure of the same capacity as a gallon, is approved. If the capacity of the measure is to be based on a definite weight of water, such weight should be in seers. The present custom of using measures heaped may be allowed to continue.
- Cubic contents. 7. Indigenous measures of cubical contents do not exist.
- Special weights. 8. No local standards or special weights for certain commodities are recommended, and no objection has been raised to the abolition of the variations in the maund.
- Simultaneous use of weights and measures. 9. The Political Agent, Quetta, thinks that the same commodity should not be allowed to be sold at the same place both by weight and by measure.
- Methods of introduction. 10. As regards the measures to be adopted for introducing and enforcing a uniform system, the suggestions in Question 20 of the Questions framed by the Committee are generally approved. The only suggestions and criticisms offered are these :—
- (b) Some witnesses suggest that specimens of authorized weights and measures should also be supplied to the headmen of village panchayats.
- (m) The same witnesses also recommend that documents relating to trade with Afghanistan should be exempted from the proposed rule.
- (o) The Political Agent, Quetta, is of opinion that "it would be desirable to leave the penal clause to the discretion of the Local Government. For instance, in the case of the town of Chaman, which is on the Afghan border, it would be difficult to prosecute traders for using the Afghan weights and measures, in addition to the authorized weights and measures, as the Afghan traders would, for many years to come, insist on using their own weights, etc." The period for enforcing this proposal should be a year after the introduction of a uniform system.
- Penalties. 11. As regards penalties, destruction and confiscation of unauthorized weights and measures and a fine not exceeding Rs. 50 are recommended, these penalties to be operative a year after the introduction of the scheme.
- Agency. 12. Regarding the agencies to be employed for detection of offences, most of the witnesses approve of the Police being entrusted with this duty, only Police officers not below the rank of Sub-inspector being empowered. Some witnesses of Chaman are of opinion that only an Extra-Assistant Commissioner should deal with these cases, on production of the unauthorized weights or measures before him. All witnesses are agreed that Revenue officers not lower in rank than a Naib-tahsildar should also be employed on this work. In Municipalities and other towns, the agency recommended is members of the committees

and paid officials like the Secretary, Assistant Secretary and octroi daroga. In rural areas the village headmen and such members of panchayats as may be authorized in this behalf are considered a suitable agency.

Effect.

13. All the witnesses think that a uniform system would benefit all classes of people.

14. Several witnesses have recommended that the sale of weights should be under licenses, but that such licenses should be freely issued.

Licenses for vendors of weights.

DELHI.

Delhi was visited and 26 written replies were received from as many persons, (2 from officials, both Europeans); 30 persons were examined orally, three individually and the others in 3 groups.

Evidence received.

2. The majority of opinion is very decidedly in favour of the enforcement of a uniform system. The Secretary to the Municipality, however, considers it "possible but inadvisable", but admits his experience to be small; two other witnesses are dubious of the use of changing or doing much. The representatives of the Punjab Chamber of Commerce and the Delhi Piece Goods Association, after beginning by saying that they consider a uniform system desirable and that steps be taken to introduce the metric system without compulsion, finally appear to recommend the Railway weights, which "could be introduced at once into Delhi" and the use of which "if alone stamped by Government" could be made obligatory on all shopkeepers within a year and in rural areas in a somewhat longer time.

Uniform system desired.

Most witnesses favour the Railway weights for the uniform system of weights; two add that any other system would cause great inconvenience; and another points out that there are no terms in Hindi for decimal fractions. On the other hand, there are a certain number of larger merchants more or less prepared for a more radical change. There is here a certain amount of opinion in favour of the metric system which is thought to be more or less practicable, though one makes its introduction into India conditional on its prior introduction into Britain, while two others appear really to prefer the Railway weights which another witness would enforce pending the introduction of the metric system into Britain. One other witness also advocates the metric system, but together with the retention of local weights and measures as local or provincial standards; on the other hand, the President of the Delhi Hindustani Mercantile Association considers that any attempts to introduce the metric system would result in a world of confusion.

Railway weights favoured.

Metric system.

3. There is, as is to be expected in a more highly educated community, less fear of an alteration in the value of the rupee if its weight be reduced so as to make the 80-tola seer equal to 2 lbs., but both Chamber and Associations oppose any change in the coinage. Some witnesses consider that there would be no serious objection to such a change. On the other hand, several distinctly dislike the idea, which on the whole cannot be said to have been welcomed by any, except one who suggested it *suo motu*. Two witnesses consider the introduction of the pound not to be likely to be successful, but, if decided on, would prefer a $\frac{3}{4}$ -lb. rupee. One group express themselves as so far convinced of the value of uniformity as to be prepared to accept any system based on the rupee weight as it is at present.

Change of coinage

4. For length, opinion invariably favours the 36" yard, the Chairman of the Delhi Hindustani Mercantile Association pointing out that not once in a

Length.

hundred times is cloth, etc., imported from ordinarily metric countries made up according to the metre, but almost always according to the yard.

5. For areas, there is but little opposition to a gradual introduction of the acre by its being entered in the patwari papers side by side with the existing measure. One witness urges a preference for the bigha as better known and one group of witnesses fear there might be inconvenience.

6. Dry measures are practically unknown; for liquid measures the Chamber of Commerce and the Piece Goods Association propose the British Imperial measures and one witness asks for standard milk measures; those at present used purport to contain the weight of milk by which they are called, but apparently do not always do so.

7. Measures not being used, opinions as to the simultaneous use of weight and measure are few; such as there are favour prohibition. No objection is urged to the use of the word seer for the measure supposed to hold that weight of liquid. Anyone suspecting incorrectness is expected to check it by weighing.

8. There are a few examples of special tolas and maunds for special commodities. Only preliminary difficulty is urged to their abolition.

9. Four witnesses urge that separate weights for jewellers be permitted, presumably those now in force are meant, but details are not given.

10. As regards methods of introduction, the suggestions put forward are :—

(a) Tables should be stuck up in schools, chaupals and bazaars, and, instead of being given to headmen, should be sent to respectable and intelligent shopkeepers, men who would expound them to their neighbours; proclamation by beat of drum and explanation through trade and caste chaudharis and panchayats is urged and also advertisement in news papers.

(d) Other weights should be also taught, but the educational authorities should be required to make boys thoroughly acquainted with the new system prior to its introduction.

(f) Testing and stamping of weights is definitely approved by many and disapproved of by none. One urges that it must be done by Government to prevent cheating. It is generally urged that it be done free of charge, at least in cases where no correction is required or if brought voluntarily by the owner or for the first time. Privately made weights should only be sold after stamping. Periodical inspection is approved, triennial inspection being proposed.

(g) Replacement of weights should be free according to some; others also approve the idea generally; the only opponent being one who considers that this would cause confusion and should be left to private persons to do themselves.

(h) One witness objects.

(i) One witness considers this inexpedient.

(l) Sale by Government at a profit or on commission like stamps is proposed by some; others merely approve in general terms. Two groups advocate licenses for manufacturers and vendors of weights.

(m) and (n) The Chamber of Commerce and the Piece Goods Association and one witness disapprove of this proposal.

(o) and (p) The Chamber of Commerce and the Piece Goods Association do not like anything "so drastic" and one witness objects to presumption.

11. As to the period before enforcement is made absolute, the general recommendation is one to two years for the railway weights, variations being from 2 months to 5 years. For enforcing any foreign system from 2 to 20 years are suggested.

12. The usual plea for leniency to begin with is made by many. The proposals are generally approved, one suggests that the fine imposed should be proportionate to the daily sales of the shopkeeper.

13. As an authority to enforce the rules, the police are as usual objected to, though some would allow those of a grade not below that of a Sub-Inspector. The Revenue staff down to kanungo is generally approved, and a large number of witnesses would add the patwari, only two specifically objecting to him. For municipalities, the municipal members and staff are considered suitable, staff to include only the superior officials, drawing not under Rs. 100 or "only Europeans so that there be no partiality". For rural areas, the headman (lambardar, zaildar and safedposh) is generally approved, though two object to him as likely not to be sufficiently above private feuds. The bazaar chaudharis of a sub-committee of them under a Municipal member are also proposed. Several also consider that a special establishment is advisable: 'Inspector on Rs 100' or 'similar to the Food and Drugs Inspector', or a 'Special Inspector' are proposed. The Chamber of Commerce considers that a well-organized Weights and Measures Department is necessary, and suggests the employment of a pensioned soldier as Inspector.

14. Opinions as to effects are few, such as there are generally that a uniform system would benefit all especially the poor.

15. Some consider that if any other system than the British is introduced the use of that system should be permitted either unrestrictedly or else under license.

COORG.

Coorg is the only province in India which was not visited by the Committee, but two members visited Bangalore, the headquarters of the Chief Commissioner. Written replies were received from the Commissioner, the First Assistant Commissioner, a Subedar and two merchants; the second and third of these drew up their replies after consulting leading merchants in two places.

2. All the witnesses in Coorg are in favour of a uniform system of weights and measures throughout India. The First Assistant Commissioner states that he had repeated complaints from ryots regarding the practice of the Moplahs in giving them advances of grain by a small *para* and recovering the advances and purchasing from the ryots by a large *para*.

3. The only witness in Coorg who has suggested a system to be adopted throughout India is the Commissioner, who proposes the Railway weights with a viss of 4 seers of 80 tolas each. He considers the metric system outside the range of practical politics. The merchants of Virajpet state that it does not matter what weights or measures are prescribed so long as some definite standard weights and measures are fixed.

4. No witness in Coorg has dealt with the question of altering the coinage in connection with weights and measures.

5. The Commissioner of Coorg suggests that the English system of liquid measures of capacity should be adopted throughout India and that a seer holding 40 fluid ounces should be used as a dry measure of capacity, 40 seers being made equal to one maund and the measures being used struck. No other witness in Coorg has suggested any system of measures.

6. No witnesses in Coorg have made any suggestions regarding the systems of length, area and cubical contents to be used in India.

7. Areca-nut, ground coffee, onions, turmeric, chillies, etc., are sold in Coorg both by weight and by measure. Two witnesses object to this practice as purchasers are likely to lose at the hands of middlemen if they buy by measure, as the practice makes it difficult for the producer to estimate what price he ought to get and as purchasers and sellers are swindled by wily traders; but the First Assistant Commissioner does not consider that the custom need be interfered with as retail prices vary very little, and another witness states that there will be great trouble if the practice is stopped and that business will not be carried on properly.

8. It is not considered in Coorg that the custom of calling both a weight and a measure by the same name leads to confusion and trouble as the different seers are distinguished by epithets and all the local people know them. All but one witness have expressed the opinion that it will be preferable to confine the use of a term to one or the other.

9. Different systems of weights are used in Coorg in dealing with different commodities and sometimes for the same commodity. The reason assigned for the former is that the weights were originally borrowed from Mysore and Canara where different systems were and are still in use. Commodities are sold by the English pound when the customer desires it. But otherwise, the same weights seem to be always used for the same commodity. Two witnesses state that goldsmiths may be allowed to retain their present weights as their trade is very local and their weights are in most cases fractions of the rupee-weight.

10. The Commissioner of Coorg considers that it will be expensive to supply specimens of the authorized weights and measures to all revenue offices, police stations, village headmen and recognized elementary schools.

11. The Commissioner of Coorg considers it unnecessary to remit the import duties for a certain period on unauthorized weights and measures and weighing machines as most weights and measures will be manufactured in India.

12. The Commissioner of Coorg is opposed to the suggestion that Government should sell at cost price authorized weights and measures; but suggests that the Government should provide facilities for stamping them so that any private manufacturer can get weights and measures stamped before sale to the public.

13. No other comments are made by witnesses in Coorg on the proposals in the Committee's questions regarding measures to be adopted for the introduction of a uniform system of weights and measures throughout India.

14. As regards the period after which these measures should be adopted, the Commissioner of Coorg suggests that two years should be allowed to elapse before the provisions should be brought into force, that civil courts should not

recognize any other weights and measures in documents executed after the prescribed date and that the use of any other weights and measures should be illegal throughout India. Another witness suggests a period of 3 years.

15. The Commissioner of Coorg considers that punishment for failure to adopt the prescribed system should be fine on conviction before a Magistrate which would be more popular than the other penalties suggested, namely destruction or confiscation, because the former would involve a trial before the Magistrate. Two other witnesses approve of all the three penalties.

16. Of the four witnesses in Coorg two express approval of the proposals in the Committee's question regarding the agencies to be employed in detecting cases of unauthorized weights and measures. Another witness suggests the employment of (a) head constables, (b) shanbhogues, (c) shettis in pettas and notified areas and (d) patels in villages.

17. The Commissioner of Coorg considers that the introduction of a uniform system of weights and measures would be beneficial to all. Another witness considers that it would affect no one though it may cause some confusion at the outset.

BANGALORE (CIVIL AND MILITARY STATION).

Two members of the Committee visited the Civil and Military station, Bangalore, which is also the headquarters of the Chief Commissioner, Coorg. Written replies were received from 9 witnesses including the Collector, a representative of the United Planters' Association of Southern India and the Director of Industries and Commerce in Mysore. The Collector placed before the Committee a note by one of his predecessors on the subject of introducing a uniform system of weights and measures in Bangalore, and certain connected papers. Two groups of witnesses were examined orally, one consisting of two and the other of nine persons.

2. In Bangalore all but two of the witnesses are in favour of uniform system of weights and measures throughout India. The reasons given by those in favour of the system are that it is advantageous to the public who are now put to great inconvenience and loss, that buyers and sellers will understand the correct way of carrying on transactions and that it will put a stop to fraud on the part of those who intend to cheat. The two witnesses who are opposed to a uniform system state that there would be confusion in wholesale dealings, that the wholesale merchants will make no profit and consequently will not obtain large quantities of commodities and that it will therefore be difficult for the public to procure articles.

3. As regards the system to be enforced as a uniform system throughout India, a group of witnesses desire the use of the local weights to be extended throughout India. Another witness suggests a seer of 100 tolas. The representative of the United Planters' Association of Southern India suggests the following table: 100 tolas=1 seer; 50 seers=1 maund; 100 seers=1 double maund; his reason for this suggestion is that the rupee is the common unit used throughout India. Another witness (Mr. Alfred Chatterton) suggests the following table: 175 grains=1 tola = 16 annas; 2½ tolas=1 ounce; 16 ounces=1 lb.; 100 lbs.=1 maund; 10 maunds=1 candy. Two witnesses suggest the Railway system as it is used in all Northern India. Four witnesses included in a group orally examined suggest the same system as it is already used in the sale of mutton and beef. No witness suggests the metric system. On the other hand, the Collector states that it will not suit merchants and buyers in India. Mr. F. J. Richards, a former Collector, states that the

kilogramme answers to no known weight in India; that its introduction will involve a gigantic disturbance of existing conditions of trade and commerce and that the decimal system is awkward for people who are accustomed to binary sub-divisions. Mr. Chatterton states that practical men pay very little attention to the metric system; that its adoption will not improve export trade, that its units are not so convenient as British units and that serious errors occur by putting the decimal point in the wrong place; one witness states that no foreign system is workable in India. On the other hand, some of the witnesses seem to think that the British system would be the best and would be acceptable. The Collector and Mr. F. J. Richards are both in favour of the British system. The latter states that the various seers, visses and maunds, etc, now in use must be expressed in pounds before a bargain can be struck; that all big contracts, such as municipal and military contracts, are now expressed in pounds, that the pound is in general use in the station bazaars; and that many articles can be purchased by the pound; he would adopt a quarter of 25 lbs, hundredweight of 100 lbs. and the ton of 2,000 lbs. Other witnesses consider that the British system should be adopted because it is the best for India and safe in the interests of buyers and sellers if made uniform throughout the British realm. Eight witnesses in another group orally examined prefer it if coins are altered so that their weights fit in with the pound.

4. The witnesses who have expressed an opinion on the point generally regard the alteration of the rupee as objectionable because people would think it less in value. It is used in jewellery and is not accessible to many. One witness approves of the proposal to alter the rupee while another states that the weight may be increased to $\frac{1}{8}$ lb by the addition of silver only. Another witness accepts the proposal to increase the weight to $\frac{1}{8}$ lb by the addition of alloy. No objection is raised to the alteration of the nickel or copper coins, these suggestions being regarded as better than altering the rupee as these coins are always ready to hand and copper coins are harder than silver

Change of coinage

5. No opinion is expressed in Bangalore regarding the units of length, area and cubical contents.

Length, area and cubic contents.

6. Some witnesses in Bangalore approve of the adoption of the Imperial quart, etc, as measures of capacity throughout India. The representative of the United Planters' Association of Southern India suggests a measure holding 100 tolas of water. Mr. Chatterton suggests the following tables —

Measures of capacity.

10 tolas=1 ollock; 10 ollocks=1 seer; 4 seers=1 gallon; 10 gallons=1 maund; 10 maunds=1 candy; or $12\frac{1}{2}$ tolas=1 ollock, 8 ollocks=1 seer, etc, as before, the tola being 175 grains.

7. Poppy seeds, coriander, oils, etc, are sold both by weight and measure in Bangalore. One witness considers this practice unobjectionable while two consider that this practice should be stopped.

Simultaneous use of weight and measure.

8. The term seer is used both as a weight and measure of capacity in Bangalore; but the witnesses state that no serious confusion arises in consequence of this practice as the people are accustomed to it and both parties to the transaction know which is meant. Mr. Chatterton states that in administrative work confusion arises as it is not clear whether a weight or a measure is intended in reports and returns. All the witnesses who have expressed an opinion are in favour of restricting the use of the term to one or the other.

Use of same name for weight and measure.

9. The same commodities are sometimes sold by different weights. This is explained as a local practice to allow for dryage and wastage, or in the case of

Special weights for special commodities.

firewood to make up the loss by splitting; it is also ascribed to usage. The witnesses generally say that there would be no objection to the adoption of standard weights only in such cases but two witnesses say that it would cause much inconvenience to wholesale merchants, who would give up trade as they would think that they will not get profit in future. The Collector states that dealers in gold and silver as well as all chemists and druggists should be allowed to use their own local standards permanently.

Methods of introduction.

10. (a) No objection is raised to this suggestion.

(b) Mr. Chatterton considers that this would result in considerable expenditure without any corresponding advantage. This proposal is, however, approved by other witnesses in Bangalore.

(c) Mr. Chatterton does not think that the publication of such tables would influence matters either way. Other witnesses, however, approve of the proposal to publish such tables.

(d) Mr. Chatterton regards the proposal as too narrow-minded. This suggestion, however, has not been objected to by other witnesses.

(e) and (f) No objection is raised to this.

(g) Mr. Chatterton does not see why the general community should not be expected to bear the cost of the change, considering the advantages, provided that the cost does not fall too heavily on any individual.

(h) Mr. Chatterton considers this unnecessary because the cost of altering a weighing machine is not large and the owners are generally either Government, public bodies or wealthy persons; the Government should make such arrangements that private owners can get their weighing machines altered at the least expense.

(i) and (j) No comment is made

(k) Mr. Chatterton considers that there is no reason why Government should forego its import duties on authorized weights and measures. This would merely withdraw from private enterprise in this country the slight amount of protection it receives from the levying of import revenue duties. Other witnesses have raised no objection to the suggestion.

(l) The Collector of Bangalore does not approve of the suggestion that the Government should sell authorized weights and measures at cost price. Mr. Chatterton prefers the second alternative by which the price will be such as to allow a reasonable profit to private trade. In his opinion, the Government should undertake the manufacture of weights and measures or license private firms to do so. They should be reasonably accurate and be made to a standard pattern so that people may easily recognize them; they should be of scientific design and as cheap as possible allowing for reasonable trade profit. He suggests that tenders should be invited from manufacturers all over the world for the supply of the very large quantities which will be taken over by Government and distributed throughout the country for sale. The representative of the United Planters' Association of Southern India and another witness of Bangalore are opposed to the suggestion that Government should sell weights and measures at a reasonable profit.

(m) and (n) Two witnesses in Bangalore object to these proposals. They state that Courts and registration offices should recognize whatever is entered in agreements and that this should not be interfered with. The Collector also does not recommend that Civil Courts should be debarred from recognizing any other weights and measures entered in documents.

(o) and (p) No objection has been raised to these suggestions.

11. As regards the period after which the several measures should be adopted to enforce the use of the uniform system of weights and measures, one

Period.

witness in Bangalore suggests six months. The representative of the United Planters' Association of Southern India suggests three years. Mr. Chatterton states that the period should be as short as possible, and suggests one year for the introduction of the system on railways and in public markets and two years in all municipalities and three years throughout the country.

12. The Collector and three other witnesses of Bangalore disapprove of the proposal that unauthorized weights and measures should be liable to confiscation when used. Otherwise, the proposals made by the Committee are generally approved. Mr. Chatterton regards confiscation as the only method by which we can compel the general public to adopt the new system. The representative of the United Planters' Association of Southern India suggests that confiscation should not be adopted for two years and that an offender should not be punished with fine until after three years.

13. As regards the agencies to be employed to detect cases of unauthorized weights and measures, the Collector of Bangalore suggests that no official of the Police Department below the rank of Inspector should be employed for the purpose; while other witnesses suggest that the Police should not be employed. Mr. Chatterton considers that the Police will have to be employed, but that steps should be taken to prevent this additional power placed in their hands from becoming a means of oppression. He suggests that the Police should be empowered to seize unauthorized weights and measures and forward them to the chief public office in the town where they should be publicly inspected once a week by the chief civil officer who will order their destruction if satisfied that they are unauthorized after hearing any complaints made by the owners. He considers it unwise to entrust the Police with any authority in villages, and would leave the matter in the hands of the village headmen.

Witnesses state that in the Revenue Department no one below the rank of Revenue Inspector should be employed in this matter. It is suggested that Municipal and Revenue officials including the Revenue Officer, Manager and Tax-Inspector should be employed in this connection. The Collector is opposed to the proposal that village headmen should be empowered to detect cases.

14. Two witnesses think that the introduction of a uniform system of weights and measures will adversely affect large traders as purchasers will demand goods at their original price without making any allowance for the cost of carriage, commission, etc. Other witnesses think that there will be little or no effect and that the trouble and confusion caused by its introduction will be only temporary and that there will be considerable benefit to all concerned.

15. Two witnesses and two groups of witnesses orally examined suggest that the uniform system of weights and measures should be used in Native States.

16. One witness suggests that the use of measures of capacity should be abolished; he states that no abuse appears to exist in Hyderabad and other places where all transactions are by weight; it is easy to see whether weights are duly stamped but difficult to check measures.

17. A by-law was passed by the Municipal Council with the intention of enforcing the use of British avoirdupois weights, (with a maund of 25 lbs. and the cental of 100 lbs.) and the English measures of capacity and length; but it has not been brought into force owing to certain difficulties in testing weights and measures.

CHAPTER VI—CONCLUSIONS.

The evidence we have received shows a general necessity and desire for a uniform system, provided that this does not involve too radical a change from existing practice, and we consider that uniformity subject to this proviso is both advisable and desirable. In what follows it is to be understood that the regulations, penalties, etc., are only intended to apply to weights and measures used for purposes of trade, and certainly at the outset we would restrict actual inspection to weights and measures used in a recognized shop or stall, allowing, however, persons affected to bring to light illegal practices as regards weights and measures used for trade but not occurring in a shop or stall in the ordinary sense of the word, *e.g.*, cultivators possessing weights for the sale of their own produce.

2. Over the whole of India (excluding Burma) except Madras, the great majority of witnesses have advocated the Bengal or Indian Railway weights as the system of weight to be adopted and in Madras a certain number have done so also. Other systems also, however, have their advocates and it will be convenient to consider these first.

3. *The metric system.*—The most important advocates of this system have been the Chambers of Commerce of Calcutta and Rangoon (Chapter V, U P, 3 and Bu., 2). In Bombay and the Punjab (Chapter V, P., 2) very few favoured it. In Madras (Chapter V, M, 8) a certain number did so, but the proportion of those who had any real experience of the system was infinitesimal.

The special arguments put forward in support of the metric system are the usual ones of its simplicity and world-wide adoption. The advocates generally agree (more often than not on being questioned on the point) that decimalization of the coinage either on the basis of the rupee, as in Ceylon, or of the sovereign would be advisable. Against it we have specially the fact of its being almost unknown in India at the present time, and also that a decimal system is foreign to Indian ideas. This system has indisputably been introduced into a great many countries, and been generally found satisfactory, much stress being laid by its advocates on the fact that no country that has really introduced it ever desires to revert to its old system. We do not consider that much stress can be laid on such an argument, as being in favour of the metric in preference to any other uniform system. In the first place, a change of weights and measures of any sort is inevitably disliked; and in the second, in most countries that have adopted the metric system weights and measures were, before such adoption, in such a state of confusion as would have rendered the adoption of any uniform system most desirable. We consider further that the circumstances of India are very different from those of any other country that has adopted the metric system. In the first place, the European countries which have adopted it are themselves very much smaller in extent and population, and much more closely connected with their neighbours from which, as a rule, they are separated by merely artificial frontiers. As a consequence the proportion of the population interested in international trade is very much larger than it is now or is ever likely to be in India. For one transaction between a resident of India and one of another country in which the existence of the same system of weights and measures would be of benefit, there are at least 10,000 such transactions in which such uniformity would not be of the least advantage, and for which mere internal uniformity would be sufficient. Secondly, while the merchant engaged in foreign trade is generally a man of intelligence and education well able to overcome the difficulties caused by the varying systems of different countries, education in general is much more backward than is the case in most European and American countries, and in those countries in which it is much on a par with India the metric system would appear not to have been by any means easily or universally adopted. Thus, as regards Southern Italy, "it may be gathered that the transition from the old to the new

system has been difficult and that in parts of the country it is still far from complete". In Greece "the metric system was legally established by Royal Decree in 1836" but "as regards weights and measures of capacity, neither the Government nor the public uses it. The Greek Government has at various times had under consideration the expediency of rendering the use of the metric system compulsory on the public. It has, however, always refrained from doing so in deference to the habits and prejudices of the people". In Spain, the employment of the metric system was made obligatory from 1st January 1863, but was postponed from time to time until 1st January 1869. "All these postponements took place in consequence of the passive resistance which the substitution of the new for the old system had to encounter. At the present day, that system may be considered as in force but not completely so. It may be said that in the provincial capitals, in the head judicial districts and in the chief towns the adoption of the metric system is complete, but this is so especially as regards weights and length measures. In the smaller towns and especially in those that possess less industry and commerce and slight intercourse with important cities the ancient system is still adopted except as regards weight in which the metric system may be said to be generally adopted". In Turkey, by a law of 1886 the adoption of the metric system was to be compulsory in Constantinople from 1891, and in that year "the old measures were confiscated and destroyed with some difficulty. The opposition of the people led to the concealment of the old measures and a refusal to use the new. The difficulties of enforcing so unpopular a measure on an ignorant and illiterate people appearing insurmountable the rule was allowed to lapse." In Peru, "in spite of official adoption the old Spanish measurements are retained by the common people for market purposes and by the merchants for all ordinary commercial transactions". In Guatemala, "one cannot properly speak of the ease or difficulty with which the change of system was made as nobody in commerce has ever taken any notice of it". The case of Egypt has already been referred to (Chapter III, paragraph 1).

The metric system has of course been successfully introduced into many countries, but the foregoing cases of failure in countries in some of which there are representative institutions of a considerably more advanced nature than there are in India must be held to demonstrate the unwisdom of attempting to introduce a system of weights and measures that is not supported by the bulk of the people. We would take this opportunity of acknowledging with thanks receipts of several communications from the Decimal Association and expressing our regret at being unable to agree with their views.

4. *The British system.*—Though this has more advocates than the metric system, still the arguments against it are to a great extent those already given as regards that system. It is practically unknown throughout Northern India, being scarcely used save in a few large shops for imported articles when sold to Europeans and to some extent in the export trade. It is better known in parts of the Central Provinces, Bombay and Madras, and has penetrated inland from the seaports to a considerable extent. In Bombay and in the Central Provinces, this is apparently in connection with the export trade, more especially in cotton, practically all of which is done by weights based on the British pound (Chapter IV, C. P., 4). In Madras, there seems to be no such connection. The system is, however, better known there than anywhere else in India. The spread of British weights appears to be due to a not inconsiderable extent merely to the fact that well-made weights based thereon are, and have long been, more readily available than weights of any other system. The weight of articles weighed with such weights is, however, expressed in terms of the local weights and not in pounds.

5. The nearness of the seer to 2 lbs. has attracted many towards the proposal to reduce the former to equality with the latter by reducing the whole

Proposed assimilation of British and Indian systems by change in coinage.

series of weights (tola, chatak, seer and maund) by $\frac{1}{8}$ th part, giving rise to the following table :—

Tola=175 grs. ; chatak=2 ozs. ; seer=2 lbs. , maund=80 lbs. and 28 maunds=1 ton.

The fact, however, that the rupee weight is the same as the tola in the Bengal series and that it has practically come to be the one common unit throughout India and is extensively used both for checking weights and as a weight for valuable articles makes it, in our opinion, extremely difficult, if not impossible, to alter the weight of the tola, seer, etc., without at the same time reducing the weight of the rupee from 180 to 175 grains. Though in parts of Madras, the United Provinces and the Punjab the original basis was either some other weight or the weight of some other coin, the weights in actual use have, as a rule, come to be recognized as equivalent to that of some definite number of rupee weights. This proposal to reduce the weight of the rupee received our attention and we took a large amount of evidence thereon, and also consulted the Mints as to the possibility of reducing the weight of the rupee by only reducing alloy therein. We find that though a fair number of witnesses recognize that the rupee is now merely a token coin and though one or two have gone so far as to say that were it made of leather they would still accept it if Government laid it down as worth the same, there is so large a number of people in this country unable to realize these facts that any such attempt would raise so large an amount of suspicion that it would be inadvisable to risk it. A few witnesses consider that the change in the weight of the seer, etc., could be introduced without any change in coinage, merely by insistence on stamped weights, with a system of inspection, but this is not the opinion of the majority. The possibility of supplying the desired connection between coins and weights by means of the nickel and copper coins was also considered. To an alteration of these little opposition was expressed, but the smallness of the opposition was an almost exact measure of the smallness of the value of such change for the object in view. When this is the case as regards the proposal to introduce what is practically the British system by the line of least resistance, it must *a fortiori* be regarded as impracticable to introduce the British system as it is in force in the United Kingdom, quite apart from any possibility of Great Britain changing to the metric system.

The opposition to the change in the weight of the rupee is based at least as much, if not more, on the confusion likely to result in weights as on the suspicion above referred to as to alteration in value. The strength of this opposition is a significant measure of the extent to which the rupee weight has become a universally recognized unit of weight, and before this one common unit is rejected we feel that it would be necessary to be very sure that the balance of advantage is in favour of such a course.

Somewhat similar arguments apply to the change of coinage that would be necessitated by the introduction of the metric system.

6. We, therefore, with some regret as the Indian Railway weights cannot be regarded as an ideally perfect system though distinctly convenient by reason of the number of subdivisions it allows for, after a careful examination of all the arguments for and against, and with an eye to the easiest possible system of assimilation, come to the conclusion that the uniform system of weights to be adopted in India must be one based on the 180-grain tola; and of all such systems there is no doubt that the most widespread and best known is that known as the Bengal or Indian Railway weights. The introduction of this system involves a more or less considerable change of system in parts of the United Provinces (Gorakhpur, Bareilly and neighbouring areas), practically the whole of Madras, parts of the Punjab (rural portions of Amritsar and neighbouring districts), of Bombay (South Bombay, Bombay city, and Gujarat), and the North-West Frontier Province.

In the parts of the United Provinces and the Punjab concerned and the North-West Frontier Province, in spite of the fact that the Railway weights are very

little used save in official transactions and on the Railways, the great majority of the witnesses favoured them. In the Punjab and Frontier Province these weights are known as the British (*Angres*) weights, and were only introduced on the annexation, and the ease with which they were adopted in the cities of the Punjab is of considerable significance as to what can be done where the system to be adopted is one based on a unit known to the people. We cannot but think that had the same energy been shown by Government in attempting to spread the use and knowledge of the 80 tola=seer in Madras, (where much more has been done in connection with weights and measures than elsewhere in India), as has been shown in standardizing local weights and measures, the knowledge of that system would have been much wider and the readiness to adopt it at least no less, than is the case in the areas above referred to in Northern India, where Government made but very slight efforts towards introducing the system.

7. So far we have omitted reference to Burma. We consider that that province must be treated separately. It has at present a separate system of its own, which is practically uniform throughout the country. There is, therefore, no *internal* necessity for change to secure uniformity as there is in most Indian provinces. This system, though nominally based on the tola inasmuch as the viss is now deemed to be 140 tolas, is really radically different, as the true basis is the tikal of which 100 go to the viss (the Burmese name of which it must be remembered is peiktha, the name viss being unknown to the ordinary Burman). Further, inter-communication between Burma and India is at present wholly by sea, and even when there is railway communication between the countries, the bulk of the commerce will still go by sea; while lastly, the bulk of Burma's commerce is with foreign countries, and not with India so that the adoption of an Indian system of weights and measures would be of practically no use whatever as regards foreign trade. Hence, if Burma were to change its system, it should clearly do it in order to adopt one of the world systems, the British or the metric, and against doing this the arguments are practically those already put forward in the case of India.

We think, therefore, that Burma should be permitted to retain its present system until (if ever) it shows a general desire to adopt one of the world systems.

It may be, and by some (but not a great many) witnesses has been, urged that Madras should also be treated separately inasmuch as its weights and measures in many respects differ greatly from those in force in the rest of India. But the arguments in support thereof are very different from and far less convincing than those in the case of Burma. In the first place, no one system of weights and measures can be said to be prevalent throughout the Presidency; there are several very diverse systems in force, so that the argument of internal uniformity does not apply; to secure internal uniformity would involve a change of system in at least a great part of the province. Secondly, the tola is recognized as the one common unit of the greater part of the weights in force which is not in practice the case in Burma. Thirdly, inter-communication between Madras and the rest of India is much greater and easier than in the case of Burma and being by rail all goods are necessarily weighed by the Indian Railway weights which again is not the case in Burma. For these reasons we think that Madras should not be treated separately from the rest of India.

8. We conclude, therefore, that there is a widespread desire and necessity for the establishment of a uniform system of weights and measures throughout India, and for a separate system for Burma, that action should be taken for establishing and maintaining such systems, and that the system to be adopted should be for India the Indian Railway weights and for Burma the present Burmese system. The systems should be respectively:—

For India.	For Burma
8 kbaskhas = 1 chával.	2 small ywés = 1 large ywé.
8 chávals = 1 rattí.	2 large ywés = 1 pè.

For India		For Burma	
8 rattis	= 1 másha.	2 pès	= 1 mu.
3 máshas	= 1 tánk.	5 pès or 2½ mús	= 1 mát.
12 máshas or 4 tánsks.	= 1 tola.	1 mát	= 1 ngámú.
5 tolas	= 1 chaták.	2 ngamús	= 1 tikal.
16 chatáks	= 1 seer.	100 tikals	= 1 pektha or viss.
40 seers	= 1 maund.		

The tola is the tola of 180 grains equal to the rupee weight. The viss has recently been fixed at 3 60 lbs. or 140 tolas, but the change has penetrated but slightly into the country, and the majority of witnesses seem to be of opinion that the viss is still 3 65 lbs., though it would not be advisable to revert to this, now that the change has been initiated, as the new value gives a much more convenient connection with the Indian weights. We do not think there should be any objection to the use of other names for any of these weights, provided that the same name be not used to denote more than the weight anywhere in India.

9. We have received comparatively few recommendations for special weights for use under special circumstances or in special trades. In the former category fall the innumerable special maunds and seers for special commodities. General opinion strongly favours the abolition of these, there being but small opposition to such a step. We think that this should be done so far as may be possible, but we fear that it may be difficult to carry such abolition into effect. We would recommend that it be at least definitely laid down that whenever the name of any of the prescribed weights or measures be used in any registered document, it be held to mean that prescribed weight and no other; *e.g.*, that a maund of cotton or sugar shall always be deemed to be of 40 seers of 80 tolas each of 180 grains. As regards documents not requiring registration and oral agreements involving the use of unauthorized weights and measures, we recommend that evidence be only admitted to prove what these are on payment of special costs. (See paragraph 31 and Mr. Rustomji's note of dissent there recorded).

10. Of special weights for special trades requests have been put forward for such on behalf of jewellers and druggists. As regards jewellers, throughout Northern India there are special tolas used for gold and to some extent for precious stones. These are probably based on the weights of various coins no longer extant. Whatever their origin, they are now practically invariably defined as of so many rattis in excess or defect of a rupee weight, the excess usually varies from *nil* to 12 rattis, being more often between 2 and 4 than anything else. This very mode of expression coupled with the varying nature of this tola appears to us a strong argument against recognizing the necessity or advisability of allowing any tola other than the one of 180 grains. But in addition to the general table already given in paragraph 8 above, we consider that the tank of 24 rattis or $\frac{1}{4}$ tola divided into 20 bissas or biswas should also be recognized. We do not consider it advisable to recognize the large ratti of which 64 go to the tola, though used to some extent in the Punjab and Burma.

11. The case of the druggist and physician stands on somewhat different ground. The argument urged in support of permitting separate weights for these is that a change of system would make it very inconvenient to use prescriptions made up according to the old system and that there would be considerable liability to mistake. We think it would be advisable to permit the use of such old systems in making up prescriptions until the general body of Indian physicians take sufficient interest in the matter to lay down some more definite system, but to require the use of the standard weights for actual sale of drugs.

We think that the mere presence in such dispensaries of such standard weights will go far to bring them into more general use.

12. The question of the British *avoirdupois* and apothecaries' weights is again somewhat different. The *avoirdupois* weights are used to a considerable extent in some of the seaport towns (Bombay, Madras, Cochin, etc.) and in the export trade. They have penetrated inland to some extent especially in Southern and Western India, where they have come into ordinary use in some of the markets, largely as already noted owing to the ease with which good weights of these systems are procurable. Here they are a frequent cause of fraud as a 2-lb. weight is often used for a seer, or a 3-lb. weight for a *viss* of 120 tolas and we are of opinion that the possibility of this should be put a stop to. On the other hand, it appears to us impossible or at least inadvisable to prohibit the use of such weights entirely. It has been proposed that the use of British weights should be permitted under a license and that they should be of a shape differing from that of the prescribed standard Indian weights. Either method would probably prove effective, but in view of the fact that the adoption universally of any one shape for the standard weights is bound to be a lengthy process we would recommend that in India (not Burma where the chances of fraud are insignificant owing to the different system there prevalent) both conditions be laid down, i.e., that firms or shopkeepers desiring to use British weights should be required to take out a license and that the weights used should be of some prescribed shape different from that of the standard Indian weights. Mr Rustomji considers that a license would be unnecessary, and would cause inconvenience owing to the inquiries required before it would be granted. Such license should, we think, be granted free of charge on cause being shown for the necessity of the use of such weights. The grounds of the grant of such license would be the necessity of the use of such weights for the convenience of the person using them or of his customers. Thus, firms exporting by British weights, which is the system generally used, would receive permission; so also would importers of articles received by British weights and many shops selling imported articles, especially in larger towns and cantonments.

Apothecaries' weights are only used in connection with European drugs and we would recommend that permission to use them be granted on similar lines.

13. As regards the metric system, weights of this system are practically used nowhere in India at the present time; to provide for future contingencies it might be advisable to lay down that their use may be permitted under license in a manner similar to that recommended in respect to British weights.

14. These recommendations regarding licenses only refer to the actual use of the weights in India. We do not consider it necessary to prohibit in any way the use of either British or metric weights in documents, or their use in any way in Burma.

15. The British yard is recognized practically throughout the whole country and is recommended as the unit of length to be adopted by the vast majority of witnesses including some of those who would have the metric system of weights. We recommend that it be adopted as the fundamental unit. At the same time we see no necessity to insist on its multiples and submultiples alone being used. We recommend that the commonly recognized measures in the various provinces be standardized in respect to it. Thus the *hath* of Northern and Central India or the *taung* of Burma would be standardized at 18", the *balisht* at 9", the *pirah* at $\frac{1}{2}$ of the yard or 21". We give some more examples of our proposals in this respect in Appendix C, but it must be remembered that these proposals are not intended to be exhaustive, further enquiry may show it to be advisable to recognize some other measures fixing their length in terms of British measure.

For measures larger than the yard, there are two classes, those used in measuring distances, and those used in connection with land survey. For the

former class, the mile and furlong have practically superseded every other measure and we recommend that no other be recognized; this involves the abolition of the special 5,000' mile of the Punjab canals. For the latter class the measures to be proposed depend on the system to be adopted for areas, which (see paragraph 16) is the acre and its decimal subdivisions. We, therefore, recommend the use of the chain of 66 feet subdivided into 100 links.

16. *Areas.*—As already shown, the indigenous measures of area show an absolute lack of system, and wherever land survey has been undertaken for revenue assessment purposes, *i.e.*, throughout all India except the permanently settled areas in Bengal, Madras and Bihar and Orissa, it has been found necessary to adopt some unit based more or less directly on the British system of measures of length. In many provinces, the British acre or a local measure easily convertible thereto (as the *bigah* of $\frac{2}{3}$ acre of the United Provinces) has been adopted, and in several the acre and its decimal subdivision into 100 or 1,000 parts (according to the size of the fields); *e.g.*, Madras, Central Provinces except Berar, and Burma is in force while in certain others it is being adopted as districts come under survey (Bengal) or resurvey (United Provinces), elsewhere (Punjab, Berar and Bombay), the acre is used but subdivided according to the British or some local system. Thus, throughout India and Burma except Bengal, Bihar and Orissa and Assam, the acre is the fundamental unit of area, and the system of subdividing it decimally is coming more and more into vogue, and even in Bengal, Bihar and Orissa and Assam it is gradually being adopted. We recommend that it be adopted throughout India, and that it be subdivided decimally into 100 cents or 1,000 maunds (usually known as decimals). We propose that the method of introducing these measures be that adopted in many places, *i.e.*, that at next survey of the district the areas of all fields be recorded in the village papers or in the case of permanently settled areas, slips given to the tenants and other records in terms both of the current local measure of area and of acres and cents (or mills), and that it be required that areas be given in documents and suits in terms of acres, etc., with or without, at the option of the writer, the same area in terms of the local measures. Mr. Rustomji, however, would not insist on the decimal subdivision of the acre, thinking it hardly worth altering the records to do this in Bombay and Berar.

17. *Measures of capacity (dry).*—These are extraordinarily various, and their use is almost entirely (except in Burma and to some extent in Madras and the Punjab) local, and chiefly confined to retail trade. They vary from district to district and often from place to place in the same district. The desire for uniformity, though distinct, is not so strong as in the case of other measures. We are of opinion that it is unnecessary and would be extremely difficult to attempt to lay down one hard and fast system for the whole country. On the other hand, we are strongly of opinion that some action should be taken. We, therefore, recommend that the various measures in use in the different parts of India be standardized so as to contain some definite weight of water.

Existing measures are almost invariably now, whatever may have been their origin, fixed, so far as they are fixed, according to the weight of some grain (usually rice or wheat) that they contain, and there are a large number supposed to contain an integral number of seers of grain. The wheat-water ratio being 4:5, there is much to be said for adopting, as far as may be possible, the bulk of $1\frac{1}{4}$ seers of water as the unit of capacity in precisely the same way as the bulk of $1\frac{1}{4}$ lbs. of water is the British pint. We recommend, therefore, that the various measures be standardized, as far as possible, as multiples of one holding $1\frac{1}{4}$ seers of water. A consideration of the evidence before us and of the reported capacities of the various measures extant leads us to think that this will prove a more practical unit than the bulk of one seer of water. Almost the only substantial disagreement to measures based on this is the capacity seer holding 160 tolas of water introduced in East Khandesh. We have scarcely sufficient evidence to make definite recommendations with confidence, but we think it may be useful to place on record what we think might be suitable

equivalents for some of the principal measures in use in various parts of India, though quite aware that more complete inquiries may show it to be advisable to modify these proposals; and such are the more necessary owing to the essentially rural nature of these measures in many parts. (See Appendix C.)

As far as possible any one name should indicate a measure of only one size throughout India, but we doubt whether this will be possible to enforce in respect of the measures bearing the names *topa* and *pahi*, which indicate at present two or more distinctly different measures in different areas. Thus, the *topa* indicates a measure containing about $2\frac{1}{2}$ seers of water in the Central Punjab and one of roughly double that size in the Western Punjab and Frontier Province (Chapter IV, P., 14); and the *pahi* of Jhansi in the United Provinces is approximately double that of the *pahi* of Akola in the Central Provinces. In view of the essentially local character of most of these measures, we do not think that discrepancies of this sort are as objectionable as they at first sight appear, though undoubtedly if it be found possible to do away with them we are of opinion that this should be done. We are, however, of opinion that the same name should not be recognized as denoting both a weight and measure; this we think objectionable as liable to lead to confusion if not also to fraud. Mr. Rustomji objects to these proposals regarding names thinking it to be impracticable to give effect to

As regards the question of heaped and struck measures, while we consider struck measures by far the most satisfactory we doubt if the custom of heaping could be stopped in those parts of the country where it is in force. We, therefore, recommend that, wherever possible to do this, the dimensions and shape of the mouth of the measure be prescribed as well as their capacity, which latter should be determined in the way above proposed without reference to the quantity contained in the heap—practical experience will very soon show what that is. If it is found possible to introduce striking the form of the striker should be prescribed. A suitable form is a stout cylindrical rod or roller. Mr. Rustomji would, however, make no attempt to interfere with the custom of heaping under any circumstances.

18. The dry measures of Burma as already noted, stand on a very different footing from those of India. The fundamental unit here is the basket or tin the variations of which have been fully discussed as also the opinions as to how it should be standardized. For reasons set forth at length in these passages we think that the basket should be standardized at 8 gallons, except in Akyab where a basket of 4 gallons should be recognized. On the analogy of Section 8 of the Corn Return Act, 1882, which requires that a bushel of wheat, barley and oats be deemed equal to 60, 50 and 39 lbs, respectively, we would strongly urge that the same system should be adopted in respect of paddy as in respect of other agricultural produce, *i.e.*, that the basket of paddy should be of a standard weight and that paddy be dealt in by weight instead of by the peculiar *mesuro-cum* weight system at present in force. As to what weight should be taken as equivalent to the standard 8-gallon basket, we have scarcely sufficient evidence to state with certainty, but we are inclined to think that $12\frac{1}{2}$ visses or 45 lbs. of paddy or 75 lbs. of rice is approximately correct. We are aware of the difficulties involved in a change of system, but are inclined to think that they are somewhat over-estimated by the Rangoon Chamber of Commerce

2 lamò	=	13 salò
2 salòs	=	1 lukwot
3 lukwots	=	1 pyi
2 pyis	=	1 sayat
3 sayats	=	1 seik
3 seiks	=	1 khwò
2 khwòs	=	1 tin or "basket"

All other measures would depend on the basket, and we recommend recognition of the table given in the margin

19. *Measures of capacity (liquid)*—There are very few true indigenous liquid measures in India or Burma. Rarely some of the dry measures are used for liquids, but as a rule liquids are in reality sold by weight, though for convenience sake a measure made to contain a definite weight of the particular

liquid for which it is used is often employed. Occasionally, as in the case of the garwi of the Punjab (a measure containing a seer of milk), such a measure has a name different from that of the weight it contains, but as a rule this is not the case. We think it unnecessary to prescribe any liquid measures, but that it should be prescribed that either one of the dry measures of a shape suitable for the purpose be used, or else that liquids be sold by weight and that in the latter case if a vendor wishes to use for convenience sake measures containing particular weights of particular liquids he shall be legally bound to see that such is really the case, and to check by weight, if so desired by any customer, and for this purpose be bound to keep scales and weights on his premises. We further think that it is desirable that a limit should be prescribed in respect of some liquids, such as oils and ghi, beyond which sale must be by weight only or by standard liquid measures. Mr Rustomji would not permit the use of measures made to contain definite weights in the manner above described, as this would lead to multifarious measures according to densities, but would insist on the use of weights direct or else of standard measures, irrespective of quantity, whichever might be preferred by the parties concerned.

20. As there seems no fear of fraud being perpetrated through permission to use British measures of capacity (dry or fluid) concurrently with Indian measures, which was the reason for the recommendation made as regards licenses for the use of British and metric weights, we think there should be no restriction placed on the use of British or metric measures, dry or liquid, provided these conform to Board of Trade regulations

21. For cubic content there are also practically no indigenous measures, and opinion generally favours the adoption of British measure. We think, therefore, that that measure should be prescribed with permission also to express cubic contents in terms of any of the legal measures of length.

22. A certain number of opinions has been given as regards the question of permitting the use of weight and measure side by side for the same commodity in the same place. Where such is the general custom, but little opposition to its continuance is expressed; it is mainly where it is somewhat unusual that it is objected to. There is, however, some opinion against measures in consequence of the greater ease with which the measurement can be manipulated. We do not think it necessary to recommend any interference with existing custom in this respect. With standard weights and measures, and different names for weights and measures there should be very little risk of fraud or mistake.

23. *Measures for the introduction and enforcement of a uniform system of weights and measures.*—The Committee in their list of questions put forward certain suggestions for criticism which it will be convenient to consider in a somewhat different order from that in which they occur in the questions.

24. *That tables of the authorized weights and measures and conversion tables showing their connection with the weights in current use be published in the District Gazettes in the vernaculars and English, and that copies be kept by the village headmen.* This proposal is generally approved. The publication in the District Gazettes only applies to Madras. Criticisms have been practically invariably in the way of recommending wider distribution of tables. We would suggest two methods of publication :—

- (a) in the form of posters suitable for putting up on notice boards, etc., which would show the new tables of weights and measures with the equivalents in local measures, and
- (b) in pamphlet form, giving the same information with possibly information as to where the new weights are procurable. The posters we think should be put up at all Revenue and Sub Registrars' Offices and Civil Courts, also at Post Offices and on the village chaupal, athai, chavadi or chauri, while the pamphlet forms should

be sent to all schools, patwaris, village headmen, bazaar chaudharis, market superintendents and bazaar-goungs, co-operative societies and the contents be printed on the back of the headmen's sanad of appointment and in the thugyi's almanac and the Burma Village Manual, and as far as it may be possible to arrange this, on the covers of school exercise books. A copy of the pamphlet might also for some time be issued with each set of weights. We would specially urge the necessity of all such notices being printed in the vernacular of the locality and in extremely simple language.

25. *That the use of the standard weights and measures be taught in all recognized elementary schools and the use of no other weights and measures be taught in*

New systems to be taught in schools *such schools.* This is fairly generally approved, subject to the proviso that foreign systems be not excluded. Some consider it advisable to defer omission of existing systems until such begin to fall into desuetude. We think, however, that only the standard system should be taught together with, for a certain period, tables of conversion of the old into the new systems (such as the British or metric) to be also taught where deemed advisable.

26. *That specimens of the authorized weights and measures in general use should be supplied by Government to all Revenue officers in districts, all police*

Distribution of samples of authorized weights and measures *stations, all village headmen and all recognized elementary schools.* The distribution here referred to is intended for purposes of instruction. The great majority of witnesses approved these proposals and the greater part of the criticism received took the shape of proposing additions rather than the reverse. The chief additions proposed were that samples should also be issued to patwaris, bazaar chaudharis, market superintendents and bazaar goungs, co-operative credit societies, heads of panchayats and baradaris, mullas and pandits (in the North-West Frontier Province) and to hpongvi-kyauungs in Burma. Very few even of official witnesses urged what is of course the chief objection to wide distribution, *viz.*, the expense thereof, and this we feel is the chief difficulty. It must, however, be remembered that the object of the distribution being educational, the weights and measures might well be recalled and sold after the new system was properly understood. Moreover, if the systems adopted be those recommended by us, we think the financial difficulty will be less, as the distribution of sample weights will only be necessary in those parts of the country where the standard weights are not at present known to an appreciable extent. This reduces the area in which distribution is likely to be required to be the greater part of Madras, and possibly parts of Bombay, the United Provinces, Punjab and the Frontier Province, and (as regards the basket) Burma. We think further that even in Madras it would be required in but few of the larger towns, while elsewhere the systems proposed are generally well-known in all towns, so that practically only rural areas and the smaller towns would have to be considered. The necessity for such distribution is also intimately connected with the extent to which action is taken in the way of replacing existing weights and measures by those of the prescribed pattern considered below (paragraph 33). If replacement of weights and measures be freely carried out, we think distribution of samples on any extensive scale scarcely necessary. If, however, as we consider to be the case, such be deemed impracticable we consider that distribution should be widely effected. We would suggest that in those areas where the weights and measures to be introduced are not at present widely known, samples be sent to all recognized elementary schools, to the headmen in Bengal and in Bihar and Orissa (if there are any areas in those provinces requiring such action) the presidents of panchayats of chowkidars and to all bazaar-chaudharis, market superintendents and bazaar-goungs. In the Frontier Province, we think the suggestion that the services of headmen of panchayats and baradaris, mullas and pandits be enlisted in this matter probably a sound one. In Burma, it is deemed of special importance that the thugyis of at least the more important villages be provided with a standard basket, and this we recommend. If so extensive a distribution be found financially impossible, the smallest villages or those with no shops should be first omitted.

27. *That Government should stamp only authorized weights and measures and provide due facilities for stamping and verifying authorized weights and measures free of charge for a certain period.* The testing, correcting, stamping and inspecting of weights and measures is deemed a *sine qua non* by far the greater part of the witnesses examined, as also is the prohibition of the use of unstamped weights and measures after some prescribed period. We are of opinion that it is absolutely essential for this to be done and that it is the only practicable method of bringing about uniformity throughout the country. We are of opinion that the introduction of these operations is now desired by so large a section of the population as to make it most advisable for Government to undertake it. We would further recommend that testing, correcting and stamping be done free of charge in respect of the first set of weights and measures presented by the owner, provided that this be done voluntarily by him and within some specified period. If this be deemed financially impracticable it might be feasible to charge fees from the beginning, but we are strongly of opinion that, if possible, the stamping should be done free to the extent suggested with a view to minimize difficulties at the outset.

28. *That the import, manufacture and sale of other weights and measures should be declared illegal; that no import duties be levied for a certain period on authorized weights and measures, etc.; and that Government should sell at cost price or at a profit authorized weights and measures.* It is convenient to discuss together the whole question of the manufacture, sale and provision of weights and measures. The general opinion is against allowing import free of duty; it is thought that such action would not appreciably diminish the retail price, and at the same time would tend to discourage the local manufacturer. With that view we agree, and consider that no such action is required.

While there is a fair amount of opinion that the provision of weights and measures should be left to private enterprise, there is on the whole a preponderance of opinion in favour of Government supervising it in some way or other, and it is obvious that some action of some sort at least in some parts of the country be necessary to ensure a proper supply of the standard weights and measures. There have been various suggestions, amongst which may be mentioned that manufacturers or vendors of weights, or both, be required to obtain a license, such licenses to be given free of charge and freely, the sole object being to enable Government to prohibit the manufacture or vend of incorrect weights. Others have suggested that it be merely prescribed that no weight be sold until it has been tested and stamped by the authority appointed for this work. Others again would favour the leaving of the testing and stamping of weights to the purchaser. We are of opinion that the safest and most convenient course would be to require that all weights and measures be tested and stamped before they leave the premises of the manufacturer or importer, and that the retail vendor be held responsible for not selling unstamped weights or measures. It might be found convenient for Government to enter into an arrangement with a manufacturer to stamp weights and measures up to a certain limit for a fixed payment, so as to reduce the sale price as far as possible. As to how far it may be necessary for Government to arrange for the supply and sale of standard weights we consider local conditions must determine, but we think it probable that in some parts of the country at least, such as backward and rural tracts, it will be necessary or at least advisable for such to be done. Where this is necessary, we would suggest that weights be provided by Government agency and sold direct or on commission in a manner somewhat similar to that in which stamps are sold, the prices to be such as to cover the cost of purchase and management, and not to discourage private trade.

We further think that definite patterns should be prescribed for authorized weights and measures. Every weight and measure should, as far as possible, show its denomination clearly in the vernacular and also bear the maker's name.

29. *That authorized weights and measures should be adopted on all transactions in which Government, Railways or bodies controlled by Government are concerned.* This met with universal approval. It was suggested that District and Municipal Boards should be specifically added, but we consider that these are included among bodies controlled by Government.

30. *That only stamped authorized weights and measures should be used after a certain date in markets under the control of Government or any local body.*
Use of authorized weights and measures in Government markets.
 This was generally approved though one witness pointed out that such action if taken in respect of a system of weights not generally approved is more likely to ruin the market than to encourage the use of the weights. We think that there is little fear of this being the case if the systems proposed by us are adopted and therefore recommend action on these lines

31. *That after a certain date documents should be drawn up only in terms of authorized weights and measures to be used in documents. civil courts should not recognize any other weights and measures in documents executed after the prescribed date, an exception being made in reference to documents relating to external trade with countries in which the authorized weights and measures are not recognized, and that documents drawn up after the prescribed date in terms of unauthorized weights and measures should be refused registration.* Opinions on these two proposals are not numerous; the Bengal Chamber of Commerce favours both, that of Bombay thinks both "inadvisable at present", the Punjab Chamber opposes, those of Rangoon and Madras express no opinion. The proposal must be considered together with that recommended in paragraph 12, which if accepted would require that in any registered document the names denoting the authorized weights and measures shall denote them and nothing else. The logical result of such action would be to refuse to recognize other weights or measures of names different from those of authorized weights or measures. We would therefore recommend that registration of documents containing references to weights or measures of names other than those of authorized weights and measures be refused, the document being merely handed back for correction. Where the names are the same as those of the authorized weights and measures, registration should be effected without it being incumbent on the registration officer to make any inquiry as to whether authorized weights and measures of those names are referred to or not, the Court is to assume such to be the case and to admit no evidence to the contrary. This method would dispose of all documents save such as require no registration and oral agreements and as regards such we think that the presumption should be that authorized weights and measures are alone used, and that as regards weights or measures of names different from those of authorized weights or measures the Court should presume ignorance and that evidence to show that the former are different from the authorized weights or measures of the same name and what the latter are in terms of authorized weights and measures should only be admitted on payment of special costs. These proposals are considerably less drastic than the English law which makes documents in terms of unauthorized weights or measures void (Weights and Measures Act, 1878, Section 19). Mr Rustomji would however not inflict special costs in such a case (see his note at the end of paragraph 41 below).

32. *That the use of weights and measures except those authorized should be illegal throughout India after a certain date, and that it should be presumed that any unauthorized weights or measures found in the possession of a shopkeeper, trader or merchant thereafter are intended to be used as such and that such possession should be illegal.* There is no strong body of opinion against these two proposals. The former is certainly generally regarded as an inevitable necessity, and the latter also to a great extent. We recommend that the use of such weights and measures should be declared illegal, and that it should be presumed that all weights and measures found on the premises of any shopkeeper, trader or merchant are for use as such, unless

he be able to prove the contrary. We do not think that with an appropriate procedure this should prove an undue hardship in actual practice.

33. *That Government should replace free of cost by corresponding authorized*
Replacement of weights and measures free of cost by Government. *weights and measures those no longer authorized but stamped by or under the authority of Government before a certain period.* This was generally approved, though a considerable number urged the expense of so doing. As the proposal stands, it would only apply to Madras and a very few Municipalities in the Central Provinces and Burma, as elsewhere there has been no stamping. Witnesses have, however, usually interpreted the question in a more general sense, and taken the suggestion to be one for the general replacement of existing weights and measures. We think, however, that anything of this sort is financially impossible, or at least that the advantages from such a course are incommensurate with the cost, considering the small cost to the individual of a set of weights or an ordinary measure. But we would suggest that, where necessary, facilities be provided for the purchase of old weights incapable of correction as old metal either by Government itself or through some contractor or otherwise, so as to ensure their being rendered useless as weights. Mr. Rustomji dissents thinking this to be too large an undertaking.

34. *That Government should alter or make grants for the necessary alterations of weighing machines which are in British India at a certain date and in good order and in use or for sale.* The majority of those who have expressed any opinion on this point are against it. It is pointed out that the cost of doing this is small and that the persons affected are such as are well able to afford such small cost. Such a change was effected on the Burma Railways when the viss was altered and gave rise to but little trouble. We consider that any action of this kind is unnecessary beyond seeing that as far as possible there are facilities available for the necessary corrections. If the systems adopted be those recommended the necessity of anything of the sort will to a large extent be non-existent.

35. Although not strictly within the scope of our inquiries, we think we should mention that several witnesses suggested that scales also should be inspected and tested. We think, however, such a course would at present be scarcely practicable on any extended scale, though it is distinctly an object to be aimed at, and one which it might be found possible to give effect to even now in the Presidency Towns and some of the larger Municipalities to some extent, as for example in Municipal Markets.

36. The scheme which the Committee would suggest is somewhat as follows:—In the first place, if this be necessary owing to non-acquaintance with the new system, samples, pamphlets and posters should be distributed in the manner proposed in paragraph 24 above. Next, arrangements must be made for the provision of standards for testing, correcting and stamping of weights and measures, and to ensure the necessary supply of authorized weights and measures. The Local Government would then notify that from a certain date none but stamped authorized weights and measures are to be used in certain places; and that from the same date none but these weights are to be used in all official and quasi-official transactions. By quasi-official transactions we mean transactions in which District and Municipal Boards and other bodies controlled by Government are concerned. At the same time it should be intimated that up to some specified date weights and measures would be tested, corrected and stamped free of charge or at a reduced charge, under certain conditions. Such date might well be fixed so as to be somewhat later than that from which only authorized stamped weights were to be used. The insistence on the use of authorized weights in documents might well have effect from a still later date, while the absolute illegality of unauthorized weights, and the presumption that the possession of such was for use would come later still. The exact periods must, we think, be left to the discretion of Local Governments, who would doubtless take

into consideration local circumstances, such as, the extent to which the system of weights and measures to be enforced differs from that in ordinary use, the general intelligence and education of the people, and the ease with which arrangements for the supply of new weights and measures and their stamping, etc., could be made. Thus we think it would probably be quite possible to insist on the use of stamped weights and measures of the systems we have recommended in a city such as Delhi within six months of the promulgation of the order and would only allow free testing, stamping, and correcting to any degree for the same period; the use of authorized weights and measures in documents might be enforced within a year of the issue of the notification and absolute illegality enforced within two years. In Delhi these weights are those in ordinary use and little more would be required than to arrange for the testing, correcting and stamping; there would be no need of educating the people in their use. For a district in which this was the case we think that the first period might be lengthened from six months to a year, for documents two years might be allowed and for absolute illegality three. Longer periods would be required for areas where the new weights were less known, but we are strongly of opinion that too long a period between the issue of a notification and its coming into force is inadvisable as in such case there is great fear of nothing whatever being done until within the last few months before the period expired. We would suggest that in places where the system adopted is not known to the people the distribution of sample weights, pamphlets and posters be made not less than six months before the issue of a notification. We consider that in the case of backward areas it would probably not be advisable to issue any notification until the new system had to some extent come into force in the larger towns.

A notification might issue immediately for the use of stamped authorized weights and measures in all municipalities where no preliminary distribution of samples was deemed advisable, within a year of issue thereof, and in Notified Areas and Towns with anything in the shape of local self-government (as the Act XX Towns of the United Provinces) within two years of issue, leaving the rural areas unaffected otherwise than by the issue of notices regarding the new tables, and possibly of sample weights and measures. After the expiry of the two years notifications might issue requiring the use of stamped authorized weights in certain rural areas within another two years, though it is quite possible that it might be suitable to take up some rural areas where the use of the 80-tola seer is at present customary even earlier—perhaps simultaneously with some of the towns and so on, the areas being selected with regard to (a) their general state as regards education, intelligence and trade, (b) the extent to which the knowledge of the authorized system existed or was penetrating from the towns, and (c) the staff available for explaining and introducing the system. In Madras we think the less acquaintance with the proposed system is likely to be largely counterbalanced by the fact that the people of that Presidency are more accustomed to Government action in respect to weights and measures.

We think that all such notifications should be issued so as to have effect within at most two years from the date of issue. We further think that it should be possible to enforce the use of stamped authorized weights throughout India within ten years of the date of beginning to make the arrangements, with the exception perhaps of some specially backward tracts such as the Madras Agency Tracts and parts of the Central Provinces and Chota Nagpur.

37. In the preceding paragraph we have considered the method of introducing the new system. For its maintenance and to ensure the continued correctness of the weights and measures in actual use a system of inspection is necessary. As to what this should be there are two alternatives:—(a) to require periodical production of weights and measures for the purpose of testing, correcting and stamping. Such production to be annual in urban areas and triennial in rural; and the weight or measure after correction to be stamped with a stamp indicating the year of stamping. In this way the work of the inspecting officer would be merely to see if the stamp bore the correct date or not, though of course if an officer of sufficient standing, e.g., Naib tahsildar or higher, had reason to believe a correctly stamped weight or measure to be incorrect he should not be precluded from taking action; and (b) to rely on inspection only, merely insisting

on the use of weights and measures which had been stamped before sale. In this case the inspecting officer would have to have with him scales, weights and measures sufficiently accurate to test the weights and measures of the trades, and also to possess the skill required for this purpose. Which method is advisable must depend largely on the staff to be employed, a full discussion regarding which will be found in paragraphs 38 to 40.

38. The staff to enforce the regulations regarding weights and measures must vary from province to province and we are not able to do more than indicate the general lines that should decide what this should be. Such staff falls naturally into two parts:—(a) the executive staff, which will do the testing, correcting and stamping of weights and measures, and (b) the inspection staff.

39. (a) *Executive staff*.—The former may either be peripatetic or fixed. In favour of a peripatetic stamping staff it is urged that there will be much less convenience to the owner of the weights and measures to be stamped if this be done near his residence, against it is the fact that over such a party supervision cannot but be decidedly lax; and we have had it urged that there is considerable fear of corrupt practices in such cases unless the party is in charge of a fairly well-paid officer. For a fixed party with headquarters at a tahsil, supervision would be more complete, though the Tahsildar has now so much to do that he would in most places have but little time to spare to look after the stamping party. If, however, our proposal be accepted that no new weights or measures be sold without being first tested and stamped, the arrangements for doing this after the first year or two, during which existing weights and measures would be stamped, would be greatly simplified. Weights are made by comparatively few persons, and it should not be difficult to arrange for their stamping and testing at convenient centres; measures are more widely made, but even in their case probably by far the greater portion is made in a comparatively small number of large places, and it should be possible to arrange for the testing and stamping party to have its headquarters at the district headquarters or possibly the tahsil, and from time to time go on tour after giving due notice. This would probably suffice to provide for the periodical testing, correcting and stamping recommended in paragraph 37. Traders practically always have occasion to visit some considerable centre once or twice in the year and could get their weights and measures put right at such times.

The extent to which it would be advisable for a stamping party to tour would depend on the type of officer in charge thereof. We consider that, if it were found possible, the best arrangement would be to place the party in charge of an officer of the Naib-tahsildar rank, such Naib-tahsildar to be one of the regular district staff selected from among ordinary Naib-tahsildars or candidates for Naib-tahsildarships and eligible for promotion in the ordinary way. He should receive some technical training in the work and not be placed on this duty for more than two years at a time. If this were done, we think it would be possible to allow touring without any more restriction than that it should be so arranged as to give all shopkeepers reasonable facilities for the testing, correcting and stamping of their weights. If a lower grade officer were in charge, it would probably be advisable to keep the party more at the headquarters of the district or at least of a tahsil, and only allow them to visit the larger centres. The party might consist of the Naib-tahsildar, one (or possibly at first more) blacksmiths and a peon or two. We are very strongly of the opinion that it should be part of the regular district revenue staff subordinate to the District Officer and not under a separate Department. This we consider most necessary at the beginning of the scheme, as unless the sympathies of the district staff are enlisted, success is improbable, and such is less likely to be the case if the work is done by a separate Department.

As regards the financial aspect, we think that after the preliminary period of free stamping, fees should be charged at a rate calculated to cover the cost of the establishment. It would, we think, be found possible, after the system had gone into working order, to considerably reduce the number of stamping parties, and to possibly have one for two or more districts where these are small.

The larger municipalities should arrange to do their own stamping, the smaller ones, notified areas and towns would probably find it convenient to share in the district stamping parties.

40. (b) *Inspecting staff.*—Witnesses have been almost unanimous in recommending that the subordinate Police be not employed; a certain number think that officers of a rank not lower than Sub-Inspector might be utilized, and we think that this should be done, though possibly it would be advisable to defer doing so during the introduction of the new system. Mr. Rustomji would not employ any member of the Police under any condition; he thinks that the prejudice against their employment is too strong. In municipalities, opinion is practically universal that the work of inspection be arranged for by the Municipal Board, and as a rule it is urged that only municipal servants drawing a substantial salary—Rs. 80 is a general limit—should be employed. For some of the larger cities and the Presidency Towns, a Special Inspector is usually deemed advisable, and where this is the case he would also be in charge of the stamping staff. For example, the staff recommended for both duties in Karachi is, 1 Inspector on Rs. 150, with a carriage allowance of Rs. 30; 1 adjuster on Rs. 50; 1 clerk on Rs. 40; and 2 coolies on Rs. 12 each or a total monthly charge of Rs. 294 to which would have to be added possibly Rs. 16 for contingencies, making a total annual charge of Rs. 3,720. If it were decided also to test scales (paragraph 35), an Additional Inspector on Rs. 150 with a carriage allowance of Rs. 30 and two coolies at Rs. 12 each is considered necessary. The members of the Board would also be able to render valuable assistance, and every effort should be made to enlist their services, both in the way of inspections and supervision of the inspecting staff. The bazaar chaudhari, market superintendent or bazaar-goung as he is variously called could also, we think, be usefully employed for inspection purposes.

In rural areas, if our suggestion that a Naib-tahsildar be in charge of the stamping party be accepted, he would be also able to do a considerable amount of inspection and would be able to aid in supervising the inspecting work of such of the various *ex-officio* inspectors we propose below as are subordinate to him in rank. We would very strongly recommend that even before the issue of any notice requiring the use of stamped weights by a certain date, preferably simultaneously with the distribution of sample weights where this is done, a Naib-tahsildar be deputed to the tract concerned to tour throughout it and to explain what is required to the people and to generally initiate them into the new system. Such officer may, we think, well take charge of the stamping party when this is formed.

Such an officer would, however, not be able to do the inspection required to give effect to the orders, and we would recommend that the revenue staff should also be empowered; this would include the Tahsildar, ordinary Naib-tahsildar, touring kanungo (or, Inspector of Land Records), and possibly the patwari. But in addition to this we would very strongly recommend that the village headman be employed. The witnesses have almost unanimously recommended his employment and we think that if properly utilized he could do more to bring the new system into force without an undue amount of friction than anyone else. Members of the District Board, Honorary Magistrates and village munsifs could also render valuable assistance and should also be made *ex-officio* inspectors of weights and measures. We would suggest that officers below the rank of Naib-tahsildar be empowered to examine weights in use in shops and if they had reason to believe that they were contrary to regulation, to take possession of them in presence of some respectable neighbour and to forward them with a report to the nearest Magistrate. Such Magistrate, if he saw no sufficient reason to summon the owner, would merely notify him that such weights or measures had been received by him and that they would be confiscated and destroyed unless he appeared and showed cause to the contrary within some specified period. As a rule it would, we think, be unnecessary to summon the owner, and he would thus avoid the trouble of attending at a distant Court unless he really thought it worth while so to do.

We would empower any Magistrate to inspect, and seize weights and dispose of any case concerning those weights on the lines of the United Provinces Village

Sanitation Act (Act II of 1892), and we think that the Naib-tahsildar in charge of a stamping party might be similarly empowered. We would include among such Magistrates the thugyi or village headman of Burma, and the village munsif of Madras. We would not allow a search to be made save on the issue of a warrant and in accordance with the usual procedure laid down in the Criminal Procedure Code. We do not recommend, as some of our witnesses have proposed, that weights and measures cases be disposed of by the Revenue Courts as such, but we think that they should be treated as non-cognizable third class cases.

The foregoing proposals are unsuited to Bengal, Bihar and Orissa and parts of Assam where there is neither revenue staff nor village headmen. The place of the latter is to some extent taken by the President and Members of the Chaukidari Unions and we think it possible that the duties we propose to assign to headmen in other provinces may be undertaken by them. To replace the revenue staff is more difficult. It might perhaps be feasible to place the stamping and other operations in charge of a Sub-Deputy Collector on lines similar to those suggested for the Naib-tahsildar, or to work through the Excise Department or Income-Tax Inspector. All we feel able to do as regards these provinces is to recommend some system as near as may be on the lines suggested for provinces possessing a revenue staff and that Police agency should *not* be employed.

It is impossible to lay down any hard and fast rule to be adopted throughout India and the foregoing must be regarded as a sketch of what in the light of the evidence produced before us appears to be possible—to be modified to suit local conditions. A considerable number of witnesses have suggested that the patwari should not be entrusted with any powers in this connection, and it is quite possible that this may be advisable in some provinces, or he may in parts have more than enough to do in connection with his own duties, but he is probably the only possible man in such an area as the Kumaon Division of the United Provinces. Again, the term headman is general, we include therein the mukhia or mukaddam of the United and Central Provinces, the zailadar and safedposh of the Punjab and Frontier Province, the patel of Bombay and Berar and the thugyi and ywathugyi of Burma.

Several witnesses have suggested that a local committee of respectable shopkeepers and others would render valuable assistance in introducing and enforcing the system in some places, and we think this possible in such places as bazaars or where there is any considerable body of traders, more especially when these are united in any way in the form of a panchayat, or association of any sort.

Some witnesses have suggested the employment of Excise staff. On the whole, however, we are inclined to think this scarcely advisable at any rate to begin with, except possibly in Bengal, Bihar and Orissa and permanently settled parts of Assam where there may be no alternative. It might hereafter in some provinces be found possible to amalgamate the Weights and Measures and Excise staffs to a greater or less extent. In such case the duties of the Naib-tahsildar in charge of the stamping party would possibly be amalgamated with those of the Excise Inspector or Sub-Inspector, but there are difficulties in such a course, one of the chief of which is that in many provinces the Excise staff is not deemed part of the ordinary district staff, an arrangement which is sometimes productive of friction, which would be even more objectionable in connection with weights and measures than with Excise.

41. To revert to the alternative methods of maintaining the correctness of weights and measures referred to in paragraph 37, we assume that the stamping parties which would be required for method (a) would be in charge of a Naib-tahsildar, and that for method (b) there would also be a Naib-tahsildar, specially provided, and that the *ex-officio* inspecting staff would be the same in both cases. The arguments that might be urged against method (a) are that it would be an expense to and unduly harass traders to require them to produce their weights and measures annually or triennially, that unless the stamping party were carefully supervised there would be risk of extortion by it, that there would be account difficulties in respect of the fees to be levied for stamp-

ing after the period of free stamping had expired, and lastly, that a fraudulent trader could alter a duly stamped weight or measure. We do not think these arguments are of much weight. We do not think annual or triennial testing, correcting and stamping unduly expensive or harassing. The expense would be trivial and as we propose that the stamping party go on tour it would probably only be the few traders who reside in villages with but one or at most very few shops who would not be able to get their stamping, etc., done without leaving their villages. As regards the risk of extortion, we propose that the stamping party be in charge of a Naib-tahsildar and deem it essential that he be a member of the ordinary district staff eligible for reversion to and promotion in the ordinary line in exactly the same way as any other Naib-tahsildar. We think that in such circumstances honesty should be presumed and certainly see no greater reason why such a man should speculate over stamping than why he should accept money in lieu of taking action in respect of incorrect weights and measures when found. Account difficulties should not prove any greater than they are in the case of pounds; in fact, this should be less as we assume that a man of a Naib-tahsildar's rank is in charge and are, therefore, entitled to presume honesty. As regards the possibility of fraudulent alteration after due stamping, while it is impossible to guard completely against this, the superior inspecting staff would not be precluded from taking action in respect of a duly stamped weight or measure if they had sufficient reason to believe such to be the case, while the necessity for producing such weight or measure for periodical inspection and the consequent liability to detection and punishment for fraudulent alteration must act as a considerable deterrent. For method (b) in addition to the contrary of the arguments urged against method (a) greater simplicity is pleaded, and this last is undoubtedly true. But we think that this would be gained at too great a loss of efficiency.

Apart from the Naib-tahsildar with or without his stamping party, reliance for maintaining the regulations is placed on a large number of *ex-officio* inspectors not possessed of any training, but so distributed that they are practically liable to turn up anywhere and at any time. If periodical stamping is insisted on the only thing that it is necessary for such an inspecting officer to do is to look at the weight or measure and see if it bore the stamp indicating that it had been stamped within the prescribed period. This is within the power of any illiterate person to do; he merely has to pick up the weights or measures as they lie in the shop. If, however, periodical stamping be not insisted on, it becomes necessary for the inspecting officer to be provided with a set of scales, weights and measures sufficiently accurate to enable him to test the weight or measure on the spot before seizing it. We thus practically lose the use of every one of our *ex-officio* inspectors, once the traders have adopted the use of authorized weights and measures stamped before purchase (paragraph 27) and have to rely solely on the one solitary inspecting Naib-tahsildar. Such Naib-tahsildar, moreover, being encumbered with his scales, weights and measures would be required to be accompanied by a peon and would be very soon recognized, his chances of detecting any incorrect weights would obviously be limited to the first shop he visited in a village or town, though of course not having to supervise a stamping party he would have more time for inspection. As regards expense, though compared with the foregoing we consider this a matter of comparatively small importance if our proposals are accepted, method (a) would result in no extra charge once the preliminary period of free stamping is over, as the fees charged should be at such a rate as to make the method self-supporting, whereas method (b) would involve the extra cost of the Naib-tahsildars.

Finally, there is a large body of evidence in support of method (a) and very little against it. [See Chapter V., U. P., 13 (f); B., 18; M., 22; P., 10 (f); Bo., 12(g); Bu., 13(e and f); N.-W. F. P., 9(f); A.J., 8(f); D., 10 (f); Ba., 10]. We are therefore strongly of opinion that method (a) should be adopted.

Mr. Rustomji Faridoonji, in disagreeing with our proposals as regards the *periodical* stamping of weights and measures in rural areas and the treatment of documents in Courts (paragraph 31) submits the following remarks :—

“The introduction of a uniform system of weights and measures in India, with a population in various stages of civilization and also

Objections to periodical re-stamping of weights and measures in rural areas

otherwise unhomogeneous, will be an achievement of great magnitude. It must be recognized that a considerable amount of inconvenience and some dislocation of trade, though absolutely temporary, must accompany such a great change from the custom of centuries. Under these circumstances the progress should be slow and cautious, and should not be encumbered with any Western methods, however desirable in themselves, which are likely to cause general irritation. I am of opinion that, while there is no difficulty in regard to the stamping, at the outset, of new weights and measures, and of those already in the possession of the people, the *periodical* stamping of weights and measures in rural areas is calculated to irritate the people. The case of the Madras Presidency is not to the point, as such stamping is not enforced by legislation, and such executive measures, to ensure a considerable amount of stamping, as have been found suitable for the population of that tract would not necessarily be so for the rest of the country. The stamping of weights and measures, free of charge, either by Government or by local bodies would be financially impracticable. The levy of petty fees, the character of the agency that it is financially feasible to employ for collecting such fees and for stamping measures, the audit of accounts in connection with such collections all over the country, and the amount of work that would be thrown on district officers, present great difficulties and are likely to be a source of much irritation. And this fact must outweigh all considerations of efficiency. The inspection of weights by the special Naib-tahsildar and the *ex-officio* agencies proposed by the Committee would ensure the use of stamped weights and measures, and to some extent their accuracy. Facilities may be provided at the headquarters of each tahsil for the correction of weights on payment. I entirely concur in the proposal to stamp all weights and measures in municipalities, and this may be possible years hence in rural areas, but it would not be expedient to consider this for the present.

I admit that my opinion is against the weight of evidence, but in India more than in other countries, there is a wide gulf between the acceptance of abstract propositions and their reception when materialized. And I believe I am supported by a small but respectable minority of witnesses. Further, the people generally asked for stamping of weights and measures free of charge. What I lay stress on is, however, not the pecuniary aspect of the case, but the trouble inevitably connected with a party of petty officials practically let loose on the people.

For the reasons at the commencement of this note, I also object to the proposed treatment of documents in Courts. In my opinion it would be sufficient to lay down that a Court shall presume any measures specified in documents to be authorized measures. The multifarious measures for different commodities, which to some extent obtain even in the United Kingdom, will, I think, gradually die out, once the uniform system is well established in the country. I do not approve of any penalty being imposed by Courts for the admission of documents drawn up in terms of unauthorized weights and measures.

In regard to all the measures recommended by the Committee, in which I concur generally, subject to dissent, where recorded, in the matter of details, I am of opinion that, while the *introduction* of a uniform system throughout India, almost at the same time, after the necessary preliminaries have been gone through, is quite feasible, and should be arranged for simultaneously, as far as possible, for all the provinces, to avoid or minimize the incidental inconvenience and confusion in business, the *enforcement* of all or any of those measures in any particular tract should be left, subject to

the control of the Government of India, to the discretion of Local Governments and Administrations, as this must greatly depend on local conditions".

42. Opinions on penalties were fairly unanimous in support of the application of all those suggested by us. Leniency in the beginning is advocated. We think

Penalties.

that at the beginning for a first offence the usual penalty should be confiscation or destruction, but that for second and subsequent offences fine should be infictible in addition to confiscation and destruction. We consider that destruction is essential to prevent any possibility of re-use. We do not think it necessary to allow imprisonment, otherwise than in the case of non-payment of a fine; any offence meriting such a punishment would almost certainly come under the Indian Penal Code.

43. If the scheme suggested by us is accepted, it will be advisable to provide

Provision of standards.

a set of bronze weights and brass measures at every district treasury. These standards would be used only to compare with the working standards in the hands of the stamping parties. These working standards we think should be of brass, and checked against the standards in the treasury when deemed necessary. A set of carefully made bronze standard weights and brass measures would be required at the headquarters of each of the larger provinces, by which the district standards would be tested, and an Imperial set of standards of scientific accuracy for the correct maintenance of the provincial standards. We would suggest that these latter might be kept at the Calcutta Mint, and that the whole of these standards be in charge of a small Standards Department, which we think might be attached to the Department of Commerce and Industry, and the provincial portions of which could supervise the training of the Naib-tahsildars (paragraph 88) and of the stamping parties. We think that all the standards required, save possibly the Imperial standards, could be manufactured at the Calcutta Mint.

We do not think that the terms of our reference require us to make more detailed proposals as regards the technique of the testing of the standards and the testing, correcting and stamping of weights and measures. Methods for doing this are set forth in great detail in the Board of Trade regulations (Statutory Rules and Orders, 1907, No. 698) and in the Weights and Measures Regulations for the German Empire (of the 8th November 1911) which latter contains clear and detailed instructions.

44. As regards the general effects of the introduction and enforcement of

General effect of standardisation.

a uniform system of weights and measures, most varying opinions have been expressed as will appear from a reference to the provincial summaries of the evidence. The great majority, however, are convinced of the ultimate benefit to all concerned. The general impression, and we agree therewith, is that such benefit would be most immediate, though finally probably of least relative value, and least temporary inconvenience, to the large trader, less immediate and of more ultimate real benefit to the small trader, and of most immediate inconvenience, but of the greatest ultimate benefit to the agricultural and poorer non-trading classes. It is agreed on all sides that it would interfere with the profits of the dishonest trader.

It being suggested that a radical change in system such as to the metric system might cause inconvenience in connection with the size of gunny bags, inquiries were made on this point. But with very few exceptions—the chief being the Deputy Commissioner of Akyab—it was universally agreed that anything of the sort would be either non-existent or of a very temporary character, and there are already various sizes in gunny bags.

45. A considerable number of witnesses from districts bordering on Native

Advisability of Native States adopting the same uniform system.

States have urged the necessity of those States taking similar action to whatever is taken by the Government of India in respect of weights and measures. Several of these States have already taken action in this direction and we think that all that can be done to induce the States to adopt the system adopted for British India should be done. (See Chapter V, U. P., 19; M., 39; N.-W. F., 14; A. J., 12; Ba., 15).

CHAPTER VII.—RECOMMENDATIONS.

We make, therefore, the following recommendations and suggest that so far as is necessary legislation be undertaken to give effect to them:—

1. The following systems of weights and measures should be declared the standard weights and measures for India and Burma. (Chapter VI, paragraph 8).

Weights.

INDIA.			BURMA.		
8 khaskhas	..	= 1 chawal.	2 small ywés ...	=	1 large ywé.
8 chawals	...	= 1 ratti.	2 large ywés ...	=	1 pè.
8 rattis	...	= 1 másha.	2 pès ...	=	1 mú.
8 máshas	...	= 1 tánk.	5 pès or 2½ mús	=	1 má.
4 táńks or 12 máshas	...	= 1 tola.	2 máts ...	=	1 ngámú.
5 tolas	...	= 1 chaták.	2 ngámús ...	=	1 tikal.
16 chatáks	...	= 1 seer.	100 tikals ...	=	1 peiktha or viss.
40 seers	...	= 1 maund.			
The tola is to be of 180 grains British weight.			The peiktha or viss is to be equal to 3·60 pounds avoirdupois or 140 tolas of 180 grains.		

Measures of length.

The unit to be the British yard, but with permission to recognize Indian, and Burmese measures standardized so as to bear a direct relation to this unit in the manner set forth in Chapter VI, paragraph 15; for higher measures the chain of 66' subdivided into 100 links and the furlong and mile of 220 and 1,760 yards, respectively. (Chapter VI, paragraph 15.)

Measures of area.

The squares of any authorized measure of length for small areas, and the British acre subdivided decimally for agricultural land. (Chapter VI, paragraph 16.)

Measures of capacity (dry).

For India.—The chief local measures of capacity to be standardized, at the most suitable integral multiple of a measure made to hold, 1½ seers of water, at a temperature of 86° F. or 30° C., and such other local measures as may be deemed necessary in proportion thereto. (Chapter VI, paragraph 17.)

For Burma.

2 lamès...	...	...	...	=	1 zalè.
2 zalès ...	...	...	...	=	1 hkwet.
2 hkweta	...	...	...	=	1 pyi.
2 pyis ...	...	...	...	=	1 sayat.
2 sayats...	...	...	...	=	1 seik.
2 seiks ...	...	...	...	=	1 hkwe.
2 hkwee...	...	...	...	=	1 tin or basket.

The tin or basket to be equal to one British bushel of 8 Imperial gallons. (Chapter VI, paragraph 18.)

Measures of capacity (liquid).

No separate measures, except in Madras, but liquids to be sold by any (See dissenting note of Mr. Rustomji, Chapter VI, paragraph 19.) authorized measure of capacity (dry) or by weights, with permission to use measures made to contain definite weights of particular liquids for selling small quantities of those liquids. (Chapter VI, paragraph 19.)

Measures of cubic content.

British cubic measure, or the cube of any authorized measure of length. (Chapter VI, paragraph 21.)

2. The use of British and metric weights should be permitted, subject to possession of a license for this purpose as regards use of the actual weights and subject to such weights being of a different shape from that prescribed for the authorized weights. (See, however, dissenting note of Mr. Rustomji, Chapter VI, paragraph 12.)

The use of British and metric weights in documents and of other British and metric weights generally should be permitted.

N. B.—By British and metric weights and measures are meant such British and metric weights and measures as are authorized for use in the United Kingdom under the Board of Trade Regulations.

3. Standards in accordance with the weights and measures prescribed in paragraph 1 should be provided. (Chapter VI, paragraph 43.)

4. No special weights or measures of any kind save as provided in paragraphs 1 and 2 above should be permitted for any purpose save that physicians and druggists may continue to use their special weights and measures for the preparation of prescriptions only, but they should use the authorized weights and measures for the actual sale of drugs, etc. (Chapter VI, paragraph 11.)

5. Authorized weights made after a prescribed date should be of a prescribed shape and of the following sizes:—

For India:—1, 2 and 4 khaskhas; 1, 2 and 4 chawals; 1, 2 and 4 rattis; 1, 2, 3, 4 and 6 máshas, (the 3 and 6 máshas to be known as 1 and 2 táńkas, respectively); 1, 1½, 2 and 2½ tolas; 1, 2, 4 and 8 chatáks; 1, 2, 2½, 4, 5, 10 and 20 seers; and 1, 1½ and 2 maunds. *For Burma*:—1 small ywè; 1 large ywè; 1 pè, 1 and 2 mús, 1 máť; 1 ngámú; 1, 2, 5, 6½, 10, 12½, 20, 25 and 50 tikals and 1, 2, 2½, 4, 5, 10, 12½, 20 and 25 visses.

If other weights are found necessary they should be permitted, provided they be an integral multiple of one of the above mentioned weights. (Chapter VI, paragraph 28.)

6. Dry measures should, as far as possible, be used struck, a striker in the form of a stout cylindrical roller being used; if, however, 'heaping' cannot be abolished, the shape and dimensions of the authorized measures should be prescribed as well as their capacity. (Chapter VI, paragraph 17.)

7. No dry measures should bear the same name as any weight; and, as far as possible, a name denoting a dry measure should signify a measure of the same size throughout India. (Chapter VI, paragraph 17.)

8. Dry measures used for liquids may be of a shape suitable for such purpose. (Chapter VI, paragraph 19.)

9. All weights and measures should be tested, corrected and stamped periodically by or on behalf of Government and the use of any but stamped authorized weights and measures for the purpose of trade should be prohibited. New weights and measures should be stamped before reaching the premises of the retail vendors thereof. The same rules for stamping, etc., should apply to all weights and measures alike, whether authorized Indian and Burmese, British or metric. (Chapter VI, paragraphs 28, 37 and 41.)

10. For testing, correcting and stamping, the necessary number of stamping parties consisting of an official of the rank of a Naib-tahsildar, with one or

more blacksmiths, peons, etc., should be provided, to tour sufficiently to give reasonable facilities to all traders; such Naib-tahsildars to be part of the regular revenue establishment of the district not to be retained on this work for more than two years and to be eligible for promotion in the same way as other Naib-tahsildars. We are doubtful what to propose in the permanently settled areas of Bengal, Bihar and Orissa and Assam, but suggest tentatively a Sub-Deputy Collector or if that be quite impossible a suitable member of the Excise staff. (Chapter VI, paragraphs 37 to 39 and 41.)

11. A system of inspection should be instituted on the following lines:—

Municipal areas.—To be arranged for by the Municipality; in larger towns a special staff will be necessary, elsewhere the work can be supervised by some of the existing staff preferably by such as draw not less than Rs. 50 per month. Bazaar chaudharis, market superintendents, etc., should be made use of in this connection.

Rural areas, and non-municipal towns.—Inspection should be done primarily by the revenue staff and the village headman; whether the patwari should or should not be employed would depend on circumstances. The stamping Naib-tahsildar should also supervise this work and inspect personally. For the permanently settled areas of Bengal, Bihar and Orissa and Assam, we suggest the president and members of the chaukidari panchayat; the Police should *not* be employed. (Chapter VI, paragraphs 37, 40 and 41.)

12. For penalties, destruction, confiscation and fine should be provided. (Chapter VI, paragraph 42.)

13. The necessary standards—Imperial, provincial and district—should be provided, except possibly as regards the Imperial standards this can be done by the Calcutta Mint; and a small Standards Department should be constituted. (Chapter VI, paragraph 43.)

For the first introduction of the new system we recommend the following procedure, the earlier steps of which will be less necessary the greater the previous knowledge and use of the proposed system; and in some cases may to some extent be omitted entirely. (Chapter VI, paragraph 36.)

- (1) Pamphlets and posters giving details of the new system and conversion tables showing its connection with existing weights and measures should be widely distributed. (Chapter VI, paragraph 24.)
- (2) The new system and its connection with the old should be carefully taught in all schools. (Chapter VI, paragraph 25.)
- (3) Samples of the new weights and measures should be widely distributed to village headmen, bazaar chaudharis, Co-operative Societies, heads of panchayats, etc. (Chapter VI, paragraph 26.)
- (4) The services of the local heads of the people should be enlisted in explaining and recommending the new system and a special official should be deputed for this purpose. (Chapter VI, paragraphs 27 and 40.)
- (5) Arrangements should be made which would ensure an ample supply of the authorized weights and measures and the availability of means of testing, correcting and stamping existing weights and measures. Stamping should be done free of charge to begin with. (Chapter VI, paragraphs 28 and 39.)
- (6) A notification should issue to the effect that throughout the area affected only authorized stamped weights and measures are to be used for purposes of trade after some prescribed date which should be not more than two years from the date of issue of the notification. From the time of issue of such notification the use of authorized weights and measures should be introduced

in all Government and *quasi*-Government transactions and in all markets controlled by Government or any local body (Chapter VI, paragraph 36.)

- (7) Separate notifications should prescribe dates from which (a) the use of any but authorized weights and measures should be refused recognition in documents and in law courts, and (b) the use of any unauthorized weights and measures be declared illegal and their possession by a trader be presumed to be for purpose of trade. (Chapter VI, paragraph 36.)
- (8) The selection of the areas regarding which, and the periods at and for which notifications should issue be left to the discretion of Local Governments, the selection being, we would suggest, such that the system be applied first to the large centres and those rural areas where there is the greatest knowledge of the system and then gradually from these to other areas according as knowledge spreads and staff is available, the aim being to establish the new system throughout the whole country, except in a few specially backward tracts, within ten years.

CH. A. SILBERRAD, *President*

(Subject to minute of dissent)

SIMLA;	}	A. Y. G. CAMPBELL,	}	<i>Members.</i>
<i>The 8th July 1914</i>		RUSTOMJI FARIDONJI.		

[*Note by President.*—The following minute was presented after the report was signed and with no previous suggestion that any such dissent was contemplated].

Minute of dissent by Mr A. Y. G. Campbell.

I regret that I am unable to concur in the recommendation of the majority of the Committee that the uniform system of weights and measures of capacity should be based on a seer of 80 tolas. It appears to me that the proposal to enforce this uniform system throughout India is fraught with considerable difficulty and that it would be better to attempt to adopt the metric system in India.

2. There are two kinds of weights and measures to be considered; first, what may be called the material weights and measures—the actual pieces of stone, iron or other material and the vessels used as weights or measures; and secondly, weights and measures of account such as the ton and some of the seers and maunds used especially in wholesale trade.

3. The principal advantages claimed on behalf of the system recommended by the majority are—

- (a) that the people are already familiar with the names of the weights;
- (b) that this particular seer and maund are already used by Government and on railways and that the whole table of weights is known to a greater number of people in India than any other;
- (c) that it is based on the weight, a newly coined rupee, *viz.*, 180 grains;
- (d) that it is an indigenous system.

4. As regards the first two of these reasons, it may be noted that, in the Madras Presidency at least, many of the names would be new to a very large

proportion of the population and the seer of 80 tolas is hardly used there at all except by Government and on railways. I will revert to the third reason later. The last is not strictly accurate, the table being mainly the result of a cross between a Bengal system of weights and the English troy weights; for the maund is 100 lbs. troy. The names no doubt are Indian, but the actual weights are not Indian, but are based on English troy weights.

5. Among the disadvantages of the system are the following :—

- (a) The table is complicated and in introducing a uniform system it is most desirable that in the interests of the poorer, less educated and less intelligent classes, the table of weights should be as simple as possible—easy to learn and easy to remember. This is to my mind a very important point, if the classes who form the bulk of the population are to obtain the full benefit from a uniform system in the shape of protection against the astute trader.
- (b) The material weights of the same name now in use vary widely; there are, for example, seers of 21, 24, 28, 60, 62, 72, 80, 84, 90, 93, 105, etc., tolas. To replace a weight by another weight of the same name, is, it appears to me, a more difficult matter than to replace it by a weight with a new name. In the south of Madras Presidency, for example, the old palam was $5\frac{1}{2}$ tolas (1,000 grains); this has been replaced by the action of the Government by a palam of 3 tolas; the result has been a certain amount of discontent and want of confidence in trade as dealers were supposed to make use of the change in the value of the palam to their own advantage; it appears to me that the change would have raised less objection if the new weight of 3 tolas had been called by some name not used in the neighbourhood, such as 'navatak', leaving the 'palam' to retain its old meaning. A small change could no doubt be effected without change of name as the weights are often, if not generally, inaccurate to some extent, but it appears to me that there will probably be more opposition and objection to the change of the customary seer of 21, 24 or 28 tolas to a seer of 80 tolas and of the maund of 960 or 1,000 tolas to a maund of 3,200 tolas than there would be to the introduction of new weights bearing new names. Similar remarks apply to measures of capacity.
- (c) In dealing with measures of account the difficulty also seems to me to be very great. It is proposed to enact that after a certain date the term seer in a document shall mean 80 tolas whatever the commodity is and whatever the conditions are under which it is sold. Now in a large part of India, at least, it appears from the evidence before us that it is a commercial custom, instead of (or perhaps in addition to) allowing a lower price in wholesale dealings than in retail dealings, to give a larger seer and maund in wholesale dealings, so as to allow for dryage, wastage, freight, retail dealers' profit or commission, etc. Now I am doubtful whether traders will readily abandon such a commercial custom in favour of western practice on the issue of a notification by Government and whether the Courts will not uphold the customary seers and maunds, so long as traders choose to use them. As far as possible, it is desirable that traders who are the chief users of weights should support the proposals of the Government, and an order upsetting their trade customs is not likely to conciliate them.
- (d) Another disadvantage is that the proposed uniform system must be introduced everywhere much more quickly than would be necessary in the case of a new system; it would be undesirable to have for any length of time the seer of 80 tolas enforced in a town while the seer continued to be 24 tolas in the country round; the

trader would be tempted to take advantage of the situation by, for example, endeavouring to get the party with whom he is dealing to think that he means one seer and then alleging that, as he made his bargain when he was in the area in which the other seer is in force, the latter must be the one by which the contract is to be fulfilled. This could not be done if a new system of weights altogether with different names were introduced into the town first.

(e) Burma has to be left out of account altogether or rather a separate system has to be devised for that province and the introduction of that new system will involve the correction of all weights in use or their replacement by new accurate weights.

(f) The proposed system will be of assistance neither in foreign trade whether western or eastern—nor in the industrial development of the country.

6. I will now consider some of the objections urged against the adoption of the metric system.

(a) I do not attach much weight to the objection that in India the system has been recommended only by Europeans, big merchants and educated Indians, for it appears to me quite unreasonable to expect a witness to recommend a system of which he knows nothing.

(b) It is objected that the metric system is practically entirely unknown now in India; so is the proposed system in Southern India now; so was the British pound at one time and so were other weights and measures which are now used more or less in various parts of India. The want of knowledge can be removed by explaining the system to the people in the manner proposed by the Committee, and, once the introduction of the system has begun, the knowledge of the system will be spread by trade and its introduction will be rendered more easy in parts of the country where at present it would be less acceptable.

(c) It will be necessary for the people to learn a few new names, but the people of India have in recent years added to their languages many words taken from English or other languages foreign to them and I do not anticipate that they will experience any great difficulty in assimilating the few new terms required for those metric weights which are in ordinary use.

(d) It appears to be a common belief that the weights must be based on the tola of 180 grains because that is the weight of a new rupee; this weight is known to all people and weights can be checked by means of rupees. Some witnesses have suggested a decimal system based on the tola. When coins are first minted, it is natural that some well-known commercial weight should be adopted as the weight of the coin and then that the coin in its turn should be adopted as a standard weight, so long as no other means of verifying weights exist. In Burma, however, the tikal and viss had originally no direct and simple relation to the tola nor has the British pound avoirdupois which is fairly extensively used, and there are many weights used for gold, silver, precious stones and Indian medicines in Madras Presidency which have no such relation with the tola; where such weights and measures have been brought into direct connection with the tola it has been generally through the action of the Government or of some official or municipal authority. Now it appears to me that if anything is to be done in the direction of unifying weights and measures, the Government must provide an efficient establishment

to maintain standards and see that weights and measures are kept up to standard throughout the country. Indeed, unless the Government are prepared to take this action, it is useless to introduce a uniform system, for the weights and measures in use at least in retail trade will soon become inaccurate. If any one wishes to check by coins weights used in wholesale or retail trade in ordinary commodities, he can do so with sufficient accuracy, even if the weight does not profess to be an exact number of tolas, by using half-rupee, quarter-rupee and two-anna pieces to make up the fraction. For example, the kilogramme is very approximately $85\frac{3}{4}$ tolas. It must be remembered also that coins are not absolutely accurate even when they are issued from the mint, a remedy of $\frac{1}{100}$ of the weight being allowed, while of course they become still more inaccurate by wear and tear and the ordinary person has not a stock of new coins always ready to hand to check doubtful weights when he does his marketing. In any case, the evidence obtained by the Committee on the subject indicates that an appreciable proportion of weights in use in retail trade are materially inaccurate and the conclusion to be drawn from this evidence is that the sooner the system of depending on coins for checking weights is stopped the better. It appears to me particularly obnoxious that the weights used in dealings in precious metals should be checked by coins and that coins should be actually used as weights in such dealings; the temptation to use heavy coins when buying and light coins when selling must be strong and if yielded to must be a fruitful source of undue gain to the dealer. The proper course is for the Government to verify and stamp weights and measures and then it is immaterial whether or not there is any direct and simple relation between the weights of coins and the weights of trade and commerce. There is abundant evidence that the verification and stamping of weights and measures would be highly appreciated by the people of India.

- (e) An objection raised to the metric system is that it is not a sedecimal or a duodecimal system; no doubt, such a system would have certain advantages if we could adopt at the same time a sedecimal or duodecimal system of notation, but there does not seem to be any prospect of mankind adopting such a system of notation in the near future. When man makes his primitive weights, it is natural that he should first make two weights of the same weight and then make a third equal to the weight of the first two, *i.e.*, double the original weight and then make another weight equal to the weight of the three already made, which would be four times the original weight and so on. But when he has reached the stage of adopting a decimal system of notation there is no reason why he should continue his primitive system, and it has been found by the experience of a large portion of mankind more convenient for him to adopt a decimal system of weights and measures as that simplifies his calculations. It may be urged that a decimal system of weights and measures cannot be conveniently used with the present system of coinage in India; fortunately, we have in Burma an example of a decimal system used with Indian coinage and the Burmans show no desire whatever to give up their decimal system for the Bengal system of 16 chataks to the seer.

7. Now it appears to me that the introduction of the metric system possesses the following advantages:—

- (a) It is a very easy system to learn and to remember, and the same simple table of weights is applicable to all commodities including precious metals and medicines. This, as I have already said, I regard as of the greatest importance in the interests of the less

intelligent classes. It is true that education is spreading in India, but the simpler the system of weights and measures can be kept, the more easily will it be understood and acquired by adults and the less time will be occupied in teaching it in schools, leaving more time for other subjects.

- (b) It simplifies accounts and calculations very materially.
- (c) Customary seers and maunds may remain everywhere as local weights of account, though it is probable that in course of time they will fall out of use, because bigger merchants on the one hand will prefer to quote prices in terms of the kilogramme and retail sales on the other hand will be carried on by material metric weights. These two forces will operate on the local weights of account as an upper and a nether mill-stone.
In the meantime, the 'seer,' 'maund,' etc., will be relegated to the same category as the 'kilo,' 'bag,' etc., if the terms are used at all. The sudden removal of the Indian commercial practice already referred to will be applied, but the desired effect will be brought about more by the traders themselves.
- (d) It will be possible to introduce the system gradually by areas; e.g., if the metric system is enforced in a town, it will create no further confusion in the meaning of the term seer, maund, etc., in the neighbouring country, and it will be possible to allow a sufficient time for the country people to become well acquainted with the metric system before its use is extended to rural tracts.
- (e) Metric standards can be easily obtained.
- (f) The metric system can be applied to Burma as well as India.
- (g) The metric system being an international system and designed as such prevents any feeling of jealousy which might arise at the attempt to extend the use of a system of a particular province to other provinces and Native States.
- (h) The system will be useful in foreign trade. The metric system has in recent years been making steady headway in all parts of the civilized world. It has been already adopted by most countries in Europe and South America and is being adopted by China and Siam, while in Japan it is used in the Customs, and for other purposes.
- (i) It will, I believe, facilitate the future industrial development of India, more than the system proposed by the Committee. Machinery made on metric measurements can be readily obtained, and scientific researches affecting industries are carried on in terms of metric units.

8. In introducing the metric system into any place, the local weights should be expressed in terms of metric weights. It may be worth noting that the gramme is about the masha of Northern India, 7 dekagrams is 6.0014179 tolas or very approximately 6 tolas, and the following are close equivalents:— 3 seers of 80 tolas and 28 hectograms; 3 maunds of 40 such seers and 112 kilograms; a seer of 34 tolas and 28 dekagrams; 3 Burmese visses of 1.40 tolas and 49 hectograms. Many other similar equations can be found for different weights. In each place it is not unlikely that except where Government verify and stamp weights, the weights are not very accurate and it would probably be possible to choose convenient equivalents; for example, a seer of 21 tolas is slightly less than 24.5 dekagrams; for smaller weights in ordinary retail trade, it would be sufficiently accurate to treat it as equal to 24 dekagrams; this would probably give weights quite as accurate as those by present weights.

9. The new weights should be such that their denomination can be readily recognised without a close examination, so that an illiterate purchaser in a retail shop can readily see that the correct weights are used. For example, the weights in a retail shop would be 1, 2, 2, 5 dekagrams; 1, 2, 2, 5 hectograms;

and 1 kilogram; the unit weight in each case might be circular in form, the weights representing 2 of the unit in each case might be square and the weights representing five times the unit might be pentagonal, corners being rounded off in the last two cases to avoid excessive wear and tear. It might be possible to apply a similar principle to metric measures. It would be better to replace old weights by new than to correct the old weights; it would then be possible for a purchaser to see at a glance without touching them that the new weights are used in a shop; but if the use of old weights is still permitted the purchaser will have to examine them closely to see that they have been corrected and stamped and there will be some risk that old uncorrected weights will be used in places where there is not constant inspection. It will be exceedingly difficult for the Government to make sure that all old weights have been corrected; it will be much easier for the people to see that they are not used at all.

10. Metric weights and measures of capacity could probably be introduced now. There is not so much urgency for the introduction of metric measures of length, area and cubical contents, but the English measures especially combined with an acre divided into 100 parts, are unusually complicated. The Indian would like to see the $\frac{1}{100}$ part of an 'acres' of Madras Presidency—defined as a square of which the side is $\frac{1}{100}$ of the ordinary unit of length used in trade, etc., but that is impossible. The 'link', the $\frac{1}{100}$ of a Gunter's chain of 66 feet, does not fit into the ordinary English linear measure and the cent is 1,000 square links. With the metric system, the ordinary agriculturist would have a set of measures for lengths and areas which would be simple and simply related to each other and would serve all purposes. In order to give the agriculturist this simple system, the metric measure of area should be introduced when possible at resettlements, the metre being brought into use for ordinary measures of length meantime. It may be noted that the metre approximates more closely than the yard to some of the old Indian *gases* or double cubits. Mural standards in schools, etc., would be a useful method of showing the length of the metre and in the same way an 'are' (or 'hectare' if possible) could be indicated in the school play-ground.

11. Some witnesses have suggested that India should not adopt the metric system till the United Kingdom has adopted it. It appears to me, however, that the United Kingdom is likely to be the last country to adopt it. Where weights and measures are in a comparatively primitive and inaccurate condition it is easier to introduce a new system than in a country like England where the weights and measures are stereotyped and accurate; greater advantages are immediately apparent in the former case than in the latter. Moreover, the United Kingdom can obtain all she wants in the way of machinery, etc., made to her own weights and measures within her own borders, whereas other countries have to import machinery and manufactured articles and desire to buy them in the cheapest market and consequently may find it advantageous to obtain machinery, etc., made to metric measurements. The trader in England, so long as he has a sufficient market for his goods, may feel that by adopting the metric system he will not gain a profit commensurate with the trouble of making the change. On the other hand, countries less advantageously placed commercially than England have found it advisable to adopt the metric system in their own interests in preference to any indigenous system or any system based on indigenous weights and measures. The British Colonies are, I believe, practically unanimously in favour of the metric system. But I do not think that England is likely to adopt the metric system before the Colonies adopt it.

12. I believe that the introduction of the metric system will be ultimately of great advantage to all classes of the community. The simplicity of the system will especially make it more intelligible to backward classes than any other system and will be of advantage to all who have to use weights and measures in their daily life. It will put a final stop to variety in the weights and measures introduced or patronized by Governments, municipalities or officials; for, if it is once introduced throughout the country no one will ever suggest any further change, whereas now other weights and measures are favoured in different localities in preference to the Bengal system; moreover, even if that system is adopted throughout India, it is not unlikely that a few years hence proposals may be

put forward for the adoption of the metric system in India, and, if such proposals were accepted, the trouble and expense involved in a change of weights and measures would have to be incurred a second time.

13. I would strongly advocate, therefore, that the metric system should be introduced now with the least practicable delay. Delay will, I believe, only increase the difficulty and expense of introducing it. In many parts of the country, weights and measures are still in a primitive condition, stones being used as weights and baskets, etc., as measures. In such places, the introduction of good material weights will probably be appreciated in itself; an example is afforded by the extensive use of the British avoirdupois weights in the Northern Circars of the Madras Presidency in spite of the fact that the British avoirdupois table of weights is not widely used and of the action of the Local Government in endeavouring to encourage the use of another system of weights based on the tola. As time goes on, however, a larger number of fairly good manufactured-weights will be scattered abroad over the country and the trouble and cost of replacing them by accurate authorized weights will be materially increased. Further, it appears to me to be a fallacy to urge that the people are not sufficiently intelligent or sufficiently educated to understand the metric system; if they can understand the more complicated system proposed by the majority of the Committee, *a fortiori*, they can understand the metric system if it is properly explained to them. Education, however, is now spreading rapidly and the Government are doing all they can to extend its advantages to all classes. But so long as a uniform system is not adopted, one result of the spread of education will be that a larger proportion of the population will be taught local and other tables of weights and measures; but nearly every one who has learnt and used a particular system of weights and measures is naturally prejudiced in favour of it and that prejudice constitutes in each case an additional obstacle to be overcome.

14. For these reasons, it appears to me eminently desirable that the Government should take steps now without further delay to constitute the metric system the uniform system of weights and measures in India. When its use has become established throughout India, the action of Government in introducing it will, I am convinced, be appreciated by all.

SIMLA,
The 8th July 1914. }

A. Y. G. CAMPBELL.

APPENDIX A.

No. 8492—8514-4.

GOVERNMENT OF INDIA.

DEPARTMENT OF COMMERCE AND INDUSTRY.

Weights and Measures.*Simla, the 10th October 1913.***RESOLUTION.**

The question of prescribing a uniform system of weights and measures for the whole of India has been under the consideration of Government from time to time since the passing of the Indian Weights and Measures of Capacity Act, 1871 (XXXI of 1871), by section 8 of which the Governor General in Council is empowered to introduce a system of weights and measures of capacity consistent with the statutory unit prescribed by section 3. Although the Act has been on the statute book for more than 41 years no notifications have yet been issued under it, as it was hoped that weights and measures based on the statutory unit would be gradually and generally adopted without further intervention on the part of Government. This hope has not, however, been realised. The Indian Railways and the Government Departments have, it is true, adopted as standards the tola of 180 grains, the seer of 80 tolas and the maund of 40 seers; but no general tendency has manifested itself on the part of Indian Commercial Circles to follow the lead given them by Government.

2. The whole question was examined very carefully between the years 1890 and 1894 by the Government of India in consultation with Local Governments and Administrations, and the policy since followed has been to prescribe, as necessity arose, standard weights and measures for particular districts or groups of districts similar to those adopted by the Indian Railways and the Government Departments. Some of the Local Governments have taken action in this direction, but the general state of affairs is at present far from satisfactory, for the systems of weights and measures in use vary considerably, not only in different provinces, but also in different areas of the same province. The Government of India are fully alive to the difficulties which beset attempts to impose a uniform system of weights and measures for adoption throughout British India. At the same time, they are satisfied that the existing lack of uniformity is seriously prejudicial to trade, and they have reason to believe that the development of railway communications and commerce in this country, the formation of Chambers of Commerce and the advance of municipal and trade organizations have gone far to remove objections formerly felt to the introduction of a single uniform system.

3. The Government of India have, therefore, decided to re-open the question of the feasibility of securing the use of uniform weights and measures in India, and to appoint a Committee to enquire into the whole subject. The Committee will assemble at Bombay on the 10th of November 1913, and will proceed to such places as it may consider desirable to visit in order to obtain the opinion of the Chambers of Commerce and leading merchants and others. The Government of India trust that Local Governments and Administrations will afford the Committee all the assistance which it may require, and will comply with any request for information and advice which may be addressed to them by it. The Committee will submit its report in six months and the report will then be referred to Local Governments and Administrations for consideration before action is taken upon it.

(h)

The Committee will consist of :—

President :

THE HON'BLE MR. S. R. ARTHUR, I C S,
Commissioner, Central Division, Poona.

Members :

MR. C A. SILBERRAD, I C S.,
Magistrate and Collector, United Provinces.

MR. A. Y. G. CAMPBELL, C.I.E., I C S.,
Acting President, Corporation of Madras.

MR. RUSTOMJI FARIDOONJI, U.C.S.,
Commissioner of Excise, Central Provinces.

ORDER—Ordered that a copy of this Resolution be forwarded to all Local Governments and Administrations, to the Home, Finance and Education Departments and the Department of Revenue and Agriculture, and to the President and Members of the Committee. ■■■■■

Ordered, also, that the Resolution be published in the Supplement to the *Gazette of India* for general information.

J. F. GRUNING,

Offg. Secretary to the Government of India.

No. 215-4-C., dated Delhi, the 23rd December 1913

From—S H SLATER, Esq., I. C. S., Under Secretary to the Government of India,
Department of Commerce and Industry,

To—C. A. Silberrad, Esq., I. C. S., Acting President, Weights and Measures Committee.

I am directed to say that the Government of India are pleased to appoint you to be President of the Weights and Measures Committee with effect from the 4th December 1913, *vice* the Honourable Mr. S. R. Arthur, I. C. S., resigned.

APPENDIX B.

QUESTIONS ISSUED BY THE WEIGHTS AND MEASURES COMMITTEE TO THE MORE HIGHLY EDUCATED WITNESSES.

- N.B.*—(1) Please state your name, caste, address, profession, occupation or appointment, and if representative of a body, the name and address of the body represented.
- (2) Please reply to each question on a separate sheet of paper.
- (3) In answering the questions, please give, if practicable, the equivalents of the Indian weights and measures to which you refer in terms of any of those mentioned in the following tables—

Weights.

180 grains is equal to	...	...	...	...	...	1 tola.
80 tolas "	...	...	...	...	...	1 seer
40 seers "	...	...	...	...	...	1 maund.

(Note.—One rupee weighs one tola)

Lineal measures.

12 inches is equal to	...	...	...	...	...	1 foot.
3 feet "	...	...	...	...	...	1 yard.
100 links=22 yards is equal to	...	...	...	...	...	1 chain.
220 yards is equal to	...	...	...	...	...	1 furlong.
8 furlongs "	...	...	...	...	...	1 mile.

Area.

Any of the above lineal measures squared, or 10 square chains (4,840 square yards)	...	...	...	...	...	1 acre.
is equal to	...	...	...	...	...

Cubical capacity.

The approximate weight of water contained by the measure when full expressed in terms, of any of the above weights.

1. What weights are in most general use in the neighbourhood with which you are acquainted?
2. What other weights are in use?
3. (a) Are different systems of weights (whether called by the same or different names) used in dealing with different commodities? (*E.g.*, the maund for weighing firewood is in some places very different from that for weighing grain). Give full details of these weights and the commodities for which each is used.
 - (b) What are the reasons for their variations?
 - (c) What objection would there be to the adoption of a standard weight in these transactions?
4. Are different weights of the same name ever used in the same town or tract when purchasing and when selling the same articles? Give examples.
5. What measures of capacity are in use in the neighbourhood with which you are acquainted? Are they used heaped or struck?
6. How are the measures defined? If as containing some particular weight of some particular article, state weight and article.
7. What commodities are dealt with by these measures and under what circumstances—*e.g.*, are they only used in measuring out grain for sowing; or only by cultivators when selling their produce; or by villagers in making payments to village servants for customary services, etc?

8. Are different measures of the same name ever used in the same town or tract for buying and for selling the same article? Give examples.

9. Are the same commodities ever sold at the same place both by weight and by measure? Do you consider that this should be prohibited? If so, why?

10. Under section 3 of the Indian Weights and Measures of Capacity Act, 1871 (Act XXXI of 1871), the unit of weight is called a seer, but a seer is also a measure of capacity in many places.

(a) Does any confusion arise owing to the use of the same term to denote both a weight and a measure of capacity?

(b) Do you consider it preferable to confine the use of a term to designate either a weight or a measure of capacity but not both?

11. What measures of length are in use in the neighbourhood with which you are acquainted?

12. Are special measures of length used in dealing with special commodities? If so, give full details.

13. What measures of area are in use in the neighbourhood with which you are acquainted?

14. Does the measure of area of land ever vary according to the crop sown? If so, give full details.

15. Suggestions have been put forward that the United Kingdom should adopt the metrical system or some other uniform system of weights and measures based on the decimal or duodecimal system of notation.

(a) Do you consider it desirable that the introduction of a uniform system of weights and measures should be postponed until such a system is adopted and enforced in the United Kingdom and that the same system should then be introduced and enforced in India; or

(b) are you in favour of a uniform system of weights and measures being prescribed for all India; or

(c) do you consider that no attempt should be made to enforce the use of a uniform system of weights and measures in India? Please give full reasons for your opinion.

N.B.—Even though you are not in favour of a uniform system being prescribed, your replies to the following questions are requested on the assumption that a uniform system of weights and measures will be introduced.

16. Do you consider that weights and measures in force in other countries should be taken into consideration in determining the uniform system to be adopted for India?

17. There are two chief systems in use in the civilized world. The British is in use in the British territories and United States of America and the metric system is used in most other countries except Russia. If a uniform system of weights and measures is to be introduced at once throughout India, should a system connected with either the British or the metric system be adopted for India? If so, what system do you suggest? Please give full reasons for your suggestion.

18. If, however, you consider that a separate uniform system of weights and measures should be prescribed for India what would you suggest?

19. (a) Would it be advisable to prescribe in addition to the universal system for all India and Burma local standards corresponding as nearly as possible to some weight or measure in general use over some considerable area? (E.g., as the viss of 140 tolas for Burma). Name any such local standard you would consider it advisable to prescribe, giving reasons for your recommendations and the area over which such local standard should be permitted.

(b) Would it be advisable to allow some special weights to be used in special trades? If so, state what you would suggest with reasons.

(c) Should this be done temporarily or permanently?

20. What measures should be adopted to introduce and enforce the use of an authorized uniform system of weights and measures throughout India? The following suggestions have been made; please criticise and add to them:—

(a) The authorized weights and measures should be adopted in all transactions by Government, Railways and bodies controlled by Government.

(b) Specimens of the authorized weights and measures in general use should be supplied by Government to all Revenue offices in districts, all police stations, all village headmen and all recognized elementary schools.

- (e) Tables of the authorized weights and measures should be published as standing matter in the District Gazettes (Village sheet) in the vernaculars as well as in English; copies of the tables should also be kept by the village headman.
- (f) The use of the authorized weights and measures should be taught in all recognized elementary schools and the use of no other weights and measures should be taught in such schools.
- (g) The Government should stamp only authorized weights and measures.
- (h) The Government should provide due facilities for stamping and verifying authorized weights and measures throughout the country. No fee should be charged for stamping authorized weights and measures for a certain period.
- (i) The Government should replace free of cost by corresponding authorized weights and measures any weights and measures no longer authorized but stamped by or under the authority of Government before a certain date and still in good order.
- (j) The Government should alter or make grants for the necessary alteration of weighing machines which are in British India at a certain date and in good order and in use or for sale.
- (k) Only stamped authorized weights and measures should be used after a certain date in markets under the control of Government or any local authority.
- (l) The import, manufacture and sale of other weights and measures should be declared illegal.
- (m) No import duties should be levied for a certain period on authorized weights and measures and weighing machines for weighing authorized weights only.
- (n) (i) The Government should sell at cost price authorized weights and measures,
Note—This might discourage private trade in weights and measures.
 or (ii) The Government should sell at Revenue offices at reasonable prices (so as to allow a profit to private trade) authorized weights and measures and simple weighing machines adapted for authorized weights.
- (o) After a certain date documents should be drawn up only in terms of the authorized weights and measures and civil courts should not recognize any other weights and measures in documents executed after the prescribed date (An exception should be made in favour of documents relating to external trade with countries in which the authorized weights and measures are not recognized).
- (p) Documents drawn up after the prescribed date in terms of unauthorized weights or measures should not be registered in the offices of the Registration Department.
- (q) The use of any weights and measures except those authorized should be illegal throughout India after a certain date.

Note.—Your views are invited as to the length of the periods mentioned above, if the proposed measures are adopted.

- (r) It should be presumed that any unauthorized weights or measures found in the possession of a shopkeeper, trader or merchant are intended to be used and that such possession should be illegal.

21. What penalties should be prescribed for failure to adopt the prescribed system? What is your opinion on the suitability or otherwise of the following:—

- (a) Destruction (without confiscation) of unauthorized measures found in use contrary to law.
- (b) Confiscation of unauthorized weights and measures found in use contrary to law.
- (c) A fine on conviction before a Magistrate of using an unauthorized weight or measure contrary to law.

22. What authority should be employed to detect cases of unauthorized weights and measures? What are your views (with reasons) on the advisability and practicability of employing for this purpose—

- (a) the Police,
 (b) the Revenue staff,
 (c) in municipalities and towns, the municipal or town staff;
 (d) some other agency either paid or unpaid as, e. g., village headmen;

Note.—As regards (a), (b) and (c), please state the lowest grade of officer of each of these classes who should be empowered to detect cases

23. In your opinion how would the introduction of a uniform system affect (a) large traders, (b) small traders, (c) others generally, especially agriculturists and the poorer classes?

24. Do you use any tables for the conversion of weights or measures? If so, where are copies procurable?

25. The Committee has been appointed to enquire into the whole question of the feasibility of securing the use of uniform weights and measures in India. Have you any further suggestions to make to the Committee?

26. It has been suggested that if the British pound were made the unit of weight it would be advisable to alter the coinage so as to give some direct connection between it and that unit. What is your opinion on this point?

If it were decided to so alter the coinage, which of the following methods would you deem best suited for this end:—

(N.B.—Save Nos. (i), (ii) (a) and (ii) (b) the methods are not mutually exclusive.)

(i) To make the rupee weight 175 grains instead of 180 as at present, leaving the proportion of silver to alloy unaltered. This would make the rupee weigh exactly $\frac{7}{8}$ pound.

(ii) (a) To raise the weight of the rupee by the addition of alloy leaving the amount of silver contained therein unaltered so as to make it weigh either (a) $\frac{1}{8}$ pound or (b) $\frac{1}{4}$ pound. In the latter case, the rupee would weigh half an ounce avoirdupois, or very approximately the same as the English half crown.

(ii) (b) To reduce the weight of the nickel one-anna piece from 60 grains to $54\frac{1}{8}$ grains ($\frac{1}{8}$ oz., one-eighth ounce avoirdupois).

(iii) To raise the weight of the bronze quarter-anna piece from 75 grains to $109\frac{1}{2}$ grains, (one-quarter ounce avoirdupois). It would then weigh only $9\frac{1}{2}$ grains, more than the old copper quarter-anna.

27. Is the gunny bag in use in your district always of the same size? If so, how is the size determined? Would any alteration in the system of weights and measures cause any inconvenience in this connection?

28. What weights and measures are stamped by Government in your district and to what extent? What staff is employed for the purpose?

29. Is the use of stamped weights and measures enforced to any extent, e.g., in markets? If so, to what extent and how is the use of other weights and measures prevented?

30. Do the Government sell any weights and measures either generally to the public or for special purposes (e.g., for use in liquor shops)? If so, to what extent and through what agency and at what price? Is there any private manufacture or trade in weights and measures? If so, what are the usual prices charged?

QUESTIONS ISSUED BY THE WEIGHTS AND MEASURES COMMITTEE TO THE LESS WELL EDUCATED WITNESSES.

[Answers to be submitted to the Collector].

N.B.—(1) Please state your name, caste, address and occupation.

(2) As far as possible give the equivalents of any weights mentioned by you in the Railway (or Sirkari) weights, 80 tolas is equal to 1 seer; 40 seers is equal to 1 maund, and give the equivalents of measures of length in English feet.

I.—What weights do you generally use or does your buniya generally use when you buy or sell? Please give the weights in order of size beginning with the smallest; mention how many times each of the larger weights contains one of the smaller weights.

II.—(a) Do you use different kinds of weights (whether called by the same or different names) when dealing with different commodities? (E.g., the maund for weighing firewood is in some places very different from that for weighing grain). Give full details of these weights and the commodities for which each is used.

(b) What are the reasons for this variation? Would there be any difficulty in using some other weight prescribed by Government for use throughout India in these transactions?

(c) What objection would there be to the adoption of a standard weight in these transactions?

III.—Are different weights of the same name ever used when purchasing and when selling the same articles? Give examples.

IV.—What measures of capacity do you use? Please give the measures in order of size beginning with the smallest and state how many times each of the larger measures contains one of the smaller ones. Also state whether the measure is used “heaped” or “struck.”

V.—Many measures are said to contain a certain weight of a certain grain or other article. State which of those mentioned by you are so determined and in what way.

VI.—What commodities are dealt with by these measures and under what circumstances? *E.g.*, are they only used in measuring out grain for sowing; or only by cultivators when selling their produce; or by villagers in making payments to village servants for customary services, etc.?

VII.—Are different measures of the same name ever used for buying and for selling the same article? Give examples.

VIII.—Are the same commodities ever sold at the same place both by weight and by measure? Do you consider that this should be prohibited? If so, why?

IX.—In some places the same term is used to denote both a weight and a measure of capacity. Is this the case in your neighbourhood? Does this cause confusion?

X.—What measures of length do you use? Please give the measures in use in order of size beginning with the smallest and mention how many times each of the larger measure contains one of the smaller ones.

XI.—Are special measures of length used in dealing with special commodities? If so, give full details.

XII.—What measures of area do you use for land or for other purposes? Please give these measures in order of size beginning with the smallest and mention how many times each of the larger measures contains one of the smaller ones.

XIII.—Does the measure of area of land ever vary according to the crop sown? If so, give full details.

XIV.—Different weights and measures are now in use in different parts of India, in some cases the same term is used to denote different weights and measures *e.g.*, the Madras maund is less than the Bombay maund, and the Bombay maund is less than half the Railway or Sirkari maund, the results that much inconvenience and hindrance is caused to trade, and sometimes merchants suffer losses owing to mistakes as to the weights or measures meant by the terms used in their agreements. It has been proposed, therefore, that a uniform system of weights and measures should be introduced throughout all India and that the use of other weights and measures should be prohibited. This will involve some inconvenience to persons accustomed to use local weights and measures but the inconvenience will be temporary as the use of the new weights and measures can be readily learnt and understood. What are your views on the proposal to introduce and enforce a uniform system of weights and measures throughout the whole of India?

XV.—The following suggestions have been made to facilitate the introduction of a uniform system of weights and measures throughout India. Please give your opinion regarding them and state if you think anything else should be done.—

- (a) The authorized weights and measures should be adopted in all transactions by Government, Railways and bodies controlled by Government.
- (b) Specimens of the authorized weights and measures in general use should be supplied by Government to all Revenue offices in districts, all police stations, all village headmen and all recognized elementary schools.
- (c) Tables of the authorized weights and measures should be published as “standing matter” in the District Gazettees (Village sheet) in the vernaculars as well as in English; copies of the tables should also be kept by the village headman.
- (d) The use of the authorized weights and measures should be taught in all recognized elementary schools and the use of no other weights and measures should be taught in such schools.
- (e) The Government should stamp only authorized weights and measures.
- (f) The Government should provide due facilities for stamping and verifying authorized weights and measures throughout the country. No fee should be charged for stamping authorized weights and measures for a certain period.
- (g) The Government should replace free of cost by corresponding authorized weights and measures any weights and measures no longer authorized but stamped by Government before a certain date and still in good order.

- (d) Only stamped authorized weights and measures should be used after a certain date in markets under the control of Government or any local authority.
- (e) The Government should sell at Revenue offices at reasonable prices (so as to allow a profit to private trade) authorized weights and measures and simple weighing machines adapted for the authorized weights.
- (f) After a certain date, documents should be drawn up only in terms of the authorized weights and measures and civil courts should not recognize any other weights and measures in documents executed after the prescribed date (An exception should be made in favour of documents relating to external trade with countries in which the authorized weights and measures are not recognized).
- (h) The use of any weights and measures except those authorized should be illegal throughout India after a certain date.

Note.—Your views are invited as to the length of the periods mentioned above, if the proposed measures are adopted.

XVI. What penalties should be prescribed for failure to adopt the prescribed system? What is your opinion on the suitability or otherwise of the following:—

- (a) Destruction (without confiscation) of unauthorized measures found in use contrary to law.
- (b) Confiscation of unauthorized weights and measures found in use contrary to law
- (c) A fine on conviction before a Magistrate of using a non-authorized weight or measure contrary to law.

XVII. What authority should be employed to detect cases of unauthorized weights and measures? What are your views (with reasons) on the advisability and practicability of employing for this purpose—

- (a) the Police ;
- (b) the Revenue staff ;
- (c) in municipalities and towns, the municipal or town staff ;
- (d) some other agency either paid or unpaid as, e.g., village headmen ?

XVIII. The Committee has been appointed to enquire into the whole question of the feasibility of securing the use of uniform weights and measures in India. Have you any further suggestions to make to the Committee?

Extract from letter addressed to Local Governments.

2. The Committee feel that the real difficulty in introducing any uniform system will be not so much with the larger firms and persons of considerable, and more particularly English education; but with the smaller traders, artisans, petty professional men (e.g., *hakhans* and *vaides*), and the cultivator class. Any change of system will affect such persons in a way which is considerably different from that in which it affects a large firm. The change will so to say "bulk much more largely in the horizon" of the small trader, etc., than in that of a large firm, and his objections will very probably differ considerably from those of the larger people. It is next to impossible for any one save members of the District Staff who are willing to interest themselves in the matter to get hold of persons of these classes who will express their opinions.

3. The Committee have, therefore, framed a simple list of questions which they would ask to be translated into the chief vernaculars of the province. They would ask that these questions together with copies of this and the enclosed letter to Collectors and of questions for Collectors be sent to selected Collectors, and also that Collectors may be permitted to reply direct to the Committee.

Extract from letter addressed to Collectors.

I have the honour to enclose a list of questions regarding the possibility of introducing into India a uniform system of weights and measures and would ask the favour of your replying to them (copies of these questions for witnesses nominated by Local Governments have already been sent to Collectors concerned for distribution).

2. The Committee would especially ask you to obtain the opinion of persons likely to be affected by any changes to be made who are not in a position to give expression to their opinions unless specifically called on to do so. In many ways the effect of any changes of system is likely to affect more vitally artisans, petty professional men (*e.g.*, *hakims* and *vasds*) and the smaller non-English knowing traders, residents of the smaller bazaar towns, where there is often a very considerable amount of trade altogether though no individual trader is very wealthy. These men purchase direct from the cultivators, and it is they who very largely employ the local measures. Unless such men accept any new system there is but little hope of such system being to any extent universally adopted within any reasonable time. It is, therefore, very necessary that the advantages of a uniform system of weights and measures throughout India should be made clear to them and the inconveniences to which these smaller people are likely to be put ascertained and methods of removing or alleviating them suggested. To a probably somewhat less, though still very considerable, extent similar remarks apply to the growers of crops, at any rate to those who cultivate a considerable area of land. Such people are not in a position to express their opinions unless called on for them, and unless the proposals are made clear to them; and in practice it is only the District Staff who can do this. The Committee feel that they are asking what may cause a considerable amount of work, but equally feel that there is no other way of obtaining the information required. To assist in this a simple list of questions which it is hoped may be at least partly answered by persons of the classes referred to is enclosed.

3. When the Committee visit your district they would be very glad if you would select and send before them a few persons of the classes mentioned

* * * *

APPENDIX C.

(Chapter VI, paragraphs 15 and 17)

In view of the evidence received the following suggestions are made as to what may possibly prove suitable standardized measures of length and capacity; they are meant as examples and are not intended to be exhaustive.

I.—Measures of length.

Province.	Measure.	Suggested standard.
United Provinces	Gaz	36 inches.
	Hath	18 "
	Girah	2½ "
	Tasu	1½ "
Bengal	As for the United Provinces omitting tasu.	
Madras	Gaz	36 inches.
	Muta or musbam	18 "
Bihar and Orissa	As for the United Provinces	
Punjab	As for the United Provinces.	
Bombay	As for the United Provinces, the gaz being also known as gaj, var or val.	
Central Provinces	As for Bombay	
Burma	Lan	6 inches.
	Gark	36 "
	Taung	18 "
	Ntwa	9 "
	Ma'k	6 "
	Lethit	½ "
Assam	As for Bengal.	
North-West Frontier Province	As for the United Provinces.	
Ajmer-Merwara	As for the United Provinces.	
Baluchistan	As for Bombay.	
Delhi	As for the United Provinces.	

II.—Measures of capacity (dry).

Province.	District	Measure.	No. of seers of water in proposed standard.†
United Provinces ...	Banda ...	Paila ...	5
	Gorakhpur ...	Sei ...	1½
	Jhansi ...	Paila ...	10
	Naini Tal ...	Nali ...	2½
Bengal ...	Calcutta ...	.....	2½
	Chittagong .	Am ..	20
	Dacca ...	Bouta ...	20
	Dinajpur ...	Bathia ...	5
Madras ...	Arcot (South), Salem and Tinnevely measure.	.....	2½
	Bellary, Godavari, Madura, Malabar and Ramnad.	.....	1½
Bihar and Orissa ...	Kistna ...	Kancham ...	5
	Cuttack ...	Gouni ...	5
	Manbhum ...	Paila ...	1½
Punjab ...	Sialkot ..	Daropa ...	5
		Small tops*	2½
Bombay ...	Bombay ...	Paila ...	5
	Dharwar ...	Dharwar seer measure	2½
	Hyderabad	Toya ...	5
	Khandesh (East)	Paila ...	5
Central Provinces ...	Akola ...	Paila ...	5
	Nagpur ...	Ruro ...	10
	Nimar ...	Chauki ...	5
	Raipur ...	Katha ..	5
	Saugor ..	Chauthia ...	2½
	Seoni ...	Ruro ...	...
Assam ...	Cochar ...	Bathi ...	2½
	Kamrup ...	Don ...	5
North-West Frontier Province...	Dera Ismail Khan ...	Large tops ...	5
	Peshawar ..	Odhi ...	5
Baluchistan ...	Quetta ...	Rasa ...	5

* The large tops occurring elsewhere in the province (Chapter IV, para. 14) and in the North-West Frontier Province might be of capacity of 5 seers of water.

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EAST INDIA (RETRENCHMENT COMMITTEE)

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REPORT
of the
INDIAN RETRENCHMENT
COMMITTEE

1922-23

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at the following addresses: Imperial House, Kingsway, London, W.C. 2, and
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1923

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REPORT

OF THE

INDIAN RETRENCHMENT COMMITTEE.

FORWARDED FOR THE INFORMATION OF THE GOVERNMENT OF INDIA.

CONSTITUTION OF THE COMMITTEE.

The Right Hon'ble LORD INCHCAPE, G.C.M.G., K.C.S.I., K.C.I.E. (*Chairman*).

Sir THOMAS SIVEWRIGHT CATTO, Bart., C.B.E.

Mr. DADIBA MERWANJEE DALAL, C.I.E.

Sir RAJENDRA NATH MOOKERJEE, K.C.I.E., K.C.V.O.

The Hon'ble Sir ALEXANDER ROBERTSON MURRAY, Kt., C.B.E.

The Hon'ble Mr. PURSHOTAMDAS THAKURDAS, C.I.E., M.B.E.

Mr. H. F. HOWARD, C.S.I., C.I.E. (*Secretary*).

Mr. J. MILNE (*Attached Officer*).

TERMS OF REFERENCE.

To make recommendations to the Government of India for effecting forthwith all possible reductions in the expenditure of the Central Government, having regard especially to the present financial position and outlook. In so far as questions of policy are involved in the expenditure under discussion, these will be left for the exclusive consideration of the Government, but it will be open to the Committee to review the expenditure and to indicate the economies which might be effected if particular policies were either adopted, abandoned, or modified.

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EXPLANATORY NOTE.

Owing to the changes made under the Reforms Scheme in the distribution of revenue and expenditure between the Central Government and the Provinces, the figures for the expenditure of the Central Government contained in the accounts for 1913-14, which we have adopted for the purpose of comparison with later years, were not in all cases comparable with those contained in the estimates for 1922-23. We have, therefore, recast them, as far as possible, into the form in which they would have stood had the present distribution between Central and Provincial expenditure obtained in that year. In order to make the comparison with the year 1913-14 effective we have similarly, as we explain in dealing with the exchange head, recast the revised estimate for 1921-22 and the budget estimate for 1922-23 on an exchange basis of Rs. 15 to £1. Sterling expenditure in England has been converted into rupees on this basis throughout the report except where otherwise stated. A summary statement showing the figures adopted as the basis of our examination is attached as Appendix A. We have taken as the basis of the reductions recommended the budget grant for 1922-23 shown in this Appendix, supplemented, in certain cases, by the provision subsequently allotted.

APPENDIX A.

[Sterling converted at £1 to Rs. 15.]

[In thousands of Rs.]

HEADS OF EXPENDITURE.	ACTUALS, 1913-14		REVISED ESTIMATE, 1921-22		BUDGET ESTIMATE, 1922-23	
	England.	Total England and India.	England.	Total England and India.	England.	Total England and India.
Direct Demands on the Revenues—	R	R	R	R	R	R
1. Customs	6	41,84	1,65	70,48	1,64	68,76
2. Taxes on income	..	4,69	40	21,52	99	47,01
3. Salt	12	92,52	1,22	1,57,62	1,07	1,70,61
4. Opium	13	1,52,41	98	1,87,74	97	1,86,53
5. Land Revenue	25	11,94	81	15,14	89	15,64
6. Excise	2	1,87	6	2,64	1	2,54
7. Stamps—						
A—Non-Judicial	..	..	53,85	22,29	29,10	18,44
B—Judicial	15,98	1,68	..	2,70	..	3,10
8. Forests	73	11,42	9,84	46,68	12,54	62,46
9. Registration	..	27	..	47	..	46
TOTAL	17,28	3,17,64	68,81	5,29,08	46,62	5,68,86
Railway Revenue Account—						
10. State Railways—						
Interest on Debt	5,55,93	10,95,47	6,31,08	15,38,47	6,64,02	16,77,95
Interest on Capital contributed by Companies	2,58,39	2,92,86	3,25,20	3,28,76	3,32,05	3,36,10
Annuities in purchase of Railways	5,08,94	5,08,94	5,03,56	5,03,56	5,03,53	5,03,53
Sinking Funds	28,76	28,76	43,11	43,11	43,51	43,51
11. Subsidised Companies	..	7,89	..	7,41	..	19,83
12. Miscellaneous Railway Expenditure	..	-6,88	26,76	29,19	25,27	29,77
TOTAL	13,50,02	19,25,04	15,39,71	24,45,50	15,70,78	26,13,09
Irrigation, etc., Revenue Account—						
14. Works for which Capital Accounts are kept—						
Interest on Debt	..	6,51	..	9,39	..	9,51
15. Other Revenue Expenditure	..	88	..	1,37	..	1,18
TOTAL	..	7,39	..	10,76	..	10,69
Irrigation, etc., Capital Account (charged to Revenue)—						
16. Construction of Irrigation, etc., Works—						
Financed from Ordinary Revenues	13	3,13	2,73	-3,38	..	35
Posts and Telegraphs Revenue Account—						
17. Posts and Telegraphs—						
Interest on Debt (Indian Postal and Telegraph Department)	..	..	..	60,00	..	66,00
Miscellaneous Expenditure—						
Indian Postal and Telegraph Department	21,86	30,46	1,50,00	80,32	1,09,35	41,06
Indo-European Telegraph Department	4,60	4,60	-21,60	-21,60	-14,17	-14,17
TOTAL	26,46	35,06	1,28,40	1,18,72	95,18	92,89
Posts and Telegraphs Capital (charged to Revenue)—						
18. Capital outlay on Posts and Telegraphs—						
Indo-European Telegraph Department	3,75	3,47	3,07	3,93	5,03	-26
Debt Services—						
19. Interest on Ordinary Debt	8,86,92	14,00,16	10,85,93	29,51,43	12,44,71	32,39,21
Deduct—Amount chargeable to Railways	6,55,93	10,95,47	6,31,08	15,38,47	6,64,02	16,77,95
" Amount chargeable to Irrigation	..	6,51	..	9,39	..	9,51
" Amount chargeable to Posts and Telegraphs	..	..	..	60,00	..	66,00
" Amount chargeable to Provincial Governments	..	2,22,17	..	2,65,32	..	2,99,73
Remainder chargeable to Ordinary Debt	3,80,99	76,01	4,54,85	11,13,25	5,80,69	11,86,02
20. Interest on other Obligations	..	1,16,38	..	3,61,71	..	3,29,58
21. Sinking Funds	..	..	75,00	2,23,00	75,00	2,23,00
TOTAL	3,80,99	1,94,54	5,29,58	16,03,96	6,55,69	17,88,65
Carried over	17,28,18	24,86,07	22,62,07	47,15,38	22,78,30	50,24,27

Sterling converted at £1 to Rs. 15.]

[In thousands of Rs.]

HEADS OF EXPENDITURE.	ACCOUNTS, 1913-14.		REVISED ESTIMATE, 1921-22		BUDGET ESTIMATE, 1922-23.	
	England.	Total England and India.	England.	Total England and India.	England	Total England and India.
	₹	₹	₹	₹	₹	₹
Brought forward	17,23,18	24,86,07	22,62,07	47,15,33	23,73,30	50,24,27
Civil Administration—						
22. General Administration—						
A.—Heads of Provinces (including Governor General) and Executive Councils		18,06	...	20,10	...	20,48
B.—Legislative Bodies		1,71	...	7,00	...	8,60
C.—Secretariat and headquarters establishment		41,25	...	78,80	...	80,31
D.—Commissioners	...	...	...	...	...	...
E.—District administration	...	4,94	...	15,41	...	16,14
F.—Home administration, etc.	80,27	89,27	68,91	68,91	70,97	70,94
23. Audit	1,11	39,59	4,69	72,59	4,20	58,16
24. Administration of Justice	8	8,87	72	9,29	80	10,29
25. Jails and Convict Settlements	2	19,73	33	45,23	36	44,35
26. Police	24	88,04	1,63	87,24	1,93	81,90
27. Ports and Pilotage	3	15,72	2,72	24,69	3,71	26,32
28. Ecclesiastical	3	19,15	4,29	31,11	4,23	33,33
29. Political	2,28	1,72,60	16,08	2,14,95	12,45	2,03,14
30. Scientific Departments	4,78	44,79	17,63	1,16,83	12,38	1,12,31
31. Education	1,66	17,89	1,86	31,09	1,38	32,96
32. Medical	80	12,72	3,47	27,51	5,68	32,24
33. Public Health	45	10,46	61	16,14	96	16,32
34. Agriculture	19	9,23	1,87	21,52	2,01	23,36
35. Industries	...	...	1,24	4,37	46	1,59
36. Aviation	...	...	8	1,84	...	48
37. Miscellaneous Departments	24	5,72	2,78	43,61	3,10	25,71
TOTAL	51,00	5,16,98	1,28,46	9,38,48	1,23,92	10,15,37
Currency, Mint and Exchange—						
38. Currency	18,20	35,64	68,02	92,23	49,55	80,32
39. Mint	1,59	19,90	99	18,87	1,26	22,34
40. Exchange	...	...	...	4,90	...	20,60
TOTAL	19,79	55,54	64,01	1,16,05	50,81	1,23,76
Civil Works—						
41. Civil Works		5,30	...	4,06	...	6,24
In charge of Civil officers	...	...	...	...	...	...
In charge of Public Works officers	15,18	1,53,52	6,34	1,50,62	1,15	1,55,68
TOTAL	15,18	1,58,82	6,34	1,54,68	1,15	1,61,87
Miscellaneous—						
43. Famine Relief and Insurance—						
A.—Famine Relief		4	...	4,50	...	27
44. Territorial and Political Pensions	1,68	89,11	1,74	30,69	1,74	31,42
45. Engraving Allowances and Passes	3,08,19	3,25,05	3,19,74	3,40,65	3,21,05	3,54,27
46. Stationery and Printing	15,30	32,13	34,64	37,68	37,61	75,56
47. Miscellaneous	74,50	1,12,57(a)	85,28	97,95	23,37	68,98
TOTAL	4,00,17	5,02,89	3,91,40	5,80,47	3,73,77	5,30,50
Military Services—						
48. Army—						
Effective	3,95,84	24,81,44	12,61,09	63,71,66	11,72,54	58,19,85
Non-effective	3,77,98	4,66,95	5,08,98	8,17,59	5,32,90	9,26,96
	7,73,82	29,68,39	17,64,95	70,89,25	17,35,44	67,46,81
49. Marine	88,56	76,92	58,94	1,50,58	69,78	1,57,22
50. Military Works	6,38	1,42,10	19,57	5,29,37	7,27	4,70,27
Special Defences (1902)	1,38	2,45	...	...	...	...
TOTAL	8,19,43	31,89,56	18,43,46	77,69,20	18,12,40	73,76,30
Contributions and Assignments to the Central Government by Provincial Governments—						
52. Miscellaneous adjustments between the Central and Provincial Governments	...	59,74	...	76,38	...	63,29
TOTAL EXPENDITURE CHARGED TO REVENUE	30,33,74	69,68,90	46,95,74	1,43,53,79	47,35,44	1,42,95,30

(a) Includes "Civil Furlough and Absentee Allowance" which are being distributed among the respective subject heads of account from 1919-20.

[In hundreds of £ and thousands of Rs.]

HEADS OF REVENUE	ACTUALS, 1913-14.		REVISED ESTIMATE, 1921-22.		BUDGET ESTIMATE, 1922-23.	
	England	Total India and England.	England.	Total India and England.	England.	Total India and England.
Principal Heads of Revenue—	£	Rs.	£	Rs.	£	Rs.
I—Customs		11,13,78	..	34,60,14	..	46,41,84
II—Taxes on Income		2,30,62		21,11,99	...	22,11,80
III—Salt		5,15,09		6,41,62	...	6,86,08
IV—Opium		2,43,86		3,03,24	...	3,09,30
V—Land Revenue		41,94		36,66	...	43,38
VI—Excise		25,49		55,81	...	56,32
VII—Stamps		14,98		24,27	...	24,35
VIII—Forests		11,11		13,73	...	21,68
IX—Registration		96		1,73	...	1,68
X—Tributes from Indian States		88,00		88,27	...	88,05
TOTAL		23,45,17		67,37,45	...	79,84,41
Railways—						
XI—State Railways Gross Receipts	2	56,30,68	48,6	81,82,29	48,4	99,57,28
XII—Subsidized Companies	76,3	13,97	142,4	24,41	113,0	19,43
<i>Deduct—</i>						
Working Expenses		29,35,03		65,82,53	...	67,99,00
Surplus profits paid to Companies		66,13		1,04,09	..	60,00
TOTAL	77,0	26,43,60	191,0	15,20,08	161,4	81,17,68
Irrigation—XIII and XIV		5,91	—3,3	6,99	—3,0	7,07
Posts and Telegraphs—XV—						
Indian Postal and Telegraph Department—						
Gross receipts		5,14,89		8,89,26	...	10,91,19
<i>Deduct—</i> Working Expenses	65,9	4,40,95	19,9	8,45,03	45,5	9,10,10
Net receipts	—65,9	74,04	—19,9	44,23	—45,5	1,81,09
Indo-European Telegraph Department—						
Gross receipts	4,3	24,89	1,2	23,84	32,5	25,98
<i>Deduct—</i> Working Expenses	3,9	11,68	4,4	37,32	3,5	36,52
Net receipts	9	13,31	—3,2	—13,38	29,0	—10,54
Interest receipts—XVI	241,2	1,14,36	242,4	1,16,78	30,3	85,82
Civil Administration—XVII to XXVI	1,7	33,86	2	72,15	2	36,50
Currency, Mint and Exchange—						
XXVII—Currency	78,2	52,44	..	4,06,33	..	3,03,13
XXVIII—Mint		50,97	2	14,24	2	19,19
XXIX—Exchange		17,96				
TOTAL	78,2	1,21,37	2	4,20,57	2	3,22,32
Civil Works		6,89		11,46		10,92
Miscellaneous—XXXIII to XXXV	102,6	30,79	682,8	7,19,45	120,2	72,13
Military Receipts—						
XXXVI—Army	351,2	1,50,53	2,218,1	7,72,54	938,0	5,85,51
XXXVII—Marine		13,43		46,67		30,23
XXXVIII—Military Works		11,40		15,80		15,30
TOTAL	351,2	2,05,45	2,218,1	8,34,51	938,0	6,01,04
Contributions and assignments to the Central Government by Provincial Governments		9,83,00	..	10,01,30		9,20,65
TOTAL REVENUE	788,9	65,77,65	8,308,3	1,14,71,59	1,230,3	1,38,79,08

PART I.

MILITARY SERVICES.

INTRODUCTORY REMARKS.

The estimate of net expenditure for 1922-23 compares with the revised estimate for 1921-22 and the actual net expenditure of 1913-14 as follows :—

	Rs.
1913-14, Actual Expenditure	29,84,41,000
1921-22, Revised Estimate	69,34,69,000
1922-23, Budget Estimate	67,75,26,000

2. The large increase in the expenditure on the military services is the direct outcome of the war and may be attributed to five main causes :—

- (i) The general rise in prices.
- (ii) The enhanced rates of pay granted to all ranks.
- (iii) Improvements in the standard of comfort of the troops.
- (iv) Additions to and improvements in equipment, etc., and the adoption of a higher standard of training.
- (v) The increase in non-effective charges from Rs. 5 crores before the war to Rs. 9 crores at the present time.

3. We appreciate the great difficulties with which the military authorities in India have had to contend during the transition period from war to peace conditions, when large armies had to be demobilized concurrently with reorganisation undertaken in the light of the lessons of the war. Hostilities with Afghanistan and operations on the Frontier intervened while demobilization was in progress, and the growing cost of the army coupled with a deterioration of the general financial position of the country have more than once necessitated the complete revision of schemes proposed for the future composition, organisation and distribution of the Army in India,

4. The expenditure which has been incurred in the past may have been inevitable, but the question is whether India can afford to maintain military expenditure on the present scale as an insurance against future eventualities. In our opinion the repeated huge deficits of the last few years, in spite of the imposition of heavy new taxation, have made it abundantly clear that India cannot afford this expenditure.

So long as peace conditions obtain, the first essential is for India to balance her budget, and this can only be secured by a very substantial reduction in the military estimates. In this connection it must be remembered that the budget estimate for 1922-23 did not represent the full annual expenditure which would have been incurred on the military services but for certain fortuitous circumstances; the strength of the army was under establishment, purchases of supplies were below normal, as there were large accumulations of stocks of provisions, clothing and other stores, and the estimate also assumed large non-recurring receipts from sales of surplus war stores and other sources. Further we understand that inadequate provision was made for the maintenance of the Royal Air Force, and that considerable additional expenditure will be necessary in future years. If allowance were made for these factors, the expenditure required for 1922-23 would have been as follows :—

	Rs.
Budget Estimate for 1922-23	67,75,26,000
Shortage in establishment	64,00,000
Reduction in stocks	1,62,99,000
Sale of surplus stores and receipts from arrear payments, etc.	88,57,000
Addition required for Air Force say	47,00,000
TOTAL	<u>71,37,82,000</u>

5. Considerable public attention has naturally been displayed on the subject of the future policy with regard to Waziristan and we have reviewed this question in its bearing on the finances of India. We are informed that there is no idea in the mind of the Government of India of continuing a forward policy of military domination up to the Durand line at the present time, and that the idea has been abandoned. It is impossible to estimate what expenditure will be required in Waziristan in 1923-24 until the military and political situation is cleared up, but we understand that the Government have in view a policy which aims at early and substantial reduction.

6. We now deal with the expenditure of each of the four services, which is as follows:—

	1913-14	1921-22	1922-23
	Rs.	Rs.	Rs.
ARMY	27,87,45,000	61,82,42,000	60,42,30,000
ROYAL AIR FORCE	41,000	1,84,29,000	1,41,00,000
ROYAL INDIAN MARINE	63,49,000	1,03,91,000	1,36,99,000
MILITARY WORKS	1,33,06,000	5,14,07,000	4,54,97,000
TOTAL	29,84,41,000	69,84,69,000	67,75,26,000

ARMY EXPENDITURE.

The estimate of net expenditure in 1922-23 compares with the revised estimate for 1921-22 and the actual expenditure in 1913-14 as follows:—

1913-14, Actual Expenditure	Rs. 27,87,45,000
1921-22, Revised Estimate	61,82,42,000
1922-23, Budget Estimate	60,42,30,000

An analysis of the expenditure under the main headings is attached as Appendix A. It will be observed that there has been a total increase in the net cost of the Army since 1913-14 of Rs. 32,54,85,000 or 117 per cent. and that this increase is distributed over all the important headings.

STRENGTH OF THE ARMY.

2. The total authorised establishment of the Fighting and Administrative Services, exclusive of Aden, Persia and the Colonies and omitting reservists and auxiliary and territorial forces, was 309,893 on 1st April 1922 compared with 301,502 on 1st April 1914 made up as follows:—

	FIGHTING SERVICES.				Administrative Services.		Total.		Increase or decrease.
	Army.		Air Force		1914	1922	1914	1922	
	1914.	1922.	1914.	1922					
British Troops	76,244	68,686	...	1,869	3,846	7,206	80,090	77,761	-2,329
Indian Troops	154,487	144,617	..	2	2,213	25,938	156,660	170,557	+13,907
Civilians	...	...	...	84	5,477	10,007	5,477	10,001	+4,514
Followers	19,768	20,498	...	1,198	39,522	29,798	59,285	51,494	-7,791
Total	250,444	233,801	...	2,143	51,058	72,949	301,502	309,893	+8,391
Increase or decrease	-16,643.		+2,143		+21,891		+8,391		+8,391

* Includes about 14,000 Mule drivers of Animal Transport units and 6,000 men of Army Bearer and Hospital Corps who were followers before the war—but who have since been granted "combatant" status for rations, etc.

This table shows that although a considerable reduction has been effected in the strength of the fighting services, this has been more than set off by the increase of staff employed in the administrative services, and the total establishment has increased by 8,391. A detailed analysis of the personnel is given in Appendix B.

Apart from financial considerations the strength and distribution of the army necessary for the defence of India and the maintenance of internal security are matters which we feel must be left largely in the hands of His Excellency the Commander-in-Chief

FIGHTING SERVICES.

3 Since 1913-14 the fighting efficiency of the army has been increased enormously by the introduction of modern rifles, machine guns, etc., and, while we are informed that, so far as external menace is concerned, there has probably been a relatively greater improvement in the equipment of neighbouring tribes and the Afghan forces, it must be borne in mind that a large portion of the army is maintained for internal security

4 *British Infantry.*—Of the total 70,545 British troops in India, including 1859 Air Force, 16,200 are infantry, the strength of which has been reduced by 6,056 officers and men since 1913-14 or by 11·2 per cent. There are now 15 Battalions of British Infantry compared with 51 in 1913-14 but although the fighting efficiency of each of these units has greatly increased, no reduction has taken place in the composition of the battalions. On the contrary the peace strength of these units has been considerably increased as shown below :—

	1913-14.	1922-23.
British Officers	28	28
British Other Ranks	1,004	1,012
Indian Ranks		45
Followers, Class I	} 37	{ 25
" " II			48
TOTAL	1,069	1,158

It will be observed that the number of British Other Ranks on the peace establishment has increased from 1,004 in 1913-14 to 1,012 in 1922-23 and that the strength of the unit has also been increased by the addition of 47 Indian ranks to act as mule drivers for machine guns and 36 followers for miscellaneous duties, e.g., cooks, tailors, etc. On mobilisation the peace establishment of battalions is reduced and only 840 British Other Ranks per battalion are retained on the war establishment. We do not think there is any necessity for maintaining a peace establishment on a much higher scale than the war establishment. In England and elsewhere the policy is to maintain peace cadres, about 25 per cent. below the war establishments, which are capable of rapid expansion in war and a similar practice obtains in certain sections of the army in India. We recognise that in India reinforcements of British troops cannot be obtained in less than about two months, but from statements which have been supplied to us, it appears that, as at present contemplated, only 5 battalions of British troops would be engaged on active operations during the first two months after mobilisation. During this period, the estimated wastage of these troops on a 7½ per cent basis would be 630 men and we cannot think that any serious difficulty would arise if in war this number had to be found from the troops required for internal security, although we realise that this will entail a temporary pooling of resources as was found necessary in the Great War. In our opinion the number of troops per battalion required on mobilisation to maintain internal order in India should be capable of a considerable reduction in view of the increased fighting efficiency of the units. We recommend that the peace establishments of British battalions should be fixed at 884 British Other Ranks, the number required for the war establishment plus a margin of 5 per cent to provide for men who may be absent through sickness, etc. This proposal would effect a reduction of 5,760 British Infantry. We are informed that the estimated cost of a British soldier in India is Rs 2,500 per annum for 1922-23 and a reduction of 5,760 men would therefore save Rs. 1,44,00,000 per annum.

5 *Indian Infantry.*—The peace establishment of Indian Other Ranks in an Indian battalion is 26 except in the case of training battalions with which

we deal later. The war establishment of the battalions is 766 and we consider there is little justification for maintaining the peace strength of these units in excess of the war establishment, as any deficiency on account of sickness can be made up by drawing on the training battalions and reserve. We recommend, therefore, that the number of Indian troops per battalion should be reduced to 766 forthwith which would effect a reduction of 4,800 troops in the 80 active battalions now maintained.

Under the existing organisation there is one training battalion for every four active battalions. The establishment of a training battalion is fixed at 650 based upon the normal intake of recruits for the four active battalions and the estimated wastage during the first two months of a campaign. The reductions which we have proposed in the size of the active battalions will reduce the intake of recruits and effect an automatic reduction of 17 men per training battalion. We have also examined the wastage figures in recent campaigns and consider that the provision made for wastage in calculating the required strength of training battalions is excessive. Further, no allowance appears to have been made for the fact that during the first two months after mobilisation a considerable number of recruits will have completed their training. In these circumstances we are of the opinion that no difficulty would be experienced if the strength of the training battalions was reduced by 50 per battalion saving 1,000 men.

A similar position obtains in regard to Pioneer battalions. There are 9 active and 3 training battalions with a total strength of 7,341 and 1,296 men respectively. We consider that the peace establishment of the active battalions should be reduced to 722 the number required for the War Establishment, saving 843 men. No reduction in the strength of training battalions appears practicable.

The position in regard to Gurkhas is somewhat different from the ordinary Indian battalions. The peace establishment fixed at 941 includes recruits and provision for wastage and no training battalions are provided. We are informed that the number of Gurkhas which can be obtained is strictly limited to the existing strength and we make no recommendation.

The total immediate reduction in Indian troops which we recommend above is 6,643 men. We are informed that the average cost of a Sepoy in 1922-23 was Rs. 631, so that a reduction of 6,643 men would effect a saving of Rs. 42 lakhs.

At the present time the authorised strength of the reserve is 34,000 Infantry but the actual strength is only 8,900 owing, we understand, to considerable difficulty having been experienced in obtaining the required numbers. We have suggested to the Commander-in-Chief that an increase in the reserve pay would probably attract more men, and that, in addition, consideration should be given to the inclusion of a term of service with the reserve in every man's attestation on enrolment. This proposal has been considered by the military authorities and it is suggested that the terms of enlistment should be altered to include five years' service with the colours and ten years with the reserve if required, the pay of reservists to be increased to Rs. 7 per mensem for the first five years in the reserve and Rs. 4 for the last five years, the total colour plus reserve service of 15 years to count for pension at Rs. 3 per month.

We think that a scheme of this nature would prove attractive to the men but that the provision of a pension should be accompanied by a liability to be called up for service in the event of a national emergency. If this proposal is adopted we consider that the peace establishment of battalions should be gradually placed on a cadre basis which might ultimately be fixed at, say, 20 per cent. below the war establishment. This would effect a further saving of about 14,000 men or Rs. 88,34,000 less the increased cost of the reserve which would not exceed Rs. 25 lakhs.

The proposal to increase the period of enlistment with the colours would also ultimately reduce the number of recruits required annually. This in turn would reduce the establishment of the training battalions and the strength of the recruiting staff and result in considerable further economy.

6. *Cavalry*.—The number of British Regiments has been reduced from 9 in 1913-14 to 8 required for 1922-23 and the Indian regiments have been reduced

from 39 to 21. We see no reason why the British Cavalry regiments should not be reduced *pro rata* to the Indian regiments and consider that 3 British Cavalry Regiments should be dispensed with for 1922-24, saving Rs. 74,00,000.

7. *Artillery*—The number of British Officers and men in the Artillery has decreased from 15,205 in 1913-14 to 11,446 in 1922-23, but the number of Indian Officers and Other Ranks has increased from 10,132 to 13,902 so that the total establishment of the Artillery has slightly increased from 25,337 to 25,348. We are of the opinion that in view of the modern weapons now available and their increased effectiveness owing to the introduction of aeroplanes, improved signalling arrangements, etc., some economy in Artillery establishment should be possible and we suggest a reduction of 10 per cent. in expenditure which would effect a saving of Rs 43,00,000.

8. *Other fighting services*—The remaining establishment of the Fighting services comprises the Signal Service and Armoured Cars, in regard to which we make no recommendation, and the Royal Air Force, with which we deal in a separate section of our Report.

9. *Summary*—The adoption of our proposals will involve a recurring saving of Rs 303 lakhs a year which will ultimately rise to Rs. 366 lakhs. The budget for 1922-23, however, took into account a saving of Rs. 64 lakhs due to a temporary shortage of British troops compared with the establishment now authorised. Our recommendations will thus yield a net additional saving of Rs. 239 lakhs a year immediately on their introduction and it should be possible to increase this saving in the near future to Rs. 302 lakhs a year. We recognise, however, that it will not be possible to secure the whole of the former saving in 1923-24.

ARMY HEADQUARTERS, STAFF OF COMMANDS, ETC.

	Rs.
1913-14, Actual Expenditure	92,49,948
1921-22, Revised Estimate	1,84,57,000
1922-23, Budget Estimate	1,83,08,200

10. A considerable portion of the large increase in expenditure under this heading since 1913-14 is due to the introduction of the four Command system in 1921. We are informed that the basic factors which determined the adoption of four Commands were—

- (a) the limitations placed on the size of the area which can be efficiently controlled by one man;
- (b) the desirability of making military districts coincident with civil provinces;
- (c) the importance of providing adequate machinery to deal with the additional military liability imposed by internal security once the field army has left the area;
- (d) the necessity of placing with Army Commanders the administrative control of, and the responsibility for, the troops under their command.

It was anticipated that under the new organisation considerable relief would be afforded to army headquarters by an extensive decentralisation of control, but in this connection the military authorities submitted that it would be futile to hope, even with the utmost decentralisation, that the staff at headquarters could be reduced to the pre-war level.

11. *Establishment of Officers of higher ranks*.—The sanctioned establishment of Officers of higher ranks not holding regimental appointments (*i.e.*, above the rank of Lieutenant-Colonel) is as follows:—

	Sanctioned Establishment.
Field Marshal	1
Generals	3 *
Lieutenant-Generals	6
Major Generals	24
Colonels	119

We are informed that the Military authorities propose to reduce the establishment by two Lieutenant-Generals and seven Major Generals which will effect a future saving in non-effective charges

12. Army Headquarters—

	Rs.
1913-14, Actual Expenditure	28,56,148
1921-22, Revised Estimate	58,13,000
1922-23, Budget Estimate	61,89,000

The total expenditure for 1922-23 is more than double that of 1913-14 although the number of troops in the fighting services has decreased by 15,517 and provision has been made for decentralising the control of minor matters to the Commands. The establishment of Army Headquarters has increased as follows.—

	1913-14 No	1922-23 No
Officers	83	153
Civilians	335	729
Meritorials	197	310

These numbers for 1913-14 represent the authorised establishment and exclude attached officers whose pay was charged against the unit to which they belonged. Including these officers and seconded officers in 1922-23 the following statement shows the growth of the establishment of officers and clerks in each section of Army Headquarters :—

Branch	1913-14		1922-23	
	Officers	Clerks	Officers	Clerks
General Staff	48	59	49	91
Adjutant General	20	94	26	180
Quartermaster General	22	128	59	362
Ordinance	5	32	5	36
Military Secretary	2	22	8	56
His Excellency the Com- mander-in-Chief and Per- sonal Staff.	7		7	4
TOTAL	104	335	154	729

The establishments for 1922-23 were recently examined by a Committee appointed by the Government of India and presided over by the Hon'ble Mr. Innes. The Committee recommended that the authorised establishment of Army Headquarters, excluding attached officers, should be reduced from 153 to 108 saving in officers' pay Rs. 8,13,000. The Commander-in-Chief has agreed that the number of officers should be reduced to 134 saving Rs. 3,09,600, but we consider that further reductions are possible. For example we consider that the post of Chemical Adviser in the General Staff Branch should be abolished. Further, we think that the possibility of amalgamating the Directorates of military training and military operations should be explored. The Directorate of organisation and mobilisation and the Directorate of Auxiliary Forces might, we think, possibly be absorbed by the Directorate of staff duties and the Controller of contracts by the Directorate of supplies and transport.

We are informed that the position of Deputy Quartermaster General has been abolished at the War Office in England and we see no reason for its retention in India.

It is obviously not practicable in the limited time at our disposal to make any very definite detailed recommendations but we consider that the provision for officers at Army Headquarters should be reduced to the full extent recommended by the Innes Committee and that at least Rs. 4 lakhs of this saving should be effected in 1923-24 and that a further reduction should be kept in view.

With regard to clerks the Innes Committee recommended a lump cut of Rs. 9 lakhs based upon a *pro-rata* reduction in the number of clerks to that recommended in the case of officers. The Commander-in-Chief has agreed to a reduction of approximately Rs. 1,30,800, but we consider that a saving of at least Rs. 2,00,000 should be effected for 1923-24.

We have discussed the question of the Headquarters staff very fully with the Commander-in-Chief who has shown every desire to reduce it, as far as practicable. As a result of our discussion we recommend that the total provision for Army Headquarters for 1923-24 should be limited to Rs. 55,89,600, a reduction of Rs. 6,00,000.

13 *Staff of Commands, Districts, Brigades, etc —*

	Commands	Districts Brigades
	Rs.	Rs.
1913-14, Actual Expenditure .	4,86,498	55,85,000
1921-22, Revised Estimates .	30,45,000	87,32,000
1922-23, Budget Estimates	30,14,380	93,03,960

Before the war the army in India (exclusive of Burma and Aden) was organised under two Commands subdivided into 9 Divisions which were again subdivided into 32 Brigades and 5 Cavalry Brigades. In addition there were 3 Independent Brigades who dealt directly with Army Headquarters.

Under the post-war organisation India is divided for administrative purposes into 4 Areas or Commands. These are subdivided into 13 districts which are further subdivided into 29 Brigade areas, and in addition there are 5 Cavalry Brigades. The troops in Waziristan are temporarily under the direct control of Army Headquarters.

The underlying principle of the present organisation appears to be that the Army should be in a continual state of preparedness for instant operations in the event of war or unrest. We are informed that the total annual cost of the 4-Command scheme when introduced was Rs. 31,00,000. In our opinion it is a question whether this large expenditure can be justified and we understand that if the scheme is finally adopted considerable additional expenditure will be necessary to provide office accommodation, etc. We consider that the organisation should be the minimum necessary to enable rapid transition to be made from peace to war conditions in the event of emergency. We are informed that if the number of Commands were reduced to three a direct saving of Rs. 3,59,000 would be effected. At the same time we feel that the present system of four Commands has been so recently inaugurated that it might be given a further trial for 12 months after which the whole question should be reviewed, but in the meantime no expenditure should be incurred on new offices.

14. With regard to districts we understand that steps will be taken to reduce the number and that a saving of Rs. 4 lakhs will be effected in 1923-24.

15. We understand the increased cost of Districts and Brigades in 1922-23 compared with 1921-22 is due to the transfer of Rs. 6,62,000 for mechanical transport charges from another heading and the provision of Rs. 3,64,000 for syce and forage allowances for officers' chargers. We consider that the number of motor cars in use in Districts and Brigades is excessive and we deal with this question at a later stage.

16. *Summary.*—We recommend that the provision for Commands, Districts and Brigades in 1923-24 should be reduced by Rs. 4,00,000, in addition to which there will be savings under transport and forage charges.

17. *Embarkation and Railway Transport Staff—*

	Embarkation Staff	Railway Transport Staff
	Rs.	Rs.
1913-14, Actual Expenditure .	Nil	13,300
1921-22, Revised Estimate .	53,000	4,60,000
1922-23, Budget Estimate . .	1,58,300	4,86,000

Before the war the work connected with the embarkation and disembarkation of troops at Bombay, Karachi and Calcutta was carried on by the ordinary staff of the District Brigade. There was also no separate organisation for dealing with the transportation of troops by rail the necessary work being performed by the ordinary staff of the Divisions. We recommend that all work in connection with the movement of troops should be decentralised to Commands and Districts and that the total provision for Embarkation and Railway Transport Staff be limited to Rs. 3,00,000, a saving of Rs. 3,44,300.

TRANSPORT CHARGES.

18. The estimated cost of transport for 1922-23 compared with 1913-14 is as follows:—

	1913-14.	1921-22 Revised Ex- penditure	1922-23. Budget.
	Rs	Rs.	Rs
Animal transport . . .	1,27,84,000	2,15,33,000	1,81,17,000
Hire of transport . . .	3,22,000		42,65,000
Mechanical transport . . .	Nil		1,41,38,000	1,86,43,000
Rail, Road, Sea and inland water charges . . .	61,83,000	3,63,55,000	2,39,75,000
TOTAL	1,92,89,000	7,20,26,000	6,50,00,000

This table shows that the total cost of transport has increased more than three-fold compared with 1913-14 although the number of fighting troops has been reduced. We are of the opinion that this large increase is due to a considerable extent to the organization being maintained in a state of preparedness for war and it appears that the introduction of improved methods of transport has resulted in the maintenance of a dual organization with a combined capacity far in excess of that available in 1913-14. We consider the maintenance of a large transport reserve cannot be justified in present financial circumstances, and that it should be possible to reduce the total cost of animal and mechanical transport to approximately double the pre-war expenditure.

19. *Animal and Mechanical Transport.*—The following statement shows the personnel employed in connection with the animal and mechanical transport in 1913-14 and 1922-23 respectively:—

	1913-14.		1922-23	
	Animal transport.	Mechanical transport.	Animal transport	Mechanical transport.
	No.	No.	No.	No.
Officers with King's Commissions . . .	62	Nil	64	149
British other ranks . . .	196	..	78	950
Indian Officers . . .	66	..	193	29
Indian other ranks . . .	1,155	..	11,488	2,782
Civilians . . .	98	..	130	622
Followers including artificers . . .	28,000	..	7,649	3,099
TOTAL	24,577	Nil	19,602	7,631

This table shows the total personnel employed on transport duties has increased from 24,577 in 1913-14 to 27,233 in 1922-23 due mainly to the introduction of mechanical transport.

With regard to animal transport considerable savings will accrue from the fall in prices of fodder, etc., which has taken place since last year. We refer to these savings in our observations in regard to stocks.

The increase in the cost of hire of transport from Rs 3,22,000 in 1913-14 to Rs 42,65,000 required for 1922-23 is due to the inclusion of Rs. 30,00,000 for hired transport on the Harnai-Fort Sandeman Road in Baluchistan. We are informed that a light railway could be constructed from Hindubagh to Fort Sandeman, a distance of about 70 miles at a cost of about Rs. 35 lakhs. We think that tenders should be obtained for the construction of this line and

if the cost involved approximates to the figure named, we recommend that the work should be taken in hand forthwith. The remaining increase in the cost of hired transport, Rs. 9,43,000, is said to be due to higher contract rates and partly to the larger movements of stores for Indian units not previously supplied.

20. We have examined the position in regard to mechanical transport and attach a statement (Appendix C) showing the estimated military requirements and the present stock of vehicles, classified at our request, under (a) vehicles fit for war conditions, (b) vehicles fit for war conditions subject to repairs and (c) obsolete vehicles. It will be seen that the total stock of vehicles excluding motor cycles is now 3,369 of which 1,792 vehicles are obsolete. We recommend that all these obsolete vehicles should be sold or scrapped forthwith except vehicles of standard types which we consider should be completely dismantled and the parts thereof placed in stock as spare parts for repair work.

We consider there is no justification for providing the stock of vehicles which the military authorities estimate is required, and we recommend that, while the present financial conditions obtain, the authorised establishment of motor vehicles including reserves should not exceed 1,600 vehicles, excluding motor cycles. The holding of large excess stocks must necessarily result in increased costs for maintenance, garage accommodation, interest on capital, depreciation and personnel, and in addition there is a tendency to use the vehicles, if available, for non-essential purposes. In this connection we examined the records maintained by one motor transport company and found they were far from satisfactory; the number of vehicles in use was considerably in excess of the requirements, and in many cases the daily loaded mileage run by individual lorries was only 2 to 4 miles with light loads of about 5 maunds.

21. We are informed that the number of motor cars in use has recently been reviewed and reduced to 261 distributed as follows:—

	No of cars
Command Headquarters (4)	12
District Headquarters (14)	58
Brigade Headquarters (38)	38
Schools and Institutions—	
• Staff College	2
Cavalry School	1
O. C., Deolali	1
	—
Reserve cars—	4
Northern Command	8
Eastern Command	4
Western Command	6
Southern Command	5
Burma District	1
	—
Embarkation Staff	24
Railway Transport Officer	3
Signals and Sappers and Miners Units	1
8 Armoured Car Companies and Sections	5
	—
	25
<i>M. T. Formations.</i>	
5 Column Headquarters	5
10 Motor Ambulance Convoys	20
10 Heavy M. T. Companies	20
1 Ford Van Company	2
Khyber Ropeway Company	2
4 Mobile Repair Units	4
M. T. Training School	1
M. T. at Aden	5
Central M. T. Stores Depot	1
Technical Inspectors	3
Bushire M. T. Section	1
<i>Additional for Waziristan</i>	
2 Ford Van Companies	4
Cars for staff:—	
Waziristan	16
Zhob	5
Kohat	2
	—
TOTAL	261

In England the normal peace establishment of motor cars was fixed at 90 for 1922-23 and we understand that the number has since been reduced. We consider the establishment of motor cars in India should be limited to not more than 150 and that the mileage run should be restricted to an average of 9,000 miles per car per annum.

22 We are informed that the Military authorities estimate the running cost of a Ford car at Rs. 4,250 per annum for a mileage of 9,600, including petrol, lubricants, tyres and repairs, but exclusive of the cost of personnel, interest on capital or depreciation. This we consider excessive. The average number of miles run per gallon of petrol is only 14, which appears to us unduly low and we recommend that the possibility of increasing the mileage run per gallon of petrol for all vehicles should be explored. With regard to lorries we understand that the Commander-in-Chief has accepted the recommendation made by the Braithwaite Committee that the mileage run per transport lorry and ambulance maintained in use should be limited to 1,000 miles per annum. We understand that the principle of limiting the mileage to be run annually by each vehicle is considered preferable to reducing the number of vehicles to the minimum necessary to meet peace requirements. This arrangement is admittedly not economical but it is represented to us that it is not practicable to largely reduce the present nucleus staff and that it is better to keep the vehicles in use than to retain them in storage where they would rapidly deteriorate. In these circumstances we recommend that the 1,000 mile limitation should be applied to all lorries and miscellaneous vehicles and recommend that a system of rationing petrol and other supplies should be introduced to ensure that the mileage limitation is enforced.

We recommend that the number of ambulances in use should be limited to 200, that the total establishment of motor cycles should be fixed at not more than 350 and that all obsolete cycles should be sold or scrapped forthwith.

23. As regards personnel, we support fully the recommendations of the Braithwaite Committee with the exception of that relating to the increase of establishment of the Mechanical Transport Training School. The adoption of these recommendations will save about Rs. 20 lakhs a year, to which must be added a saving of Rs. 1 lakh from the proposed reduction in the number of motor cars in use. The extension of the proposed mileage limitation to all motor vehicles will effect a further saving of Rs. 48 lakhs a year by reducing the consumption of petrol and lubricants, tyres and spare parts, and the expenditure on repairs. On the other hand about Rs. 14 lakhs a year will be required for the purchase of vehicles to replace those which have run their normal life and have become unserviceable. This provision, in 1923-24, will be used mainly for the purchase of armoured cars.

As a result of our consideration we are of opinion that the total annual expenditure on Animal and Mechanical Transport should be reduced by at least Rs. 55 lakhs. There will be a further saving of Rs. 15 lakhs in 1923-24 to which we refer under the Stock Account.

24. *Sea Transport Charges, Rs. 1,19,35,000* — A sum of £925,700 budgeted for in 1922-23 has proved an overestimate and we are informed that the provision contemplated for 1923-24 is £693,000, inclusive of £7,000 for the Royal Air Force, which has now been transferred to that section of the accounts. There will thus be a saving of £307,000, or Rs. 46,05,000, apart from the saving due to reduction in establishment. Against this payment India receives a contribution from the War Office of £130,000 towards the total cost of the trooping service.

25. *Railway, road and inland water charges.* — Of the total provision of Rs. 1,20,40,000 under this heading, Rs. 1,15,50,000 represents railway charges for movement of troops, the balance representing road and inland water charges. Before the current financial year all the railway charges of the army were recorded under one head of account, and no attempt was made to allocate them to different services of the army. In connection with the system of cost accounting now introduced, arrangements have been made to allocate the railway charges of the army to the various services and a partial distribution of the charges was made in the budget estimates for 1922-23. The total

provision under all heads amounting to Rs 1,99,75,000. As a result of various causes this estimate has been exceeded, and it is anticipated that the aggregate expenditure in 1922-23 will amount to about Rs 250 lakhs. We are informed that every endeavour is made to avoid unnecessary movements of troops and that the total railway charges for 1923-24 are expected to fall to Rs. 230 lakhs, in spite of an increase in charges by the railways representing Rs. 20 lakhs of the last mentioned amount. We recommend, however, that a larger reduction should be effected and that the provision of Rs 1,99,75,000 for railway charges under all heads should be reduced in 1923-24 to Rs. 1,85,00,000, a saving of Rs. 14,75,000. A further considerable reduction should be possible in subsequent years.

EDUCATIONAL AND INSTRUCTIONAL ESTABLISHMENTS

	Rs.
1913-14, Actual Expenditure	52,96,840
1921-22, Budget Estimate	1,06,74,000
1922-23, Budget Estimate	1,09,97,170

26. The main item included under the heading is a provision of Rs. 62,61,000 for practice ammunition for 1922-23, the corresponding figure for 1913-14 being Rs 38,33,000.

The expenditure is sub-divided under main heads as set out below :—

	1913-14	1922-23.
	Rs	Rs.
Supervising and Inspecting Staff	21,230	1,01,990
Staff College, Quetta	5,15,069	7,84,190
Small Arms Schools	1,34,945	6,58,670
Physical Training Schools	29,217	1,89,750
Cavalry School	1,74,602	5,36,450
Senior Officers' School . . . . .	...	2,87,170
Machine Gun School . . . . .	...	1,38,120
Artillery Schools . . . . .	...	2,38,000
Armoured Car Centre . . . . .	...	2,76,030
Mechanical Transport Training School . . . . .	...	4,23,000
Army Veterinary Schools	7,741	42,000
Supply and Transport Training School . . . . .	...	54,000
School of Cookery	10,231	36,000
Education of Military pupils at Medical Colleges and Schools	90,879	8,00,000
Miscellaneous including provision for practice ammunition	43,12,926	68,97,340
TOTAL	52,96,840	1,09,97,170

This table shows that the cost of training establishments has increased enormously since 1913-14. Excluding miscellaneous expenditure which is mainly for practice ammunition, we find that the cost of Educational and Instructional establishments has increased more than four-fold from Rs. 9,83,914 in 1913-14 to Rs. 40,97,830 required for 1922-23. We are informed that before the war the training of the Army in India was inferior to that of the Army at Home, and now that the army has been reduced it is of first importance that its training should reach as high a standard as that of the Home Army. We believe this object could be obtained without such a large increase as Rs. 31 lakhs, which the country cannot afford. We deal with the various establishments seriatim.

Small Arms Schools, Rs. 6,58,670.—These schools are maintained for the training of officers and non-commissioned officers as instructors in the use of rifles, light guns, light mortars and grenades. The standard number of instructors to be maintained in units has been fixed and it has been laid down that instructors must be in possession of certificates under two years' old. We are of opinion that in present financial circumstances the rules in regard to

holding certificates should be relaxed and the period between courses of training extended to three years. We recommend that the provision for small arms schools should be limited to Rs. 5,58,670, a reduction of Rs. 1,00,000.

Physical Training Schools, Rs. 1,89,750.—The cost of these schools has increased from Rs. 29,217 in 1913-14 to Rs. 1,89,750. We understand that a reduction of Rs. 65,000 is proposed for 1923-24.

Cavalry School, Rs. 5,36,450.—Although the strength of cavalry has been largely reduced since 1913-14, the expenditure on the cavalry school has increased from Rs. 1,74,602 in 1913-14 to Rs. 5,36,450. The present scheme provides for training annually the full number of instructors required by the units which we consider is not justified in present financial circumstances.

The Commander-in-Chief informs us that the training of the Cavalry is now more intensive than it was before the war and that it is essential, now that the Cavalry is being reduced, to maintain the highest possible standard and he would strongly deprecate any great reduction of instructors. In these circumstances we recommend that the provision for 1923-24 should be limited to Rs. 3,30,000, a reduction of Rs. 2,06,450.

Senior Officers' School, Rs. 2,87,170.—This school is for training field officers of all arms before substantive promotion to the rank of Lieutenant-Colonel. A reduction of Rs. 13,000 is proposed for 1923-24, and we make no recommendation.

Machine Gun School, Rs. 1,38,000.—We are informed that this school is essential for training officers and non-commissioned officers in the use of machine guns and we make no recommendation.

Artillery Schools.—The provision for 1922-23 included Rs. 1,50,000 for equipment which will not be required in 1923-24 and we suggest no further reduction.

Armoured Car Centre, Rs. 2,76,030.—The introduction of Armoured Car Companies necessitated provision being made for the tactical and mechanical training of personnel for this new service and we recommend no reduction for 1923-24.

Mechanical Transport Training School, Rs. 4,28,000.—We understand that the Mechanical Transport Training School in England has been abolished. This is not considered practicable in India, where motor transport is less highly developed, but in view of the reductions we are proposing in mechanical transport we recommend that the provision for 1923-24 be limited to Rs. 3,28,000, saving Rs. 1,00,000.

Education of Military pupils at Medical Colleges and Schools.—We recommend that the provision under this heading should be limited to Rs. 2,00,000 for 1923-24, a reduction of Rs. 1,00,000.

Miscellaneous, Rs. 68,97,340.—The scale on which practice ammunition is provided is considerably lower than in England and we are informed that no further reduction is practicable. The savings resulting from the reductions we have proposed in the strength of the fighting services have already been taken into account, and we make no recommendation.

We understand that in the budget of 1922-23 no provision was made for practice ammunition for troops serving in Waziristan as they were employed on military operations and it was not necessary for them to fire their practice ammunition; and that the withdrawal of troops from Waziristan will necessitate an increase of Rs. 23 lakhs in the grant for practice ammunition in 1923-24. This increase is a corollary of the large reduction in Waziristan expenditure mentioned in a separate section of this Report and cannot, we are afraid, be avoided. The saving in practice ammunition resulting from the reductions in the strengths of fighting troops, recommended by us, has been taken into account in assessing the financial effect of such reductions.

General.—As a result of our consideration, we are of the opinion that the provision for Educational and Instructional establishments should be reduced by Rs. 7,42,450 including a saving of Rs. 8,000 under the Staff College, Quetta, but the grant for practice ammunition will apparently have to be increased by Rs. 23,00,000.

ARMY EDUCATION.

	Rs
1913-14, Actual Expenditure	11,70,583
1921-22, Budget Estimate	42,37,000
1922-23, Budget Estimate	37,25,000

27. We are informed that the large increase in expenditure since 1913-14 is due to (a) the policy of His Majesty's Government that education shall henceforward form an integral part of the military training of the British soldier and (b) the decision of the Government of India that the system adopted for the British Army should be applied, *mutatis mutandis*, to the Indian Army.

The British soldier is in most cases literate on enlistment and, while additional education has much to commend it, we consider it essential to limit the extent to which educational facilities should be provided at the expense of Government. We are of the opinion that the extent of these educational facilities should be reviewed and limited to the most useful subjects. We recommend that a definite amount should be allocated for expenditure on education which should be fixed for a period of say 5 years to ensure continuity of policy.

The total staff of the education service has increased from 309 in 1913-14 to 1,546 required for 1922-23, and an analysis of the staff employed and the expenditure incurred in each of these years is as follows.—

	1913 14		1922-23.	
	No.	Total cost	No.	Total cost.
		Rs.		Rs.
Supervising and inspecting staff	7	1,04,000	63	3,41,300
British Army School of Education . . . . .	..	<i>Nil</i>	83	1,84,200
Indian Army School of Education . . . . .	..	<i>Nil</i>	65	1,26,000
Garrison Regimental and detachment schools for British troops	243	3,22,000	524	16,12,000
Garrison Regimental and detachment schools for Indian troops	6	<i>Nil</i>	579	4,44,000
Lawrence Military Schools	50	1,69,600	184	3,99,900
Prince of Wales' Royal Military College, Dehra Dun . . . . .	..	<i>Nil</i>	47	1,11,800
King George's Military Schools . . . . .	..	<i>Nil</i>	..	20,000
Language rewards . . . . .	..	2,95,000	..	3,00,000
Miscellaneous	3	1,93,000	1	2,53,800
Total	309	12,11,000	1,546	37,92,000
Less receipts . . . . .	..	40,000	..	67,000
Total . . . . .	..	11,71,000	..	37,25,000

The large increase in the inspecting and supervising staff is due to the provision of both British and Indian Inspectors at Army Headquarters, at the headquarters of each of the four Commands and at the headquarters of each of the 15 districts, including Burma and Aden. We consider there is no justification for the employment of such a large staff of Inspectors costing Rs. 3,41,300.

We are informed that the staff of the garrison, regimental, and detachment schools for British troops has within the past 12 months been reduced by 86 officers saving Rs. 4,00,000 and that the King George's Military Schools, for which Rs. 2,00,000 was provided in the current year's Budget are not yet in existence. Further economies should be possible under the headings of incidental and miscellaneous expenses of British and Indian Garrison Schools, etc., for which Rs. 2,80,470 was provided in 1922-23.

As a result of our consideration we are of opinion that in existing financial circumstances the provision for army education should be reduced to Rs. 33,00,000 for 1923-24 and be fixed at this figure for the next five years, exclusive, however, of any additional expenditure on the Dehra Dun and King George's Military schools for the purpose of giving a good public school education to Indian boys to enable them to pass into Sandhurst. A proportionate reduction should be made in this figure, if our proposals regarding reductions in the strength of fighting troops are accepted.

MEDICAL SERVICES AND HOSPITALS.

	Rs
1913-14, Actual Expenditure	79,99,000
1921-22, Revised Estimate	2,27,66,000
1922-23, Budget Estimate	3,22,95,000

28. Excluding Aden the staff in 1922-23 compares with that employed in 1913-14 as follows:—

	1913-14	1922-23
Officers, R. A. M. C	331	332
Officers, I M S	261	495
Nursing Sisters	91	267
R. A. M. C other ranks . . . . .	. . .	450
Assistant Surgeons	411	416
Sub-Assistant Surgeons	664	739
Army Hospital Corps	2,934	
Army Bearer Corps	3,578	
Regimental Hospital Establishments (not included in medical Budget)	2,316	
Indian Hospital Corps		12,065
Officers Army Dental Corps	17	18
	10,635	14,782

The average daily number of patients of the British and Indian Army respectively in hospitals in 1922 compared with the number of beds was as follows:—

	Beds	Patients
British Army	8,270	1,927
Indian Army	12,708	4,506

From this it appears that the British hospitals are not used to a quarter of their capacity and the Indian hospitals are used to little more than a third of their capacity.

It has been pointed out to us that a margin of 55 per cent. must be allowed to provide for seasonal sickness, epidemics, etc. Even so we consider that an all round reduction of 25 per cent. in the number of beds maintained could safely be made. For example, in the United Provinces district no less than 1,118 beds are maintained in British hospitals for a daily average of 355 men in hospital, and in the Central Provinces district 772 beds are maintained in Indian Station hospitals for an average daily number of 155 sick in hospital. We recommend that an enquiry be made with a view to closing down hospitals where their retention is not justified and to substantially reducing the number of beds in the hospitals retained. This should make it possible to effect a considerable reduction in the staff employed irrespective of the savings which will result if our recommendations for the reduction of the establishments of the fighting units be adopted. In particular we have been impressed by the increase in the number of Indian Medical Service officers employed on military duty in spite of the concentration of medical arrangements which might have been expected to result from the introduction of the Station hospital system for Indian troops. The cost of the present establishment is Rs. 145 lakhs, and we recommend that a reduction of at least Rs. 5 lakhs should be effected, in addition to the savings which should automatically result from reductions in Army personnel.

Other large items included in the 1922-23 budget are :—

	Rs.
Provisions and diet for patients	87,00,000
Clothing for patients	25,00,000
Drugs and dressing instruments	15,00,000
Provisions for staff	15,94,000
Clothing for staff	6,99,019

We are informed that the number of patients and cost of diet were over-estimated, with the result that for 1922-23, a saving of Rs 46 lakhs is anticipated under provisions and diet, of which Rs. 15 lakhs merely represents a transfer to the food charges of the fighting services. There will also be a saving of Rs 16 lakhs for clothing for patients. We allow elsewhere for the saving in expenditure which may be anticipated from the fall in prices.

We are informed that there is a fixed scale of medical and other equipment for military hospitals, and that the officers in charge submit indents for drugs once a year through their local administrative medical officers who scrutinize the indents and after such adjustments as are necessary pass them on to the Medical Stores Department for compliance. In view of the lower percentage of sickness we consider that a saving of at least Rs 1 lakh should be effected in the cost of drugs. The reductions in the number of beds which we have recommended should make it possible to effect further savings in respect of the supply and maintenance of equipment.

We recommend that a reduction of Rs 53 lakhs should be made in the total estimates under this head in 1923-24, apart from the transfer of Rs. 15 lakhs to the fighting services, and the savings which we have taken into account elsewhere as the result of the reduction in the number of troops, fall in prices, reduction of stocks or other causes.

WORKING EXPENSES OF DEPÔTS, ETC.

	Net expenditure.
	Rs.
1913-14, Actual Expenditure	41,33,645
1921-22, Budget Estimate	1,85,66,000
1922-23, Budget Estimate	1,21,13,560

29. The above figures represent the net expenditure after allowance has been made for expenditure transferred to other heads of account or recovered by means of credits and so-called receipts which we understand represent mainly savings by the purchase of surplus stores at rates less than the vocabulary rates. An analysis of the gross expenditure is given in Appendix D from which it will be seen that the total working expenses have increased from Rs. 1,03,99,075 in 1913-14 to Rs. 2,84,02,560 or by 173 per cent.

We deal seriatim with the various heads under which the account is set out.

30. *Arsenals and Ordnance Depôts—*

	Gross expenditure.
	Rs.
1913-14, Actual Expenditure	26,08,924
1922-23, Budget Estimate	72,17,810

There has been no change in the pre-war numbers of arsenals and ordnance depôts, but we understand that there has been a large increase in work owing to the transfer of barrack, hospital, and miscellaneous equipment from the Supply and Transport Corps, the abolition of the silladar system for Indian Cavalry and the introduction of new equipment.

We are informed that the estimate for the current year will be largely exceeded and that no reduction can be anticipated in 1923-24 on the current year's budget figure. On the contrary it is stated that an additional Rs. 2 lakhs will be required for reconditioning stores and provision will have to be made for increased transportation charges owing to increased rates.

In the section of this Report relating to the Stock Account we are recommending that no surplus stores should be retained and that the total value of stores held, including reserves, should be reduced to not more than Rs. 8 crores, new purchases being curtailed. If this is done it should be possible ultimately to effect large reductions in the cost of arsenals and ordnance depôts. The disposal of these stores will undoubtedly throw more work on the Depôts in 1923-24, but on the other hand the curtailment of new purchases and the proposed reduction in troops will considerably reduce the quantity of stores to be handled. In view of all the circumstances we consider that the provision for 1923-24 should be limited to the same amount as that provided for the current year and that the possibility of effecting economy by temporarily utilising military labour drawn from existing units for clearing up arrears of work should be explored.

We are informed that receipts under Arsenals and Ordnance Depôts in 1922-23 include a special credit of Rs. 10 lakhs on account of the difference between prices paid to the Disposals Commissioner for certain stores purchased from him and the vocabulary prices of these stores, and that a similar saving will probably be realised in 1923-24 as the result of the general fall in prices.

31. *Clothing and Boot Depôts, Rs. 4,74,084*—During the war Government undertook the liability for supplying clothing and boots to Indian troops and followers. There are now four depôts but two of them are said to be only temporary and we consider that steps should be taken to close them at an early date. We have ascertained that units at present maintain their own mobilization reserves of winter clothing and also working stocks up to a limit of three months' requirements. We are of opinion that it is not economical for units to maintain mobilization reserves of winter clothing and we recommend their withdrawal to central depôts if suitable accommodation is available. This we understand is being done. We consider that some saving in the cost of depôts for 1923-24 should result from the reduction in stocks maintained. During the current year the stocks to be maintained have been reduced by over Rs. 59 lakhs and further reductions are anticipated for 1923-24. Some economy should also be possible by reducing the proportion of British to Indian personnel and we recommend the provision for 1923-24 be limited to Rs. 4,50,000. We are informed that the receipts for 1922-23 estimated at Rs. 4,00,000 mainly represent savings by purchases of stores below the vocabulary rates and that there will probably be a reduced saving under this heading for 1923-24 which will more than set off any decrease in expenditure.

32. *Supply Depôts*—The District Supply Companies are closely inter-related with the Supply Depôts and it will be convenient to consider the two organisations together.

	Supply Depôts Gross Expenditure.	District Supply Companies
	Rs.	Rs.
1913-14, Actual Expenditure . . .	3,13,057	Nil.
1921-22, Budget Estimate . . .	44,62,000	40,66,000
1922-23, Budget Estimate . . .	98,12,000	32,77,000

Before the war there were no District Supply Companies. The arrangements for the purchase and supply of rations, fodder and other miscellaneous supplies for which the Supply and Transport Corps were responsible were controlled largely by the divisional Commanders. There were small depôts in charge of an officer of the Supply and Transport Corps at the principal cantonments at which British units were located while at the outstations there were small depôts in charge of a subordinate.

The whole system was reorganised in 1917-18 and has since been developed by the military authorities. At the present time the arrangements for the purchase and supply of non-perishable stocks are centralised at Army Headquarters. Supplies are purchased in bulk for the whole of India by a Controller of Contracts under the orders of the Quartermaster General. The Director of Supplies and Transport, also under the control of the Quartermaster General, is responsible for the general control and supervision of the supply services. The arrangements for the distribution to depôts and

sub-depôts and subsequent redistribution to the troops or to other depôts are carried out by a Deputy Director of Stocks under the control of the Director of Supplies and Transport. The organisation for distribution consists of (a) 13 supply depôt companies whose functions are to maintain the stocks at depôts and sub-depôts from which the issues to units are made and (b) 13 District Supply Companies each consisting of a headquarters section and a number of Brigade sections for distributing supplies from the Depôts to the troops

The total staff employed in the District and Depôt Supply Companies compared with the pre-war establishment is as follows:—

	1913-14.	1922-23		
	Supplies	District Supply Companies	Supply Depôt Companies *	Total
Officers with King's Commissions	76	86	105	194
British other ranks	234	225	183	408
Indian Officers		73		73
Civilians	567	243	589	832
Followers	2,931	1,280	2,316	3,596
TOTAL	3,858	1,907	3,196	5,103

* Includes Deputy Director of Stocks and his establishment

The present system was recently examined by the Braithwaite Committee who recommended a reversion to the pre-war system of station supply in the area Cis-Indus but including Karachi and a continuance of the present system in the Trans-Indus area. This proposal we understand would effect a reduction of 46 British Officers, 49 British Other Ranks and 925 Subordinate personnel saving in pay alone Rs. 13,00,000.

We understand that the Commander-in-Chief is prepared to accept the proposals made by the Braithwaite Committee, but we are of opinion that the possibility of effecting economy in the Trans-Indus area has not been fully explored.

Approximately one-third of the Army in India is located west of the Indus and the following statement shews that the staff of the Trans-Indus Supply Companies is relatively much greater than the staff in the Cis-Indus area:—

	Cis-Indus.	Trans-Indus.	Total
Officers with King's Commissions	85	57	142
British Other Ranks	220	139	359
Indian Officers	73		73
Civilians	285	385	670
Followers	1,648	1,156	2,804
TOTAL	2,311	1,737	4,048

This table indicates that a large reduction in personnel should be possible in the Trans-Indus area, and further it will be observed that of the total proposed establishment of 4,048, the number of officers employed is 142, whereas in 1913-14 there were only 76 officers in the total establishment of 3,858. The proportion of British Other Ranks has similarly increased, the number employed having risen from 234 in 1913-14 to 359 required for 1923-24.

33. The large increase in the expenditure under supply depôts for 1922-23 compared with 1921-22 is due to (a) the inclusion of Rs. 23,00,000 to meet the additional expenditure incurred in the turnover of mobilization reserves of foodstuffs which have to be issued in substitution for the less expensive

standard rations and (b) insufficient allowance having been made for transportation charges in 1921-22.

The necessity for providing for the full cost of turnover was overlooked in 1921-22 and we are of opinion that if it costs Rs 23,00,000 annually, in addition to handling and overhead charges, to maintain a reserve stock of Rs. 41,00,000 the necessity for holding such reserve should be carefully examined and the quantities reduced to a minimum.

We are informed that the present reserves were fixed to cover the requirements of the Covering Force for 60 days after mobilization and of the whole Field Army for a period of 30 days. It is admitted, however, that only a portion of these troops could be placed in the field during the first three months and we recommend that the mobilization reserves should be substantially reduced so as to effect a saving of Rs 15,00,000 in the turnover and a further saving in the cost of handling, etc.

In view of all the circumstances we are of opinion that a saving of Rs. 41 lakhs should be effected in the cost of the supply services for 1923-24, and that the whole position should again be reconsidered in 12 months' time with a view to a further reduction being effected.

Directorate of Stocks, Rs 1,67,000—The saving taken into account in the preceding paragraph includes the abolition of this Directorate.

34. *Medical Stores Depôts*—

	Rs.
1913-14, Actual Expenditure	3,28,000
1921-22, Budget Estimate	4,51,000
1922-23, Budget Estimate	5,94,000

The five Medical Stores Depôts situated at Bombay, Madras, Lahore, Calcutta and Rangoon are responsible for the supply of all medical stores and equipment to the Army. Their cost is borne on the Army estimates but they are administered by the Director-General, Indian Medical Service, as they also supply medical stores on payment to Civil Departments and to Local Governments. The rates charged by them to civil institutions are fixed at a figure intended to leave a small margin of profit and we are informed that this part of their operations does not throw any extra expenditure on the army.

The large reduction in stocks which we propose elsewhere (paragraph 64) should result in a substantial reduction in establishments, and we recommend that the total cost of the depôts should be limited to Rs. 5 lakhs, saving Rs 94,000.

35. *Veterinary Hospitals*—

	Rs.
1913-14, Actual Expenditure	4,26,000
1921-22, Budget Estimate	22,76,000
1922-23, Budget Estimate	26,99,000

There has been a large increase in establishment since 1913-14 due in part to the increase in the number of animals in charge of the Army Veterinary service. The organisation of the department was examined in detail by the Braithwaite Committee and we endorse their recommendations which will result in an annual saving of Rs. 3,92,000. Some further saving should result owing to the reduction of three British Cavalry Regiments.

In addition to the pay of establishments, the budget for 1922-23 includes provision for the following items:—

	Rs.
Forage	11,41,000
Drug, medicines, etc.	50,000
Provisions	2,40,000
Clothing	29,500

In paragraphs 59 *et seq.* we refer to the savings which should accrue under these heads: excluding these savings, we recommend that a reduction of Rs. 3,92,000 be effected in 1923-24.

36. *Remount depôts and breeding operations—*

	Rs.
1913-14, Actual Expenditure	27,23,000
1921-22, Budget Estimate	53,58,000
1922-23, Budget Estimate	66,12,000

In the estimates for 1923-24 the net expenditure is shown at Rs. 17,78,000 only, credit being taken for Rs. 43,34,000 representing expenditure on the depôts on maintaining animals issued. This amount is debited to the stock account where a further provision of Rs. 44,29,000 is included for the purchase of animals, the total cost of supplying animals to the Army thus amounting to Rs. 1,10,41,000. The Braithwaite Committee have in their Report made suggestions calculated to result in an annual saving of Rs. 16 lakhs in the first year and Rs. 13,21,000 in subsequent years, and we recommend that their proposals be adopted. A reduction in the reserve and in the number of annual replacements will result from the reduction of three British Cavalry Regiments recommended by us. We suggest that the possibility should be considered of further reducing the war reserve by the adoption of a system of registration in India of horses suitable for military purposes. We understand that additional economies will result from a modification of the percentage basis for the replacement of both camels and bullocks. Taking all these factors into consideration, we recommend that a reduction of Rs. 20 lakhs be made in the gross figure of Rs. 110 lakhs mentioned above.

In making this recommendation we have not taken into account expenditure on the following items:—

	Rs.
Forage	26,14,900
Issues in kind	4,51,000
Fuel and light	3,09,000

We deal elsewhere with these heads for the Army budget as a whole (see paragraphs 61 and 62).

37. *Central Mechanical Transport Store, Rs. 4,73,000.*—This Depôt deals with the provision, stocking, and issue of spare parts used for the repair of vehicles. In view of the large reductions which we have recommended in the use of mechanical transport we consider that the expenditure under this heading should be reduced to about Rs. 2,50,000 for 1923-24 and this saving is included in the reduction of Rs. 55 lakhs which we have previously recommended (see paragraph 23).

38. *Mechanical Transport Reserve Vehicles Park, Rs. 2,70,000, and Shipping Section, Rs. 14,000.*—We understand that the Commander-in-Chief has accepted the recommendations of the Braithwaite Committee that the Reserve Park and Shipping Section should be abolished and we have taken this into consideration in our recommendations under Mechanical Transport.

WORKING EXPENSES OF MANUFACTURING ESTABLISHMENTS.

	Rs.
1913-14, Actual Expenditure	2,44,631
1921-22, Budget Estimate	29,68,000
1922-23, Budget Estimate	25,83,250

39. The above figures represent net expenditure, the gross expenditure on these establishments having increased from Rs. 1,61,53,707 in 1913-14 to Rs. 4,14,75,250 in 1922-23, the details of which are shown in Appendix E. We recommend that accounts on a commercial basis be instituted for each of these establishments with a debit for interest on capital and for depreciation. We deal below with the more important establishments.

40. *Gross farms—*

	Rs.
1913-14, Actual Expenditure	44,77,000
1921-22, Budget Estimate	73,90,000
1922-23, Budget Estimate	1,06,30,000

These organisations both produce and purchase forage, and from figures supplied to us appear to be producing fodder more cheaply than it can be purchased. Provided that this condition continues, we do not recommend any change in present arrangements. The bulk of the expenditure under this heading is transferred to the stock account, and the saving which will accrue in 1923-24 is referred to in paragraph 61.

41. *Dairy farms—*

	Rs.
1913-14, Actual Expenditure	24,15,000
1921-22, Budget Estimate	68,39,000
1922-23, Budget Estimate	67,25,000

The operations of these farms expanded very considerably during the war and they are at present overburdened with buildings and plant in excess of the demands for their products. We are informed that their operations in 1921-22 showed a loss of some Rs. 6 lakhs, but that in the present year it is anticipated that they will make both ends meet without paying interest on their capital (Rs. 58,54,000), and that in 1923-24 revenue and expenditure will balance. Prices for the products of the farms have been recently raised but we recommend that the system of preferential rates at present in force should be reviewed.

We are informed that as a result of cattle-breeding undertaken at the Pusa Agricultural Institute a valuable herd of some 380 animals has been built up. It has been represented to us that it is desirable to take such steps as are possible to improve the breed of cattle in the country and to provide educational facilities in dairy farming, and that it would be advantageous in these respects as well as economical if the operations of the military and civil authorities were co-ordinated. We suggest therefore that the experiment should be made of placing one or more of the military dairy farms under the control of the civil authorities.

42. *Army Clothing Factories—*

	Gross Expenditure Rs.
1913-14, Actual Expenditure	28,72,248
1921-22, Budget Estimate	98,50,000
1922-23, Budget Estimate	84,43,250

Two depôts, *viz.*, at Madras and Shahjahanpore are maintained for the manufacture of garments and requirements in excess of the output of these factories are obtained from contractors. We are informed that the labour at the factories is carried out at contract rates and that the prices of the garments manufactured compares favourably with those at which purchases are made.

We observe that in 1913-14 the proportion of British to Indian employees at Army Clothing Factories and Depôts was 23 to 276 whereas at the present time the proportion is 73 to 442, we consider that the proportion of British personnel should be reduced to twelve per cent. of the total staff.

Of the total expenditure for 1922-23 Rs. 71,74,000 was for materials imported from England and purchased locally and considerable savings should be possible in 1923-24 owing to the fall in prices. These savings will, however, be largely set off by the loss of the so-called receipts under Army Clothing Factories in 1922-23, these including a special credit of Rs. 10,50,000 on account of the difference between the prices paid to the Disposals Commissioner for certain stores purchased from him and the vocabulary prices of these stores. The value of all finished garments manufactured at the factories is charged to the stock account, in dealing with which we take credit for anticipated savings in expenditure on Clothing (see paragraph 65).

43. *Army Ordnance Factories—*

	Gross expenditure Rs.
1913-14, Actual Expenditure	62,88,535
1921-22, Budget Estimate	1,70,78,000
1922-23, Budget Estimate	1,13,25,000

There has been no increase in the number of Ordnance factories since 1913-14 except that the Ishapore branch of the Gun and Shell Factory has been formed into an independent factory called the Metal and Steel Factory.

We are much impressed with the large expenditure which is being incurred at these factories in spite of the fact that there are over Rs. 14 crores worth of Ordnance Stores in stock. We appreciate that it is necessary to retain a nucleus staff at each factory to enable the output to be rapidly expanded in the event of war, but in view of the large expenditure now being incurred we are not satisfied that the staff has yet been reduced to this minimum.

We consider that the orders given to all Ordnance factories should be limited to the essential requirements of the Army and that, if these orders are insufficient to employ fully the nucleus staff which must be retained, endeavour should be made to obtain orders from other Government Departments for such articles as can be manufactured at economic prices. We consider, however, that, in the interests of private enterprise, the factories should be discouraged from obtaining orders from outside sources.

We are informed that the estimated saving from the closing of the Dum Dum Ammunition Factory which is being sold is Rs. 12 lakhs, but as the whole cost of working the factories is included in the cost of the articles produced, which is debited to the stock account, all savings effected owing to fall in prices or reduction of output will be more appropriately dealt with under that heading (see paragraph 66).

44. Base Mechanical Transport Workshops—

	Gross expenditure.
	Rs.
1913-14, Actual Expenditure	Nil.
1921-22, Budget Estimate	29,68,000
1922-23, Budget Estimate	32,53,000

This expenditure covers the cost of the workshops at Chaklala, Peshawar, Bannu and Bombay. We understand the shops at Chaklala have been built on a lavish scale with the idea that the whole of the major repairs would be carried out at this factory. The equipment and machinery are, however, said to be unsuitable in many instances for the work required and, in view of the large reductions which we recommend in the use of Mechanical Transport, we consider that the possibility of using these workshops for some other purpose should be explored and that only a small repairing shop should be maintained at Chaklala for the repair of vehicles in the neighbouring district.

We think that endeavour should be made to come to a favourable arrangement with the commercial concerns supplying the standard types of vehicles adopted by the Army to undertake complete overhauls in India of their own vehicles which we think would form a valuable reserve capacity for repairs in war.

We consider that 300 of the British civilian artificers now employed at Chaklala, costing Rs. 13 lakhs annually, whose services we understand it is proposed to dispense with, should not be replaced and we recommend that the provision for workshops in 1923-24 should be limited to Rs. 15,00,000, a reduction of Rs. 17,53,000 which we have taken into account in the estimated saving of Rs. 55,00,000 already recommended (see paragraph 23).

MILITARY ACCOUNTS.

	Rs.
1913-14, Actual Expenditure	30,10,000
1921-22, Revised Estimate	79,58,000
1922-23, Budget Estimate	85,69,000*

*Excluding Rs. 5,10,000 on account of cost accounting staff in Ordnance Factories.

45. The work of the Military Accounts offices was greatly dislocated by the war, and they are still dealing with the arrears of work which accumulated during and after the war. They have been further embarrassed by the recent

introduction of the cost accounting scheme for the Army, and various defects in their administration have been brought to our notice. It is essential for the proper control of expenditure that these establishments should be maintained in a state of efficiency and, apart from the question of pay of the establishment which we deal with in another section of our report, we are unable to recommend any immediate reduction, as, if our recommendations are adopted, heavy work will be thrown upon the Accounts offices during the transition period. We consider, however, that all possible steps be taken to increase their efficiency and that as soon as the position with regard to military expenditure has been stabilised the establishments and organisation of these offices be reviewed and substantial economy effected.

ECCLESIASTICAL ESTABLISHMENTS.

	Rs.
1913-14, Actual Expenditure	4,61,000
1921-22, Revised Estimate	6,22,000
1922-23, Budget Estimate	7,70,000

46. The above figures represent the cost of spiritual ministrations by denominations other than the Church of England. Of the increase of Rs. 3,09,000 since 1913-14 Rs. 1,89,000 is due to the improvement of the status and emoluments of religious teachers with Indian fighting units.

We are informed that there has been a decrease in the number of British troops in India of the Roman Catholic denomination and we recommend that the number of chaplains of that denomination should be reduced to the essential minimum and all other Roman Catholic clergymen ministering to troops placed on a capitation basis, which it is anticipated will result in a saving of Rs. 1,50,000.

Soldiers belonging to the Church of England are ministered to by chaplains of the Indian Ecclesiastical Establishment the cost of which is borne on the civil estimates. We understand that a proposal is now under consideration for the formation of an Army Chaplains Department the charges for which would be met from the Army budget. We recommend that an early decision should be arrived at on this proposal, and that if it is proceeded with no additional expenditure should be involved.

ADMINISTRATION OF CANTONMENTS.

	Rs.
1913-14, Actual Expenditure	13,20,000*
1921-22, Revised Estimate	18,38,000
1922-23, Budget Estimate	18,24,000

*Excluding special expenditure of Rs. 10,93,000 on the New Cantonment, Delhi.

47. There has been no change in the pre-war arrangements regarding the administration of cantonments, the rise in expenditure being due partly to increases in the pay of the staff and partly to increased contributions by Government to cantonment funds, a result of the increased expenditure caused by the rise in prices. Prices have now fallen and we recommend that a reduction of Rs. 30,000 be made under this head.

RECRUITING STAFF.

	Rs.
1913-14, Actual Expenditure	1,67,000
1921-22, Budget Estimate	2,10,000
1922-23, Budget Estimate	3,06,000

48. The recruiting staff, which before the war consisted of 9 British Officers and 14 Assistant recruiting officers, has been increased to 10 British Officers and 216 other ranks including 176 permanent recruiters and 40 clerks. If our

proposals for a reduction in the establishment of Indian Troops and an increase in their term of service be adopted, there will be a substantial reduction in the annual number of recruits required and a considerable curtailment of the recruiting agency should be feasible. There have, however, been substantial recoveries from the British Government in the last two years for work carried out on their behalf which is not expected to continue. We recommend that the provision under this head be reduced by Rs. 20,000.

HILL SANITARIA AND DEPÔTS.

	Rs.
1913-14, Actual Expenditure	2,31,000
1921-22, Budget Estimate	3,54,000
1922-23, Budget Estimate	3,62,000

49. No change has been made in the pre-war arrangements for the maintenance of a certain number of Sanitaria for British troops, but one additional sanitarium has been opened. We understand, however, that it is proposed to lower the minimum age at which a British soldier comes out to India with the object *inter alia* of reducing the capitation payments to the War Office in regard to British troops. We do not accordingly recommend any reduction in the expenditure under this head.

EXPENDITURE IN ENGLAND ON THE STANDING ARMY.

	£
1913-14, Actual Expenditure	1,442,000
1921-22, Revised Estimate	4,428,000
1922-23, Budget Estimate	4,287,000

50 The more important items included under this heading are the following:—

Payments to the War Office in respect of British troops serving in India (£1,788,000).—These payments are based on a capitation rate for each officer and man on the authorised British establishment, the rate having reference to an actuarial calculation of the number of recruits required annually to keep up the Indian establishment of British troops and to the cost of raising, training and equipping the annual drafts and reliefs. The rate last came under regular revision in 1908 when, as the result of a compromise between the Secretary of State for India (Lord Morley) and the Secretary of State for War (Lord Haldane), the then existing capitation rate of £7-10-0 was raised to £11-8-0. In 1920 the War Office represented that in view of the rise in the rates of pay and prices this rate was no longer adequate and we are informed that, pending a definite revision of the arrangements which is now under examination, payments from 1920-21 onwards have been made on a provisional basis, namely in 1920-21 and 1921-22 at the rate of £28-10-0 and in 1922-23 at the rate of £25-13-0 per head, on the average estimated strength of British troops in India in these years.

We understand that for 1923-24 the provisional rate has been reduced to £25 and this will effect a saving of approximately £44,000 in addition to that resulting from the reduction in establishment which we have recommended.

The settlement of 1908 was in the nature of a compromise and it is not possible to split up the total charge into the various components entering into the cost. We recommend that the conclusion of a fresh regular settlement should be expedited and suggest that the most equitable arrangement will be to base the payment on the number of troops sent out and the cost of training them, to fix a separate rate for the technical services, and to allocate the cost to the War Office of training recruits between the India Office and the War Office *pro rata* to the normal colour service in each country, subject to a due allowance for the potential value to the British Government of returned men available for the reserve.

51. *Furlough allowances of officers of the Indian Services (£935,000).*—We understand that the most recent information indicates that the budget provision was too high by at least £346,000 and there will therefore be a reduction in 1923-24 of this amount in addition to savings due to reduction in establishment.

52. *Payments to or by the War Office on account of stores taken to or from India by British troops, and their clothing.*—The budget for 1922-23 included provision for a net payment to the War Office of £93,000 compared with £18,000 in 1913-14. The War Office is credited with the value of equipment and stores taken to India by British troops sent to that country and is debited with the value of the equipment and stores sent back with returning troops. We are informed that the heavy provision in the budget for 1922-23 is due to the assumption that a large shortage in the authorised establishment of British troops would be made good in the course of the year. Normally the net expenditure on this account should be small, and, with a reduction in establishment, this net debit should disappear in 1923-24 saving £93,000.

53. *Exchange concession in respect of Mesopotamia (£250,000).*—This item is non recurring and there will be an automatic saving of this amount.

54. *Unemployment insurance of British troops (£95,000).*—The British soldier serving in India cannot be refused concessions on a scale equivalent to those granted in England.

55. We consider that as India is the largest employer of British troops, outside the United Kingdom, prospective changes in the administration of those troops which involve large expenditure should in every case be fully discussed with the Government of India before being put into effect, and that they should, at least, be given full opportunity of examining all such proposals in their relation to India.

56. *Summary.*—The total of the reductions indicated is £733,000, or a saving of Rs. 1,09,95,000 in 1923-24.

STOCK ACCOUNT.

	Net credits.
	Rs.
1913-14, Actuals	4,46,000
1921-22, Revised Estimate	2,64,72,000
1922-23, Budget Estimate	60,03,000

57. These figures represent the balance of transactions in stores of all descriptions, expenditure on purchase and additions by manufacture or transfer to the account being treated as debits, and issues to units or establishments, and reductions by transfer being treated as credits. It must be noted also that sterling transactions are converted into rupees at Rs. 10 = £1. The gross transactions may be summarised as follows on the basis of Rs. 15 = £1:—

	Budget estimate, 1922-23.
	Rs.
Arrear payments	73,50,000
Cost of stores purchased	12,90,24,000
Share of cost of supply organisations, representing overhead charges	98,74,000
Total expenditure	14,62,48,000
Expenditure excluding arrear payments	13,88,98,000
Issues	14,81,42,000

The expenditure includes two large arrear payments of £410,000 and £80,000 on account of ordnance and mechanical transport equipment respectively indentured for in previous years, or Rs. 73,50,000 in all, and there should be an equivalent saving in 1923-24.

58. Excluding this item, purchases and issues of stores under the various heads, as contemplated in the budget for 1922-23, are shown in the table below :—

Stock account, Budget, 1922-23.

	Total stocks held on 1st April 1922.	Additions by purchase or manufacture including all overhead charges.	Issues.	Loss by fluctuation in prices, etc.	Additions to stock.	Reduction of stock.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Provisions	1,51,00,000	4,03,89,000	4,56,50,000	22,33,000	..	75,29,000
Forage	61,97,000	2,72,87,000	2,71,17,000	3,00,000	..	1,30,000
Fuel and light	11,61,000	46,38,000	46,58,000	..	..	20,000
Petrol and lubricants	18,53,000	49,80,000	49,89,000	..	..	..
Miscellaneous stores	4,25,000	14,45,000	14,20,000	17,000	..	..
Medicines and surgical imple- ments	1,05,63,000	85,90,000	40,71,000	6,20,000	..	11,01,000
Clothing	1,31,17,000	1,77,55,000	2,53,74,000	3,50,000	..	59,19,000
Ordances	14,00,000*	2,41,42,000	2,34,42,000	20,00,000	..	14,00,000
Mechanical transport	85,00,000†	58,00,000	40,00,000‡	15,00,000	..	..
Animals . . . . .	..	92,68,000	94,28,000	35,000	..	2,00,000
TOTAL	20,14,71,000‡	13,88,98,000	14,81,42,000	70,55,000	..	1,62,99,000

* Total on 31st December 1922

† Approximate, excluding vehicles.

‡ Total, excluding vehicles and animals

§ In the Budget, 1922-23, a portion of the issues for consumption was not allocated to units and establishments but remained at debit of the stock account

|| Includes Rs 4 lakhs for replacement of vehicles which were not allocated to units in the Budget for 1922-23 and remained at debit of the Stock Account.

It will be seen that large reductions were proposed in 1922-23, mainly under provisions and clothing. To this extent the Army was during the year living on its existing stocks of stores, and its real cost during the year was to the same extent understated in the estimates. At the same time, we consider that, in view of the magnitude of the total stocks held, it should be possible materially to restrict purchases in 1923-24 under a large number of the heads, as we have pointed out in dealing with the relevant sections of the estimates. We examine below the savings which it should in our opinion be possible to effect by reduction in stocks and otherwise.—

59. *Provisions.*—The estimated cost of provisions issued to the fighting and administrative services in 1922-23 without making allowance for the anticipated reduction in stocks during the year was Rs. 4,00,03,000. There are four main ways in which a reduction can be effected :—

- (i) Reduction in establishment.
- (ii) Reduction in stocks held.
- (iii) Fall in prices.
- (iv) Changes in rations, etc.

We have already taken into account the savings which will result from the reduction in establishment which we have proposed. A substantial reduction in stocks is being effected in 1922-23, but we consider that they can safely be drawn on during 1923-24 to the extent of a further Rs. 35 lakhs if our recommendations about reductions in troops are accepted. In 1922-23, as a result of the fall in prices which has taken place during the year, a saving of Rs. 15 lakhs is anticipated in addition to a lump allowance made on this account in the budget; and on the basis of present prices we consider that a reduction of Rs. 35 lakhs can be assumed in 1923-24 compared with the estimates for 1922-23. On the other hand, an allowance of Rs. 10 lakhs is said to be necessary for losses in storage and transit. The Budget for 1922-23 made no provision for these losses; but some loss is inevitable with transactions of the magnitude mentioned above, and we are informed that the actual loss in 1922-23 will not be less than Rs. 10 lakhs. The resultant saving will thus amount to Rs. 35 lakhs non-recurring and Rs. 25 lakhs a year recurring.

60. *Ration allowances.*—We are informed that the British soldier at present draw a messing allowance of $6\frac{1}{2}$ annas per diem on the basis of an allowance of $6\frac{1}{2}d$. formerly drawn by him when in England, and that the military authorities propose to reduce the allowance to $3\frac{1}{2}$ annas per diem, the English allowance having been reduced to $3\frac{1}{2}d$ per diem. This will effect a saving of Rs. 37 lakhs on the reduced establishment.

61. *Feed of Animals*—Substantial economies have been secured on the estimates for 1922-23 as a result of the fall in prices and the reduction of ration scales, the estimated saving being Rs. 41 lakhs in 1923-24. We doubt whether this estimate takes sufficient account of the fall in prices which has occurred, and we recommend that the saving under this head be increased to Rs. 50 lakhs, apart from the saving due to the reduction of 3 British Cavalry Regiments, and the reduction in the war reserve of horses which we have taken into account elsewhere.

We consider also that with the reduction in the strength of troops recommended by us it should be possible to reduce stocks by Rs. 10 lakhs. If allowance be made for a loss in storage and transit of Rs. 5 lakhs for which no provision was made in the Budget, the net saving will be Rs. 45 lakhs a year recurring and Rs. 10 lakhs non-recurring.

62. *Fuel and light*—There has been no marked fall in prices and we have no recommendation to make about reduction in the cost of issues apart from reduction in strengths of fighting troops, or about reduction in stocks. The reduction in issues which will result from a reduction in the strength of troops has been taken into account by us elsewhere.

63. *Petrol and lubricants*—There has been no marked fall in prices and we assume no reduction in the cost of issues. We consider, however, that, with the proposed rationing of petrol and limitation of mileage to be run by vehicles in times of peace, it should be possible to reduce stocks by Rs. 5 lakhs.

64. *Medicines and Surgical instruments.*—We have been supplied with the following figures for the operations of the Medical Store Depôts in 1921-22:—

	Rs
Value of stores qrt 1st April 1921	1,50,91,000
Purchases during year	42,70,000
TOTAL	1,93,61,000
Issues to military departments	25,64,000
Issues to civil departments	27,73,000
Transferred to Disposals Commissioner	33,13,000
Miscellaneous	1,33,000
* Value of stock held on 31st March 1922	1,05,63,000
TOTAL	1,93,61,000

The stores transferred to the Disposals Commissioner represented stores acquired and held for the Imperial Government during the war and subsequently disposed of on their behalf, the Indian Government being credited with their cost. The item 'Miscellaneous' includes certain further stores in the same category similarly disposed of, but whose value is still under adjustment.

We are informed that the Department was formerly allowed to keep 3 years' stocks of imported stores, though, in practice, only 2 years' stocks were held. This practice was modified in September 1921 when rules were issued providing for the maintenance of 6 months' supply of imported stores and 3 months' supply of local stores and for the despatch of 2 Home indents a year instead of one. Arrangements have now been made with the High Commissioner under which he is furnished with a list of various scales of mobilization requirements for which orders can be placed by telegram when necessary. The budget for 1922-23 provided for a purchase of Rs. 35,90,000 against an estimated issue of Rs. 46,91,000, involving a reduction of about Rs. 11 lakhs in the total stocks held. We consider, however, that the stores held are excessive in relation to the annual issue and that early

steps should be taken to reduce the stocks to the level authorised by the orders passed in 1921. We are informed that the estimated new purchases of stores in 1923-24 amount to Rs. 35,15,000, of which Rs. 21,35,000 represents purchases in India and Rs. 13,75,000 purchases in the United Kingdom. We have scrutinised a recent indent and, having regard to the magnitude of the stocks held and the reduced demands from the army, we recommend that the budget for new purchases be curtailed by Rs. 10 lakhs, that a complete review be made of all articles held, and that, apart from the mobilization reserve of Rs. 4 lakhs, any stocks in excess of eighteen months' supply of articles not in common use or liable to deterioration be sold.

65. *Clothing*.—We are informed that an increase of 25 per cent. in the authorised periods of wear of clothing is estimated to produce an annual saving of approximately Rs. 23 lakhs. We recommend that the possibility of effecting this and other economies be further examined and the clothing and kit allowances reviewed. Making allowance for savings in the above direction and for reduction of Rs. 30 lakhs in existing stocks, we recommend that a total saving of Rs. 53 lakhs be effected under this head in 1923-24.

66. *Ordnance*.—We have ascertained that the total Ordnance Stores held on the 31st December 1922 was as follows:—

	Book value. Rs.
Working Stock	3,50,00,000
Surplus Stores	4,00,00,000
War Reserves	6,50,00,000
	14,00,00,000

The Quartermaster General has represented that, of the Rs. 3½ crores of Working Stock, only Rs. 1¼ crores represent stocks that are fluid, that is, stocks required for issue to the Army which are worn out and never return. The balance of Rs. 2 crores represents stores which are issued temporarily to units and are returned when no longer required, such as tents, the value of which is about a crore.

Of the Surplus Stores about Rs. 3¼ crores consist of rifles, Lewis guns, bayonets, army carts, etc. We are informed that about Rs. 50,00,000 worth of surplus stores are about to be sold and it is anticipated that they will only realise about Rs. 9,00,000. We observe that, although enormous stocks of Ordnance Stores are being held, provision for the purchase of Rs. 2,40,42,000 of stores was made in the 1922-23 budget or Rs. 6 lakhs more than the estimated value of the issues. It is evident therefore that there is little prospect of the surplus stores being utilised for some considerable time and meanwhile considerable expenditure is being incurred on storage, maintenance and reconditioning of stores in addition to the loss of interest on capital.

With regard to the stocks of war reserves we consider a reduction of 50 per cent. could be effected. In our opinion the country simply cannot afford to keep anything like Rs. 14 crores locked up in Ordnance Stores, the interest charges on which would alone amount to about Rs. 84 lakhs and the total cost would certainly be not less than Rs. 1 crore per annum.

We have already suggested that the total stores held should be reduced to Rs. 8 crores, and recommend that expenditure in 1923-24 should be limited to Rs. 130 lakhs after allowing Rs. 10 lakhs for the fall in prices, a reduction of Rs. 1,00,42,000, and that, if any balance is required for consumption, this should be obtained by reduction of stocks or from the proceeds of sales of surplus stores.

67. *Mechanical Transport*.—We have ascertained that the value of the stock of solid tyres on hand on the 31st March 1922 was Rs. 10,70,000 representing 2½ years' supply on the basis of the previous year's requirements. The value of the stock of pneumatic tyres was Rs. 12,13,000 or just under one year's supply. The total value of the stock of spare parts on hand in March 31st, 1922, was approximately Rs. 69,00,000.

We are of the opinion that it should be possible to meet requirements for tyres and spare parts in 1923-24 by consuming existing stocks or alternatively

from the proceeds of sale of spare parts not required. In our opinion the grant for the purchase of these articles in 1923-24 should be reduced by Rs. 15 lakhs and corresponding reduction made in stocks.

The budget estimate for 1922-23 included £40,000 or Rs. 6,00,000 for the purchase of new vehicles to replace normal wastage. As we have allowed full provision for this purpose in dealing with Mechanical Transport as a whole there will be a further reduction of Rs. 6,00,000 in the total expenditure on Mechanical Transport.

68. *Animals*.—We are informed that no purchase of camels will be required in 1923-24, saving Rs. 3,33,000, and, if the proposals we have made about reduction in strength of fighting troops are accepted, it should, in our opinion, be possible to reduce the purchase of animals by Rs. 10,00,000 by making an equivalent reduction in the number of animals in the Remount Depôts.

69. Against a total saving of Rs. 3,51,42,000 which we have indicated in paragraphs 58 to 67 inclusive it must be borne in mind that the budget for 1922-23 assumed a saving of Rs. 1,62,99,000 by reduction in stocks during the current year. The *net* saving compared with the 1922-23 estimate is therefore Rs. 1,88,43,000.

SPECIAL SERVICES.

	Rs.
1913-14, Actual Expenditure	34,95,000
1921-22, Revised Estimate	8,17,81,000
1922-23, Budget Estimate	1,98,24,000

70. The main item included under this heading is Rs. 173 lakhs for Waziristan occupation and operations. We are informed that the provision in the military estimates for 1923-24 on this account, excluding military works and political expenditure, will be limited to Rs. 19,50,000 a reduction of Rs. 1,53,50,000.

This head also includes Rs. 20 lakhs in respect of troops at Aden. The position is that the cost of troops employed at Aden is borne by the Indian Government except—

- (a) a contribution, as before the war, of £100,000 per annum from the British Government, and,
- (b) a moiety of the cost of troops maintained in excess of the pre-war strength paid by His Majesty's Government.

The only important variation in the pre-war garrison is the addition of a local regiment of infantry, and owing to reduction in personnel and the fall in prices, it is now estimated that India's share of this addition to the pre-war force in 1922-23 will not exceed Rs. 10 lakhs. On the other hand we are informed that the charges of the pre-war garrison will exceed the Budget provision by Rs. 10 lakhs owing to a miscalculation of the Budget grant. We recommend that the garrison at Aden should now be reduced to the pre-war strength, representing a saving of Rs. 10 lakhs on the estimates for 1922-23.

There will be further savings under this head in 1923-24 of Rs. 3,40,000 representing arrear adjustments to be made in 1922-23 for the Afghan War and the Great War, or a total saving of Rs. 1,66,90,000 compared with the budget of 1922-23.

MISCELLANEOUS RECEIPTS AND CHARGES.

This heading of the estimates includes transport of troops and carriage of stores, which we have already dealt with under Transport charges, and sundry fluctuating charges referred to below :—

71. *Miscellaneous*—

	Net receipts Rs.	Net expenditure Rs.
1913-14, Actual Expenditure . . . .	...	4,33,000
1921-22, Budget Estimate . . . .	...	34,10,500
1922-23, Budget Estimate	68,57,000	...

The budget for 1922-23 includes casual receipts of £395,000 from the War Office in settlement of certain war liabilities and of Rs. 33 lakhs from the sale of surplus ordnance stores in India. On the other side are included some items of miscellaneous expenditure in England, which would have been shown under other heads of account but for the late date on which the intimation was received, and expenditure of Rs. 10,60,000 in India representing mainly (1) the value of stores issued by the Army to other departments in respect of which no charge is, under the existing arrangements, made by the former to the latter and which must consequently be charged against the Army account, and (2) miscellaneous losses and compensation payable to individuals for losses.

The receipt of Rs. 59,25,000 in England is of a non-recurring character. In regard to the casual receipt of Rs. 33 lakhs in India from sale of surplus ordnance stores, the acceptance of our recommendations will lead to the disposal of further surpluses; but we have taken credit for the sale-proceeds in other sections of this report and we cannot take credit for them again here. Omitting the two special items of receipt, the net expenditure in 1922-23 amounts to Rs. 23,68,000. We recommend that where stores are issued by the Army to other departments, a debit should be raised against the department concerned; and that the grant for net expenditure under Miscellaneous should be reduced to Rs. 20,00,000. The net receipt of Rs. 68,57,000 in 1922-23 will then give place to a net expenditure of Rs. 20,00,000 in 1923-24.

72. Provision for New Measures and unallotted reserve with the Government of India—

A sum of Rs. 22,13,000 was included on this account in the 1922-23 budget, besides an unallotted reserve of Rs. 22 lakhs, which was spent on the Air Force. Of the former sum, about one-half represents recurring expenditure. In future years we understand this will be shown under the appropriate heads; the balance was really intended to form an instalment of the outlay required to complete the equipment of the Army up to authorised scales and should not have been included in the provision for *new* measures. We recognise the importance of completing the equipment of the Army up to the authorised scales, particularly if our recommendations about reductions in strengths of troops are accepted. We understand that the Government of India propose to allot Rs. 30 lakhs for completion of equipment in their Military Budget for 1923-24. We recommend, however, that no provision for an unallotted reserve should be included in future budgets.

The resultant saving as compared with the budget for 1922-23 will be Rs. 3,00,000.

NON-EFFECTIVE CHARGES.

	Rs.
1913-14, Actual Expenditure	4,68,51,000
1921-22, Revised Estimate	6,15,30,000
1922-23, Budget Estimate	8,96,79,000

73. The bulk of the expenditure under this head represents pensions. We are informed that India's share in the retired pay of British Officers and Other Ranks who have left the service during the last few years has been assessed on estimates prepared by the War Office, apparently on the basis of pre-war experience. We recommend that the pre-war arrangement be reverted to, under which a settlement was arrived at for each individual on retirement on the basis of his expectation of life.

74. A provision of £350,000 was also included in the 1922-23 budget for gratuities to surplus officers under demobilisation. It is estimated that the measure for the retirement of surplus officers will involve further expenditure of £3 million during the next 3 years for the allowances and balance of gratuity payable to the demobilised officers and that India's share of this expenditure in 1923-24 will be £415,000, an increase of £65,000 or Rs. 9,75,000. We understand that in future this charge will be transferred from the non-effective account to the head "Special Services".

We recognise that the reductions in strengths of troops and administrative services recommended by us will involve a considerable amount of terminal charges and a temporary addition to the non-effective charges. We are unable to furnish any reliable estimate of either class of expenditure, which we have not taken into account in our financial calculations.

AUXILIARY AND TERRITORIAL FORCES.

	Rs.
1913-14, Actual Expenditure	32,84,000
1921-22, Revised Estimate	73,25,000
1922-23, Budget Estimate	1,18,86,000

75. The expenditure in 1922-23 is subdivided as follows :—

	Rs.
Staff at Army Headquarters	78,000
Staff at Headquarters of Commands	1,23,000
Staff at Headquarters of Districts	99,000
Auxiliary Force	75,86,000
Territorial Force	40,00,000
	1,18,86,000

It was originally contemplated that the Territorial Force should be a second line for the Indian Army, and that it should form a reserve in case of war. The present liability of the force is to serve anywhere, and to perform any duties required of it, including internal security. We are informed, however, that it will be five years before an opinion can be formed of the value of the force, which has not yet done its first training. We are informed that the cost of the units of the Territorial force which are under formation, or whose formation has been sanctioned, will amount to about Rs. 30 lakhs in 1923-24, and, taking into account some savings in headquarters and other staff, we recommend that the budget for 1923-24 be fixed at Rs. 1,08,00,000, a saving of Rs. 10,86,000.

CONCLUSIONS.

Having reviewed the expenditure of the Army we recommend that :—

- (1) the reductions which we have indicated be effected in the strength of the fighting services, saving Rs. 303 lakhs per annum ;
- (2) steps be taken to organise an effective reserve and so enable the peace strength of Indian battalions to be reduced to 20 per cent. below the war establishment, saving Rs. 63 lakhs net per annum ;
- (3) the necessity for retaining the present system of four Commands be reviewed in 12 months' time, and that in the meantime the number of districts be reduced as far as possible ;
- (4) the authorised establishment of motor vehicles, including reserves, be limited to 1,600, the number of vehicles in use and mileage run be strictly limited, and a system of rationing petrol be introduced ;
- (5) the supply services be reorganised on a less expensive basis, and the stocks held at depots reduced ;
- (6) commercial accounts be kept for all manufacturing establishments and for the Remount department ;
- (7) the basis of the capitation rate for British troops, now under revision, be determined in the manner indicated in our report ;

- (8) the Government of India be given a full opportunity of reviewing any proposed changes in the administration of British troops involving large expenditure before such changes are brought into operation ;
- (9) stocks of stores generally be largely curtailed, and stocks of Ordnance stores including reserves be reduced from Rs. 14 crores to Rs. 8 crores, all surplus Ordnance stores being disposed of ; and
- (10) the budget estimate for 1923-24 be limited to Rs. 51,47,00,000, a reduction of Rs. 8,95,30,000 compared with the budget estimates for 1922-23, subject to such adjustment as may be necessary on account of the delay which must ensue in carrying out the proposed changes.

APPENDIX A.

ARMY EXPENDITURE,

(Excluding Military Works, Royal Indian Marine and Royal Air Force.)

	1922-23 (BUDGET ESTIMATES),			1918-14.
	Expenditure	Receipts.	Net expenditure	(ACTUALS)
	Rs.	Rs.	Rs.	Rs.
I Standing Army—				
(1) Fighting services in India proper and Burma.	28,06,08,000	15,000	28,05,93,000	14,50,14,000
(2) Administrative services	3,68,29,000	5,20,000	3,61,09,000	1,28,74,000
(3) Miscellaneous units and expenditure	15,97,000		15,97,000	6,86,000
(4) Expenditure in England	6,43,15,000	17,65,000	6,25,50,000	2,16,30,000
(5) Forces in Aden	84,98,000	15,00,000	19,93,000	3,84,000
(6) Forces in South and East Persia	3,75,000		3,75,000	
(7) Forces serving in the Colonies	11,73,000	12,60,000	-87,000	-2,18,000
Total of I	36,81,90,000	50,60,000	36,31,30,000	18,04,70,000
II—Cost of Educational, etc., establishments, working expenses of Hospitals, Depots, etc.—				
(1) Educational and Instructional establishment.	1,09,97,000	..	1,09,97,000	52,97,000
(2) Army Education	37,92,000	37,000	37,55,000	11,71,000
(3) Working expenses of hospitals	3,24,75,000	1,80,000	3,22,95,000	79,99,000
(4) Working expenses of depots	1,57,86,000	36,73,000	1,21,13,000	41,34,000
(5) Working expenses of manufacturing establishments	1,16,58,000	90,75,000	25,83,000	2,45,000
(6) Inspection of stores	10,75,000	..	10,75,000	4,07,000
(7) Military Accounts Offices	85,89,000	..	85,89,000	30,10,000
(8) Ecclesiastical establishments	7,70,000	..	7,70,000	4,61,000
(9) Administration of Cantonments	18,50,000	26,000	18,24,000	24,13,000
(10) Miscellaneous	9,36,000	..	9,36,000	3,95,000
Total	8,70,28,000	1,30,21,000	7,40,07,000	2,55,35,000
*Add for exchange at Rs. 15 = £1	37,62,000	..	37,62,000	5,19,000
Total of II	9,16,90,000	1,30,21,000	7,86,89,000	2,60,54,000
III—Army Headquarters, Staff of Commands, etc.—				
(1) Army Headquarters	61,90,000	..	61,90,000	28,56,000
(2) Staff of Commands	30,14,000	..	30,14,000	4,37,000
(3) Staff of Districts and Brigades	93,04,000	..	93,04,000	55,55,000
(4) Embarkation Staff	1,68,000	..	1,68,000	..
(5) Railway Transport Staff	4,86,000	..	4,86,000	13,000
(6) Miscellaneous	4,76,000	..	4,76,000	3,09,000
Total of III	1,96,28,000	..	1,96,28,000	92,50,000
Deduct recoveries from His Majesty's Government on account of part of A.B.C.	-13,20,000	..	-13,20,000	..
Total of III	1,83,08,000	..	1,83,08,000	92,50,000
IV.—Stock account†	2,48,42,000	2,36,40,000	12,02,000	27,00,000
V.—Special Services	1,98,64,000	40,000	1,98,24,000	34,95,000
VI—Miscellaneous charges and receipts—				
(1) Indian Troop Service	1,33,86,000	19,50,000	1,19,36,000	29,03,000
(2) Carriage of troops and stores in India.	1,20,50,000	..	1,20,50,000	..
(3) Miscellaneous	27,55,000	96,22,000	95,96,000	36,83,000
(4) Provision for new measures	22,13,000	..	22,13,000	..
(5) Reserve with Government	2,20,00,000	..	2,20,00,000	..
Total of VI	3,31,04,000	1,16,72,000	2,15,32,000	65,71,000
VII—Non-effective charges	9,28,97,000	32,18,000	8,90,79,000	4,83,51,000
VIII—Territorial and auxiliary forces	1,18,86,000	..	1,18,86,000	32,34,000
GRAND TOTAL	66,07,81,000	5,65,51,000	60,42,30,000	27,87,45,000

* Expenditure in England on stores included in the above statement has been converted at Rs. 10=£1. We have not been able to obtain information as to the distribution of this expenditure over the various items and it has therefore been necessary to make a lump addition representing the difference between the rupee equivalent of the sterling expenditure at the rate of Rs 10 = £1 and at the rate of Rs 15 = £1

† The figures given in the budget for 1922-23 for total expenditure and net expenditure are Rs. 1,76,37,000 and a minus figure of Rs. 60,03,000, respectively, the latter figure being a credit representing a portion of the reduction of stocks. The figure for gross expenditure includes expenditure on stores in England amounting to £752,400 converted at Rs. 10 = £1 whereas in this statement it is converted at Rs. 15 = £1.

APPENDIX B.

Analysis of the authorized establishment of Fighting and Administrative services, exclusive of Aden, Persia and the Colonies and of reservists and Auxiliary and Territorial Forces, on 1st April 1914 and 1st April 1922.

	1914.					1922				
	British Troops.	Indian Troops.	Civilians.	Followers.	TOTAL	British Troops	Indian Troops	Civilians.	Followers.*	TOTAL
I.—Fighting Services, Army—										
Cavalry	6,169	24,156	..	3,127	33,472	5,084	10,982	..	6,510	22,566
Infantry and Pioneers	54,465	115,056	..	5,657	175,178	43,335	108,567	..	9,447	166,349
Artillery	15,205	10,139	..	10,695	36,039	11,446	13,902	..	2,781	28,129
Sappers and Miners	193	4,734	..	207	5,139	350	7,375	..	667	8,392
Signals	207	352	..	57	616	2,196	3,311	..	757	8,264
Tank Corps . . . . .	..	..	..	..	..	1,265	..	..	336	1,601
Total	76,244	154,437	..	19,763	250,444	68,686	144,617	..	20,498	233,801
Air Force										
	..	..	..	..	..	1,359	2	34	1,193	3,143
II.—Administrative Services—										
Supply and Transport Corps	705	1,221	665	21,988	24,579	1,901	14,193	1,645	15,575	33,314
Training Establishments	111	10	18	241	380	249	103	22	432	305
Army Education	183	1	121	4	309	531	653	158	295	1,637
Hospitals	1,039	663	313	8,159	10,174	1,897	7,287	45	5,523	14,752
Arsenals, etc	411	1	443	1,658	2,513	969	1,424	550	371	3,314
Medical Store Depôts	14	7	91	436	548	13	7	92	404	576
Veterinary	73	..	17	1	91	60	1,612	64	121	1,857
Remounts	59	8	..	5,006	5,073	50	232	68	4,570	4,920
Military Farms	99	..	256	26	331	107	..	403	36	551
Ordnance Factories and Inspections	195	3	634	211	1,043	160	..	925	170	1,255
Military Accounts Department	43	..	1,948	372	2,363	27	..	3,823	815	4,665
Ecclesiastical Establishment . . . . .	..	..	97	..	97	..	..	592	..	592
Cantonment Magistrates	43	3	490	..	541	49	3	473	..	525
Recruiting Staff	9	..	..	14	23	10	216	..	..	226
Hill Sanitaris and Depôts	32	..	..	657	689	41	..	..	677	718
Staffs at —										
Army Headquarters	83	..	335	197	615	153	..	729	310	1,192
Commands	24	2	10	24	60	209	4	92	95	400
Districts and Brigades	583	2	37	313	920	549	..	293	270	1,112
Miscellaneous	57	5	..	..	62	124	4	28	..	156
Miscellaneous units	5	287	2	210	504	39	200	..	74	313
Unemployed and unattached list of officers	93	..	..	..	93	68	..	..	..	68
Total	3,846	2,213	5,477	39,522	51,058	7,206	25,938	10,007	29,798	72,949
GRAND TOTAL	80,090	156,650	5,477	59,285	301,502	77,751	170,557	10,081	51,494	309,893

APPENDIX C.

Statement showing stock of mechanical transport vehicles and estimated requirements.

Type of vehicle	Stock of vehicles				Requirements as contemplated by Military Authorities		
	Fit for war	Fit for war after repairs	Obsolete vehicles	Total stock	Vehicles maintained in use.	Vehicles in stock.	Total.
Motor cars	135	70	214	449	261	198	459
Char-a-bancs	...	...	4	4	...	...	...
Heavy Lorries	264	161	280	705	486	605	1,181
Light Lorries	49	...	161	210	139	128	267
Vans	209	100	758	1,068	161	292	453
Ambulances	203	53	235	491	207	467	664
Armoured Cars	19	...	60	79	147	25	172
Workshop and miscellaneous	...	...	...	...	...	...	...
Lorries	107	17	56	180	131	115	246
Chassis	126	...	7	133	...	...	...
Tractors tenders and miscellaneous vehicles	30	13	17	60	52	17	69
TOTAL	1,163	404	1,792	3,359	1,584	1,927	3,511
Motor Cycles	256	124	304	684	..	...	...

APPENDIX D.

Working Expenses of Store Depôts, etc.

Depôts, etc.	1913-14, ACTUAL EXPENDITURE.					1921-22, BUDGET ESTIMATE *					1922-23, BUDGET ESTIMATE.				
	Gross Expenditure.	Charged to other heads	Balance.	Receipts.	Net Expenditure.	Gross Expenditure	Charged to other heads.	Balance.	Receipts.	Net Expenditure	Gross Expenditure.	Charged to other heads	Balance	Receipts	Net Expenditure.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Arsenals and Ordnance Depôts .	26,08,924	...	26,08,924	...	26,08,924	54,71,000	...	54,71,000	1,70,000	53,01,000	72,87,240	2,70,000	70,17,240	26,50,000	43,67,240
Clothing and Boot Depôts .	...	...	...	...	...	4,97,000	...	4,97,000	...	4,97,000	4,74,080	..	4,74,080	8,00,000	+ 3,25,920
Directorate of Stocks .	...	...	...	...	...	...	...	...	...	..	1,67,000	..	1,67,000	..	1,67,000
Supply Depôts	43,13,057	39,79,947	3,33,110	27,376	3,05,734	44,62,000	...	44,62,000	60,000	44,02,000	98,12,000	76,12,000	23,00,000	..	23,00,000
Medical Store Depôts . . .	3,27,584	...	3,27,584	...	3,27,584	4,51,000	...	4,51,000	...	4,51,000	5,94,240	..	5,94,240	...	5,94,240
Veterinary Store Depot . . .	...	...	...	...	...	14,000	...	14,000	..	14,000	..	..	..	...	..
Veterinary Hospitals	4,26,439	...	4,26,439	...	4,26,439	22,76,000	...	22,76,000	...	22,76,000	26,99,000	..	26,99,000	...	26,99,000
Remount Depôts and Breeding Operations.	27,23,071	20,77,451	6,45,620	1,80,656	4,64,964	53,58,000	...	53,58,000	3,00,000	50,58,000	66,12,000	43,34,000	17,78,000	2,23,000	15,55,000
Central Mechanical Transport Store.	...	...	...	...	...	3,50,000	...	3,50,000	...	3,50,000	4,73,000	..	4,73,000	..	4,73,000
M. T. Reserve Vehicle Park	...	...	...	...	...	2,03,000	...	2,03,000	..	2,03,000	2,70,000	...	2,70,000	...	2,70,000
M. T. Shipping Section . . .	...	...	...	...	...	14,000	...	14,000	..	14,000	14,000	...	14,000	...	14,000
TOTAL	1,03,99,075	60,57,898	43,41,177	2,08,082	41,33,845	1,90,96,000	...	1,90,96,000	5,30,000	1,85,66,000	4,84,02,560	1,26,16,000	1,57,86,560	36,73,000	1,21,13,560

APPENDIX E.

Working Expenses of Manufacturing Establishments.

	1918-14, ACTUAL EXPENDITURE.					1921-22, BUDGET ESTIMATE.					1922-23, BUDGET ESTIMATE.				
	Gross Expenditure.	Charged to other heads	Balance.	Receipts	Net Expenditure.	Gross Expenditure.	Charged to other heads	Balance	Receipts.	Net Expenditure.	Gross Expenditure.	Charged to other heads	Balance.	Receipts	Net Expenditure.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
(a) Bakeries	1,00,260	1,00,260	...	...	...	...	...	...	...	...	10,84,000	10,84,000	...	...	..
(b) Butcheries . . . . .	...	...	...	...	...	...	...	...	..	..	15,000	15,000	...	...	...
(c) Grass farms	44,77,248	44,77,248	...	1,56,544	1,56,544	78,90,000	70,29,000	8,61,000	8,61,000	...	1,06,90,000	98,30,000	8,00,000	8,00,000	..
(d) Dairy farms	24,15,418	...	24,15,418	19,80,411	4,35,007	68,39,000	...	68,39,000	68,39,000	...	67,25,000	...	67,25,000	67,25,000	...
(e) Army Clothing factories	28,72,246	28,72,246	...	33,832	33,832	98,50,000	98,50,000	...	...	...	84,43,250	84,03,000	40,250	10,50,000	10,09,750
(f) Army Ordnance factories	62,88,535	52,39,864	10,48,671	10,48,671	...	1,70,78,000	1,65,48,000	5,30,000	5,30,000	...	1,13,25,000	1,04,85,000	8,40,000	5,00,000	3,40,000
(g) Base Mechanical Transport Workshop . . . . .	...	...	...	...	...	29,68,000	...	29,68,000	..	29,68,000	32,53,000	...	32,53,000	...	32,53,000
Total Expenditure	1,61,63,707	1,26,89,618	34,64,089	32,19,458	2,44,631	4,46,25,000	3,94,27,000	1,11,98,000	82,30,000	29,68,000	4,14,75,250	2,98,17,000	1,16,58,250	90,75,000	25,83,250

ROYAL AIR FORCE.

	Rs.
1913-14, Actual Expenditure	41,000
1921-22, Revised Estimate	1,34,29,000
1922-23, Budget Estimate	1,41,00,000

We understand it has been decided that in future the estimates of the Royal Air Force shall be included in a separate section of the Budget which will contain provision for all expenditure relating to the Force. We are informed that the provision proposed under this head for 1923-24 is Rs. 1,88,05,000. A portion of the increase is due to the transfer to this section of expenditure in the Military Works Department on accommodation for the Force (Rs. 10 lakhs in 1922-23), and of payments to the Air Ministry for passages. The balance is required to bring the Air Force up to a state of efficiency. Since the potentialities of the Air Force in India are only now being proved, and there is a possibility that the extended use of the Air Force might result in economies in expenditure on ground troops, we make no recommendations.

ROYAL INDIAN MARINE.

The estimate for 1922-23 compares with the revised estimate for 1921-22 and the actual expenditure in 1913-14 as follows:—

	Expenditure in India.	Expenditure in England.	Total (sterling converted at rate of Rs. 15=£1).
	Rs.	£	Rs.
1913-14, Actual Expenditure	24,93,000	257,100	63,49,000
1921-22, Revised Estimate	44,97,000	392,900	1,08,91,000
1922-23, Budget Estimate	67,21,000	465,200	1,36,99,000

2. The functions of the Royal Indian Marine hitherto have been—

- (1) The conveyance of troops in "Indian waters".
- (2) The maintenance of station ships, the tending of lighthouses in the Red Sea, the Persian Gulf and Burma, and the Marine Survey of India.
- (3) The maintenance of the Bombay Dockyard and of all military launches.

A list of vessels in the Royal Indian Marine together with details of the cost of maintaining the more important vessels is given in Appendix A.

3. *Troopships*—We are informed that it is proposed to dispose of the three troopships "Dufferin", "Hardage" and "Northbrook". These vessels, which were originally intended to convey troops in "Indian waters", have been engaged mainly on trooping service for His Majesty's Government from whom the expenditure incurred was recovered. The total cost of maintaining these three vessels for 1922-23 was Rs. 34,93,869, excluding Rs. 8,17,485 for interest on capital at 5 per cent. and depreciation charges at 4 per cent. The sale of the vessels will therefore effect an automatic reduction in the provision required for 1923-24 of Rs. 34,93,869 against which must be set off the loss of receipts from the hire of the vessels to His Majesty's Government, *viz.*, Rs. 3,18,000, and the expenditure which must be incurred for care and maintenance parties

for each vessel until sold, which is estimated at a total of Rs. 90,000 annually. The net reduction in the provision required for 1923-24 compared with the current year is consequently Rs 30,86,000.

4. *Station ships, etc.*—We discussed with the Director, Royal Indian Marine, the possibility of dispensing with some of the other Royal Indian Marine vessels now maintained and understand that he has suggested to the Government of India that the "Lawrence" should be fitted up to perform her own duties and those of the "Nearchus". The annual cost of maintaining the "Nearchus," which is borne on the Political Estimates, is Rs. 4,86,000, of which one-half is paid for by the British Government. The "Lawrence" is at present utilised as a despatch vessel in the Persian Gulf and we consider that her cost also, *i.e.*, Rs. 4,62,000, exclusive of interest on capital and depreciation, should be borne on the Political estimates.

It should also be possible to arrange for the tending of certain of the Burma lights by trawlers and for the "Clive" to combine the Andaman and Burma station-ship duties and thereby release the "Minto" for disposal. The cost of maintaining the "Minto", exclusive of interest on capital and depreciation is Rs 2,77,000, and the disposal of this vessel less the cost of maintaining trawlers would therefore effect some saving and the disposal of this vessel.

The "Cornwallis", which is employed as a station-ship at Aden, attends to the lights in the southern end of the Red Sea and, as we are informed that the Board of Trade is being asked to defray the cost of attending to these lights, a small saving in the Marine estimate should result therefrom. The "Dalhousie" is used as a receiving ship at Bombay at an annual cost of Rs. 1,30,000, but, in view of the decision to dispose of the 3 troopships and other Marine vessels, we consider that this vessel will no longer be required.

5. *Sloop and Patrol Craft.*—The sloop "Elphinstone" and the two Patrol Craft boats "Baluchi" and "Pathan" were presented to India by the Admiralty after the war. The sloop is used as a relief station ship to replace vessels as required during the period necessary for their annual refit or for repairs. It is intended to keep one of the Patrol Craft boats in commission for use as a training ship and the other Patrol Craft boat in reserve for use when the training ship is not available. The annual cost of maintaining the sloop is estimated at Rs. 3,21,000 and the two Patrol Craft boats at Rs. 1,50,000. Special provision for reconditioning these 3 vessels was made in the 1922-23 Budget, the total amount provided for their maintenance being Rs. 5,86,000. There should therefore be an automatic saving of Rs. 1,05,000 for 1923-24.

6. *Trawlers*—Of the nine trawlers now maintained, one has been leased to the Bombay Port Trust, who bear all working expenses and the cost of repairs, etc. We are informed that the second trawler has recently been hired to the Iraq Administration on a monthly hire of Rs 2,000 and arrangements are being made to hire the third trawler to a private individual for experimental fishing. Two of the remaining six trawlers may possibly be used as training ships in addition to the Patrol Craft boat, one will be utilised as a light-ship in the Persian Gulf in lieu of the existing light-ship and it is proposed to convert another into a water barge. The remaining 3 trawlers are at present unemployed.

We consider that one Patrol Craft boat and at least four trawlers should be dispensed with immediately.

7. *Yard craft and military launches.*—The number of yard craft in Bombay is 10, which is excessive and should be reduced. We have reviewed the use made of the 24 military launches and it has been agreed that 6, or possibly 7, of these launches can be dispensed with, and a saving of at least Rs. 60,000 per annum effected.

8. *River Steamers.*—The two river steamers "Bhamo" and "Sladen" are being replaced by two vessels which the Government of Burma has purchased from Iraq and a saving of Rs. 1,70,000 is anticipated for 1923-24.

9. The expenditure in India is subdivided under main heads as shewn below and it will be convenient to deal with each head seriatim :—

Head.	1913-14, Accounts	1921-22, Revised Estimate.	1922-23, Budget Estimate.
	Rs.	Rs	Rs.
General supervision and accounts	2,04,000	4,03,000	4,20,000
Marine Survey	58,000	96,000	1,08,000
Miscellaneous Shore Establishments	27,000	24,000	73,000
Dockyards	7,16,000	18,66,000	17,27,000
Salaries and Allowances of Officers and men afloat	8,23,000	18,69,000	20,99,000
Virtualing of Officers and men afloat	3,24,000	8,58,000	7,57,000
Marine Stores and Coal for Royal Indian Marine vessels	12,86,000	27,71,000	28,15,000
Purchase and hire of ships and vessels	5,000	9,000	9,000
Miscellaneous	3,12,000	11,68,000	5,86,000
Pensions	81,000	1,00,000	1,50,000
Total Expenditure	38,36,000	91,64,000	87,44,000
Less Receipts in India	13,43,000	46,67,000	20,23,000
Total net Expenditure in India	24,93,000	44,97,000	67,21,000

10. *General Supervision and Accounts, Rs 4,20,000.*—The large increase in the expenditure under this heading compared with 1913-14 is mainly due to the expansion of the Accounts section consequent upon the growth of Dockyard work. The cost of this section has risen from Rs. 88,000 in 1913-14 to Rs. 2,48,000 required for 1922-23, but the percentage cost of the accounting staff to the total expenditure dealt with has decreased from 1.08 per cent. to .92 per cent. so that the additional staff employed was apparently fully justified. The work in the Dockyards has recently fallen off about 15 per cent. and a *pro-rata* reduction should therefore be immediately possible in the Accounts section and a further reduction when our recommendations regarding the Dockyards take effect.

We ascertained that, although roughly 25 per cent. of the cost of Supervision and Accounts is incurred in connection with the Dockyards, it has not been the practice to make a full charge for these services in the case of works carried out for the Royal Navy, Local Governments or outside bodies. Recently however it was decided that an appropriate share of all indirect charges should be added to the cost of work executed in the Dockyard and recoveries to the extent of Rs. 2,00,000 are anticipated for the current year. In view of the proposed reductions in the activities of the Royal Indian Marine we consider there will be no justification for retaining the post of Deputy Director and we recommend this appointment be abolished and that the house now being built for the Deputy Director in the Dockyard at a cost of over Rs. 1 lakh should be occupied by the Director of the Royal Indian Marine for whom a house is now rented, the provision made for 1922-23 being Rs. 12,000.

It has been represented to us that considerable difficulty has been experienced by the frequent changing of the Controller of Marine Accounts. We suggest that, if possible, an officer should be retained permanently in the appointment.

We recommend that the provision for General Supervision and Accounts in 1923-24 should be limited to Rs 3,50,000, of which Rs 2,00,000 should be recovered from the Royal Navy and other bodies, in connection with work carried out in the Dockyard.

11. *Marine Survey, Rs. 1,08,000.*—The expenditure included under this head represents only the pay of Scientific Officers, Surveyors and Assistant

Surveyors and their office establishment. The total cost of maintenance of the two survey ships is estimated at Rs. 7,54,000 for 1922-23 (*vide* Appendix A). We ascertained that the complements of the two marine survey vessels have been increased as follows :—

	Gross Tonnage.	1913-14 Complement	1922-23 Complement
"Investigator"	1,185	109	118
"Palnurus"	444	46	54

The additional ratings comprise 12 Signalmen, 2 Sick berth and dispensary attendants, 2 Engine drivers temporarily employed, and 1 Bhandary. We discussed the necessity for employing these additional ratings with the Director, who stated that he hoped to be able to effect a reduction in the number of signallers and in the complements, of all Marine vessels for 1923-24.

A considerable portion of the cost of marine survey work has in recent years been recovered from Port Trusts, Local Governments and the Anglo-Persian Oil Company, but we ascertained that no charge has been included for interest on capital, depreciation and pension charges and we recommend that in future the charges made should cover the full cost involved.

Survey work is an essential function of the Royal Indian Marine and apart from minor economies resulting from a curtailment of the complements of the survey vessels we make no recommendation.

12. *Miscellaneous shore establishments, Rs. 73,000.*—The expenditure on miscellaneous shore establishments is subdivided as follows :—

	1913-14.	1922-23.
	Rs.	Rs.
Perim Light House	9,000	10,000
Coal Depôts in Persian Gulf	16,000	60,000
Miscellaneous	2,000	3,000
TOTAL	27,000	73,000

We recommend that the cost of working the Perim Lighthouse should be recovered by light dues, saving Rs. 10,000.

The expenditure under "Coal Depôts in the Persian Gulf" is mainly in connection with India's liability for the supply, free of charge, of coal to subsidised vessels of the Royal Navy employed in the Persian Gulf. The large increase since 1913-14 is due to the retention of the Coal Depôt at Henjam which was opened during the war to supply coal to Government transports plying between India and Mesopotamia. Prior to the war, coal was kept only at Bushire, Muscat and Basrah, and we are of opinion that, unless it can be shown that the retention of Henjam, which we understand is situated in a very advantageous position, can be justified financially, it should be dispensed with. We are informed however that, even if Henjam is retained, a saving of Rs. 32,000 will be effected for 1923-24 by the employment of an outside contractor.

We recommend that the total provision for miscellaneous shore establishment in 1923-24 should be limited to Rs. 31,000, a reduction of Rs. 42,000.

13. *Dockyards.*—Since 1913-14 the Kidderpore Dockyard has been closed down as a Government concern, but Rs. 25,000 was provided in 1922-23 for a care and maintenance party to look after the buildings and machinery until they are taken over by the Calcutta Port Trust or otherwise disposed of. We understand that no provision will be required for 1923-24 and there will therefore be an automatic saving of Rs. 25,000.

The expenditure incurred at Dockyards, chargeable to the Royal Indian Marine is subdivided as follows:—

	1913-14.	1921-22.	1922-23.
(a) Administrative and supervising staff	Rs. 2,99,000	Rs. 3,30,000	Rs. 4,89,000
(b) Wages of Artificers and Labourers	4,09,000	15,04,000	10,63,000
(c) Miscellaneous expenditure	8,000	32,000	1,75,000

Hitherto no commercial accounts of the working of the Dockyards have been kept and it is not therefore possible to ascertain whether the Dockyards are being economically worked or otherwise. We are informed however that a new system of accounts on a commercial basis has been introduced for the current year.

(a) *Administrative and Supervising Staff.*—We understand that, apart from the general increase in salaries and wages, the increased expenditure compared with 1913-14 is due to the employment of additional staff consequent upon the increase of work at the Dockyard. We are informed that a number of foremen and inspectors have been obtained from the Admiralty Dockyards in England on a three years' contract with a view to increasing efficiency and that the additional supervision provided has already enabled a considerable reduction to be effected in the cost of labour. Ultimately it is proposed that these men shall be replaced by Indian mechanics, when sufficiently experienced to take charge, but no immediate reduction can be effected.

(b) *Wages of Artificers and Labourers.*—There will be a large saving in the cost of wages chargeable against the Marine Service in 1923-24, owing to the reduction in the number of vessels to be maintained but we have already taken credit for these savings.

(c) *Miscellaneous expenditure.*—The provision for 1922-23 included Rs. 1,15,000 for underground mains for electric power and as this expenditure is non-recurring a reduction of Rs. 1,15,000 may be anticipated for 1923-24.

When the three troopships the "Hardinge," the "Northbrook" and the "Dufferin" and the stationship "Minto" have been disposed of and the number of launches reduced, there will only remain about 8 small vessels and 18 launches apart from yard craft to be docked and overhauled in the Bombay Dockyard in addition to the overhauls to be done to His Majesty's ships on the East India Station. There are several other dry docks in Bombay which could be utilized and a number of up-to-date marine workshops which could be made use of in the event of some vessel having to be repaired urgently. It is self-evident, therefore, that there is no occasion to maintain in the dockyard the present large establishment which is as follows:—

	EUROPEANS		INDIANS		TOTAL.	
	No.	Monthly cost.	No.	Monthly cost.	No.	Monthly cost.
Permanent establishment	54	Rs. 43,120	128	Rs. 17,370	182	Rs. 60,490
Temporary establishment	3	1,060	453	24,937	456	26,577
Artificers on daily rates of pay	14	1,272	3,694	1,41,150	3,708	1,42,422
TOTAL	70	4,042	4,275	1,83,457	4,345	2,29,499

We are of opinion that a drastic reduction should be made and only sufficient personnel maintained to provide for current work and to leave the dockyard capable of expansion in an emergency.

14. *Salaries and allowances of officers and men afloat—*

	Rs.
1913-14, Actual Expenditure	8,23,000
1921-22, Revised Estimate	18,69,000
1922-23, Budget Estimate	20,99,000

A reduction of Rs. 5,43,047 will automatically be effected under this heading in 1923-24 by the sale of the three troopships and further savings by the abolition of other vessels. Apart from these savings, the Director of the Royal Indian Marine anticipates that it will be possible to effect a reduction in the complements of marine vessels and we consider that a saving of additional Rs. 50,000 should be possible for 1923-24.

We are informed that it was represented by the Director of the Royal Indian Marine, when the budget for 1922-23 was being proposed, that the rates of pay and allowances of Indian ratings compared unfavourably with those paid by the Mercantile marine and that, in consequence, difficulty was being experienced in securing and retaining a suitable class of men. The pay of Mercantile marine ratings has however been reduced recently and a similar reduction should therefore be possible in the case of Royal Indian Marine ratings.

15. *Victualling of officers and men afloat, Rs 7,57,000*—Apart from the saving which will accrue under this heading in 1923-24 by the reduction in the number of Marine vessels, some saving should be possible in the cost of rations, owing to the fall in prices which has taken place, and we consider that an additional saving of at least Rs. 30,000 should be possible.

16. *Marine stores and coal for Royal Indian Marine vessels.*—The provision under this heading for 1922-23 included Rs 2 lakhs for the payment of the arrear claims. A saving of Rs. 85,000 is also anticipated on the cost of marine stores owing to the fall in prices. It is admitted that, until recently, the arrangements for the purchase, issue and control of stores were unsatisfactory and that there was a large accumulation of certain classes of oil and cordage. There was no properly trained store officer in charge or any system of verification of stocks, and indents were based on the average of the three previous years without regard to the stock on hand. We refer to this matter later in dealing with imported stores.

With regard to coal we are informed that the budget provision was based upon the amount to be purchased, which was considerably less than the amount actually consumed, the difference representing a reduction in stocks. Full credit for the coal consumed by the troopships, etc., which it is proposed to dispense with, has been taken in estimating the savings in respect of these vessels, and some allowance must therefore be made for depletion of stocks.

17. *Miscellaneous, Rs. 5,86,000*—

The analysis of this expenditure is as follows:—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
Medical Stores	3,000	9,000	3,000
Piloting and towing	32,000	74,000	54,000
Passage and conveyance	31,000	62,000	1,06,000
Repairs to Royal Indian Marine vessels at outstations	16,000	86,000	1,09,000
Miscellaneous	10,000	1,99,000	2,64,000
Freight	14,000	50,000	50,000
TOTAL	1,06,000	4,82,000	5,86,000

We discussed in detail the expenditure under this heading with the Director of the Royal Indian Marine who stated that the large increase in the expenditure on repairs to Royal Indian Marine vessels at outstations was due to reconditioning the troopships after the war and that a considerable saving might be anticipated for 1923-24. The expenditure under "Miscellaneous" had been largely overestimated and the actual expenditure in the first six months only amounted to Rs. 27,000. We recommend, therefore, that the total provision for miscellaneous expenditure be reduced from Rs. 5,86,000 to Rs. 3,00,000, a saving of Rs. 2,86,000.

18. Receipts in India—

	Rs.
1913-14, Actual Receipts	13,43,000
1921-22, Revised Estimate	46,67,000
1922-23, Budget Estimate	20,23,000

The receipts under this head may be sub-divided as follows :—

	1913-14.	1921-22.	1922-23
	Rs.	Rs.	Rs.
Recoveries from His Majesty's Government and from other Departments in India in connection with the work carried out at the dockyards, etc	9,76,000	13,94,000	9,96,000
Hire of vessels	2,46,000	27,74,000	3,18,000
Sale proceeds of stores	58,000	4,00,000	4,00,000
Miscellaneous	41,000	79,000	2,37,000
Recoveries on account of Indian service family pensions	22,000	20,000	22,000
TOTAL	13,43,000	46,67,000	20,23,000

It was represented to us that it was difficult to frame any reliable estimate of the work which the Admiralty require to be carried out at Bombay Dockyard. The class of ships stationed in the East Indies varies from time to time and, whereas the Admiralty furnished a statement of the ships which will refit in the ensuing year, it is not possible to estimate beforehand what repairs and alterations will be required. All expenditure incurred is recoverable, and, as the staff employed at the dockyards is regulated to meet the current requirements, any reduction in receipts will be offset by decreased expenditure. The receipts from the hire of vessels relate to troopships and the loss of these receipts in 1923-24, which will result from the disposal of the three troopships, has already been taken into consideration. The miscellaneous receipts comprise recoveries from the supply of coal in the Persian Gulf to vessels of the Royal Navy other than the subsidised ships.

Expenditure in England.

	£	Rs.
		£1 = Rs. 75.
1913-14, Actual Expenditure	257,100	38,56,500
1921-22, Revised Estimate	392,900	58,93,500
1922-23, Budget Estimate	465,200	69,78,000

19. This expenditure is subdivided under main heads as shewn below :—

	1913-14.	1921-22.	1922-23.
	£	£	£
Contribution towards expenses of Imperial Navy	100,000	100,000	100,000
Royal Indian Marine furlough pay	10,000	30,000	30,000
Stores for India	117,700	216,000	194,400
Coal supplied to subsidised vessels and the Royal Navy in the Persian Gulf . . . . .	...	...	46,600
Purchase of vessels . . . . .	...	...	51,000
Sundry items	1,700	3,000	2,500
Pensions	27,700	43,900	40,700
TOTAL	257,100	392,900	465,200

The first two items in the above table are not susceptible of reduction, except in so far as the furlough pay will be reduced by the reduction in the number of officers employed in the Royal Indian Marine. With regard to stores we are informed that, owing to the existence of large stocks, the expenditure for the current year has been restricted to £72,500. Particulars of the stocks of principal commodities on hand on the 1st April 1922 and the normal consumption per annum are given in Appendix B. We understand that until recently it has been the practice to maintain 3 years' reserve stock and, that it has been decided that in future only 2 years' supply of imported stores should be kept in reserve. The total value of imported and Indian stores on hand on March 31st, 1922, was Rs. 75,11,000, and of the issues during 1921-22, Rs. 39,52,000. We consider that the reserves should be restricted to one year's requirements and we recommend that the provision for 1923-24 be limited to £75,000, a reduction of £119,000.

Coal supply to subsidized vessels of the Royal Navy and the Persian Gulf—Although £46,600 were provided under this heading for 1922-23, the expenditure is now estimated at only £18,000. No restriction exists as to the amount of coal to be supplied free to Royal Navy subsidized vessels, the arrangement being that ships enter the Gulf with full bunkers at Admiralty expense and leave the Gulf with bunkers full at Indian Government expense. It appears, however, that the estimate for 1922-23 was framed on a basis far in excess of the actual consumption during recent years and also pre-war years, and we recommend that the estimate for 1923-24 be limited to £25,000, a reduction of £21,600.

Purchase of vessels, £51,000.—The expenditure under this heading was for the purchase of a new station ship for Aden in replacement of the "Dalhousie" which has become unserviceable. No similar provision will be required for 1923-24.

Sundry items and pensions.—The expenditure under these headings does not call for any special comment and we make no recommendation.

CONCLUSIONS.

Having reviewed the expenditure of the Royal Indian Marine we recommend that:

- (1) the Service be drastically curtailed and reorganised on the lines suggested;
- (2) the Dockyard be worked as a separate entity on a commercial basis;
- (3) the three troopships, "Dufferin," "Hardinge" and "Northbrook" be laid up forthwith and placed under care and maintenance parties until sold;
- (4) only such vessels as are necessary for the essential duties of the Royal Indian Marine and for use as training ships for Indians be retained;
- (5) the "Dalhousie," "Minto," "Nearchus," one patrol boat and four trawlers be dispensed with immediately and the number of military launches and Bombay yard craft be reduced;
- (6) the cost of maintaining the "Lawrence" be transferred to the Political estimates;
- (7) the recoveries from Port Trusts, etc., for Marine Survey work include a charge for interest on capital, depreciation and pension allowances;
- (8) the budget estimate for 1923-24 be limited to Rs. 62 lakhs, a reduction of Rs. 75 lakhs, including Rs. 4,62,000 transferred to the Political Estimates, the actual saving this being Rs. 70,38,000.

APPENDIX A.

Name of vessel.	Gross tonnage.	COMPLEMENT.			Functions of vessel.	Estimated annual cost of maintenance including interest on capital and depreciation.
		Officers	Warrant Officer.	Indian Ratings.		
Dufferin	8,260	19	9	254	Troopship	Rs. 13,77,958
Hardinge	6,850	19	9	254	"	15,39,601
Northbrook	6,100	18	8	242	"	13,93,795
Chive	2,100	7	6	113	Station Ship, Rangoon	6,81,408
Mine	1,152	10	4	95	" " Port Blair	3,36,556
Cornwallis	1,498	8	4	790	" " Aden	6,30,000
Investigator	1,185	2	6	110	Survey Ship	5,91,182
Palmarus	444	1	1	52	" " "	2,23,116
Nearobus	925	5	6	68	Light house tender, Persian Gulf	4,66,133
Lawrence	1,259	6	7	92	Despatch vessel, Persian Gulf	7,15,498
Elphinstone	1,498	8	4	120	Training ship and relief station ship	6,56,563
Dalhousie	2,195	9	4	110	Receiving ship, Bombay	1,30,000
Sladen	270	3	3	61	Rover Boat, Burma . . . . .	...
Bhamo	172	2	4	41	" " " . . . . .	...
Bainohi, Patrol Craft 55	605	..	..	64	Patrol vessel . . . . .	...
Pashan, Patrol Craft 69	605	..	..	..	" " " . . . . .	...
9 Trawlers . . . . .	..	..	..	30	" " " . . . . .	...
24 Military launches . . . . .	..	..	4	296	" " " . . . . .	...
10 Yardcraft, Bombay . . . . .	..	..	..	248	" " " . . . . .	...
8 Yardcraft, Calcutta . . . . .	..	1	1	61	" " " . . . . .	...

Details of cost of troopships.

	TROOPSHIP.		
	Dufferin.	Hardinge.	Northbrook.
	Rs.	Rs.	Rs.
Pay and allowances of Officers and Men	1,80,813	1,86,594	1,75,840
Rations	87,585	93,296	89,758
Stores	52,301	66,417	61,077
Repairs	3,00,000	3,00,000	2,36,000
Coal, oil and water	4,15,204	5,77,874	5,32,809
Miscellaneous	10,000	11,000	7,788
Pension charges	37,120	37,120	35,470
Interest at 5 per cent. per annum	1,63,967	1,48,500	1,41,696
Depreciation at 4 per cent.	1,81,165	1,18,200	1,13,357
TOTAL	13,77,958	15,39,601	13,93,795

APPENDIX B.

Stocks and consumption of ordinary Home stores (principal commodities only).

Articles.	Stocks on hand 1st April 1921.	Stock on hand 1st April 1922.	Normal consumption per year based on figures for 1921-22.
Canvas, Royal Navy, etc. yards	386,421	318,277	123,000
Compositions for ships' bottoms, etc. (including paints). cwt.	3,456	5,464	3,000
Metals—			
Plates steel boiler cwt.	8,761	8,080	1,000
" " ships no.	5,117	5,598	500
Tubes, brass seamless feet	70,009	67,823	4,000
" " for surface condensers "	122,517	120,426	2,100
Tubes, copper "	90,954	76,645	15,400
" steel "	164,057	126,269	64,500
Naval brass bolts staves cwt.	1,390	1,160	200
Cordage barred fathoms	237,573	257,093	23,000

MILITARY WORKS.

The estimate for 1922-23 compares with the actual expenditure in 1913-14 and the revised estimate for 1921-22 as follows :—

		Net Expenditure.
		Rs.
1913-14, Actual Expenditure	.	1,33,06,000
1921-22, Revised Estimate	.	5,14,07,000
1922-23, Budget Estimate	.	4,54,97,000

2. This expenditure may be subdivided as follows :—

Head of Expenditure	1913-14.	1921-22.	1922-23.
	Rs	Rs.	Rs.
NEW BUILDINGS AND WORKS	54,40,000	2,61,45,000	2,08,80,000
REPAIRS	46,22,000	93,83,000	93,47,000
MISCELLANEOUS	9,01,000	77,22,000	82,03,000
ESTABLISHMENT	81,60,000	86,44,000	80,05,000
TOOLS AND PLANT	1,81,000	3,91,000	3,50,000
SPECIAL EXPENSES	2,45,000	..	..
TOTAL EXPENDITURE	1,44,55,000	5,22,85,000	4,67,85,000
<i>Add for exchange* at Rs 15=</i>			
<i>£1</i>		6,52,000	2,42,000
<i>Deduct—Recoveries</i>	11,49,000	15,30,000	15,30,000
NET EXPENDITURE	1,33,06,000	5,14,07,000	4,54,97,000

* Expenditure in England included in the above statement has been taken at Rs 10=£1. We have not been able to obtain information showing how this expenditure is distributed over the various headings and it has therefore been necessary to make a lump addition representing the difference between the rupee equivalent of the sterling expenditure at Rs 10=£1 and at Rs. 15=£1.

We deal with the expenditure under the above headings seriatim :—

NEW BUILDINGS AND WORKS.

		Rs.
1913-14, Actual Expenditure	.	54,40,000
1921-22, Revised Estimate	.	2,61,45,000
1922-23, Budget Estimate	.	2,08,80,000

The grant of Rs. 2,08,80,000 for 1922-23 was distributed as follows :—

		Rs.
New works	.	41,58,000
Works in progress	.	83,52,000
Special grant for Waziristan	.	40,00,000
Reserve for unforeseen requirements	.	22,70,000
Buildings and works costing up to Rs. 10,000 to be allotted by General Officers Commanding, Commands	.	21,00,000
TOTAL	.	2,08,80,000

3. *New works and works in progress.*—We have been supplied with the following list of Major Works said to be needed to complete the constructional programme of the Army :—

Description of works.	Estimated cost of proposals.	Sanctioned by the Government of India.
	Rs.	Rs.
New cantonments	2,12,00,000	32,00,000
Officers' quarters	1,12,00,000	
Accommodation for British troops	2,99,00,000	2,99,00,000
Accommodation for Indian troops	4,50,00,000	4,50,00,000
Offices for Northern and Western Commands	76,00,000	
Offices and quarters for clerks	62,00,000	
Hospitals for British troops	1,45,00,000	
Hospitals for Indian troops	1,79,00,000	
Royal Air Force	61,00,000	61,00,000
Ordnance factories and depôts	3,16,00,000	
Training and educational	1,70,00,000	
Water supplies	1,60,00,000	
Drainage and sanitation	48,00,000	
Electrical installations	1,51,00,000	
Roads in cantonments	17,00,000	
Frontier roads	3,84,00,000	
Railways	75,00,000	
Various auxiliary and other services and miscellaneous	3,83,00,000	88,00,000
TOTAL	33,00,00,000	9,30,00,000

We are informed that the above list is based upon information collected about a year ago, that many of the projects included in it have not yet been carefully investigated, and that there is no doubt that in certain cases reductions could be made. We have not examined the individual items in detail as we are strongly of the opinion that, in the present financial situation, the execution of a programme of this magnitude is wholly out of the question. Moreover conditions are changing and we think that it serves no useful purpose to lay down in advance a programme which there can be no expectation of carrying out in any reasonable period.

We understand that when the full amount of the allotment authorised for a particular work is not required for the purpose, it is the practice to obtain sanction from the Finance Department for the reappropriation of the funds for other works for which no provision had been made in the budget. Provided the Government has sanctioned a large programme of works and financial conditions admit of this programme being carried out, this may be a suitable arrangement. We are of opinion, however, that the reappropriation of funds should be limited to works included in the sanctioned programme and that the Finance Department should consider carefully in each case before sanctioning reappropriation whether the surrender of savings is justified by the financial situation.

4. The largest item in the programme is that of Rs. 4½ crores for accommodation for Indian troops and followers, including Rs. 4 crores for the reconstruction and improvement of lines for Indian troops. Formerly Indian troops constructed and maintained their own lines, regiments receiving an annual hutting grant for the purpose. All these lines fell into a state of disrepair during the war, and it was decided that they should be taken over by Government and reconstructed. This process of reconstruction is proceeding, but there still remains a large number of lines requiring reconstruction, many of which are in a very unsatisfactory condition. We are informed that the figure of Rs. 4 crores mentioned above does not cover the complete

cost of this measure, and have been supplied with the following figures showing the programme to which it is desired to work :—

	Rs.	Rs.
Expenditure to end of 1922-23		1,71,00,000
Balance required to complete lines in hand	72,00,000	-
Expenditure necessary on lines requiring urgent reconstruction	2,53,00,000	
" reconstruction within 5 years	1,59,00,000	
" " " 10 years	1,40,00,000	
		6,24,00,000
Improvements and supplementary items, such as schools, offices, etc, excluded from preceding estimates		1,70,00,000
		9,65,00,000

We are of opinion that, in view of the enormous outlay involved, the whole arrangements for accommodating both British and Indian troops should be reviewed, and that it should be considered whether it will be possible in some cases to accommodate the troops in existing barracks, some of which will fall vacant if our recommendation regarding a reduction of troops is accepted, and in other cases whether the old system should not be reverted to, until the future distribution of the army and strength of units have been definitely decided.

5. We have examined in detail the constructional programme for 1922-23 and have ascertained that, if no further new works are commenced and if works in progress are stopped or postponed wherever this can be done without sacrificing the value of the works already completed or without involving payment of compensation to contractors or loss of stores, the total expenditure on works in 1923-24 could be limited to approximately Rs. 40 lakhs. We recommend that the whole programme of Military Works requirements be examined and curtailed on the basis that the total provision for new works and works in progress, apart from the requirements of the Royal Air Force and any special measures rendered necessary by the military situation, should be reduced by Rs. 20,00,000.

6. *Reserve for unforeseen requirements, Rs. 22,70,000.*—This reserve is mainly distributed to Commands, to provide funds for completing small major works in progress from the preceding year, and for financing small new major works the need for which cannot be foreseen, Commands being given a free hand in the utilisation of these funds. We consider that, in present financial conditions, no major works should be embarked on without examination at headquarters, and we recommend that the annual provision should be reduced to Rs. 16,00,000, a saving of Rs. 6,70,000.

7. *Reserve for buildings and works costing up to Rs. 10,000—Rs. 21,00,000.*—This reserve is similarly distributed for the most part to Commands, and we recommend that the amount of this grant should be limited to Rs. 16,00,000, a saving of Rs. 5 lakhs.

REPAIRS.

	Rs.
1918-14, Actual Expenditure	46,22,000
1921-22, Revised Estimate	93,83,000
1922-23, Budget Estimate	93,47,000

8. Owing to a change in classification the figures for the three years cited are not strictly comparable. The provision of Rs. 93,47,000 in 1922-23 was distributed as follows :—

	Rs.
Buildings	64,47,000
Roads in cantonments	11,00,000
Roads outside cantonments (mainly frontier roads)	18,00,000
TOTAL	93,47,000

9. *Repairs to Buildings.*—It is doubtful whether any large saving is possible in respect of the expenditure on the repairs of existing buildings, but if the recommendations which we have made elsewhere are adopted there should be a material reduction in the accommodation required for troops and stores. It has also been brought to our notice that many vacant buildings are maintained. We recommend that the possibility be explored of effecting economies in new construction by the utilisation of such buildings for military purposes and that steps should be taken to dispose of all buildings which cannot be so utilised. Some reduction under this head should also be possible as a result of the fall in prices of materials and we recommend that the provision should be limited to Rs. 55,00,000, saving Rs. 9,47,000.

10. *Repairs to roads.*—We are informed that the question of retransferring certain frontier roads to the civil authorities is under discussion, and we are of the opinion that the decision under this head should be expedited. If our recommendation with regard to the construction of a light railway from Hindubagh to Fort Sandeman be adopted, there should be a considerable saving in the expenditure on the Harnai-Loralai road. We therefore consider that the total provision for roads should be reduced to Rs. 27 lakhs, saving Rs. 2 lakhs.

MISCELLANEOUS.

	Rs.
1913-14, Actual Expenditure	9,01,000
1921-22, Revised Estimate	77,22,000
1922-23, Budget Estimate	82,03,000

11. The items included under this head are the following :—

	Rs.
Maintenance and working expenses of water-supply	24,66,000
Maintenance and working expenses for electrical installations	18,49,000
Maintenance and working expenses for ice plants	2,60,000
Furniture purchased and repairs	13,51,000
Reserve for miscellaneous obligatory charges	5,34,000
Care of vacant buildings	1,97,000
Rents	3,21,000
Taxes	2,90,000
Compensation for quarters	2,01,000
Payments for railway sidings, etc.	2,72,400
Miscellaneous	4,32,000
Total	82,03,000

The water-supply and electrical installations and ice plants are of value in maintaining the health of the troops. Particulars of the capital cost of these installations and of their working results in 1921-22 are set out below :—

	Capital cost.	Total annual cost including overhead charges.
	Rs.	Rs.
Water-supply	48,48,000	12,44,504
Electrical installations	86,97,000	10,97,526
Ice plants	8,59,000	2,26,000

We are informed that the total expenditure proposed for 1923-24 on the items included under the head 'Miscellaneous' is Rs. 73,75,000, a saving of Rs. 8,25,000.

ESTABLISHMENTS.

	Rs.
1913-14, Actual Expenditure	31,16,000
1921-22, Revised Estimate	86,44,000
1922-23, Budget Estimate	80,05,000

12. The establishment maintained in 1913-14 and 1922-23 is analysed in the following table :—

	1913-14.		1922-23.	
	No. of officers on Establishment	Cost of Establishment.	No. of officers on Establishment	Cost of Establishment
		Rs.		Rs.
Director, Military Works	7	2,43,715	9	4,72,900
Four Chief Engineers, Commands			22	7,96,908
Commanding Royal Engineers, Districts (9 in 1913-14, 8 in 1922-23)	11	3,55,898	20	6,51,106
Executive Establishments	127	25,16,387	177	60,84,088
TOTAL	145	31,16,000	228*	80,05,000

* Including certain civilian Engineers.

The large increase in the number of officers employed and in the cost of establishments appears to be due to two main causes, firstly, the employment of additional officers in order to form a war reserve, and, secondly, the introduction of the four-command system. Under the present system 8 Commanding Royal Engineers and their establishments now cost Rs. 6,51,106 compared with Rs. 3,55,898 for 9 Commanding Royal Engineers in 1913-14. Nevertheless, the superior establishments have increased even more markedly in number and cost from 7 officers costing with their establishments Rs. 2,43,715 to 31 officers costing with their establishments Rs. 12,79,808 at the present time. We cannot find that any substantial measures of decentralization have accompanied this increase. Simultaneously, the proportion borne by the cost of the direction as a whole to the cost of the executive has increased from about 24 per cent. in 1913-14 to 31 per cent. in 1922-23. The total cost of establishment amounts to about 21 per cent on the expenditure on works. We see no justification for the present number of officers employed and consider that the staff should be progressively reduced approximately to the pre-war cadre, the grant for establishment in 1923-24 being fixed at Rs. 75,05,000, a saving of Rs. 5 lakhs and that further savings should be effected thereafter. The Commander-in-Chief is prepared to agree to the establishment being reduced by Rs. 5 lakhs in 1923-24 and by a further Rs. 5 lakhs in 1924-25 provided the improvement in payment of Royal Engineer Officers recommended by the Government of India is agreed to. He states that, unless this is done, it will not be possible to get efficient officers and thereby to reduce establishment.

13. We consider that further economies in establishment and the cost of works could be effected by an extension of the system of giving out new works or extensive repairs on lump sum contracts. We are informed that it is the practice to call for tenders and to give out work on contract, wherever possible, but that lump sum contracts for complete works cannot be made where imported material has to be used, as it is laid down by rule that such material must be obtained, with certain exceptions, through the High Commissioner for India. If this is correct, we recommend that such amendments be made in the rules as may be necessary to give effect to this proposal.

14. We have been informed that, owing to the fact that the funds allotted in a particular year lapse at the end of the year if unspent, there is always a rush of expenditure at the end of the year in order to avoid lapses, and that wasteful expenditure frequently occurs in consequence. We think that some system to obviate this waste should be immediately introduced.

TOOLS AND PLANT.

	Rs.
1913-14, Actual Expenditure	1,31,000
1921-22, Revised Estimate	3,91,000
1922-23, Budget Estimate	3,50,000

15. This expenditure is fixed on a percentage basis and will automatically be reduced as a result of the fall in prices and the proposed restriction in the total expenditure. We recommend that the provision under this head should be limited to Rs. 3,00,000, saving Rs. 50,000.

RECOVERIES..

	Rs.
1913-14, Actuals	11,49,000
1921-22, Revised Estimate	15,30,000
1922-23, Budget Estimate	15,30,000

The recoveries expected in 1922-23 may be analysed as follows:—

	Rs.
rent of Buildings	9,52,700
recoveries on account of water-supply	2,02,850
recoveries on account of electric current	1,25,950
Miscellaneous items	2,48,500
	<u>15,30,000</u>

We understand that the rate of interest on capital, adopted in estimating rentals for Military Works quarters, varies according to the date of construction and that this practice has led to numerous anomalies. We recommend that rent should be charged in the case of all new occupants with reference to the present rate of interest, irrespective of the date of construction, but subject to the usual maximum of 10 per cent. of pay, thereby securing some additional revenue.

STORES.

17. The following statement summarises the information supplied to us with regard to the holdings of mobilisation and other stores:—

	Mobilisation Stores	Ordinary Stores	
	1921-22, Actuals	1921-22, Actuals.	1922-23, Estimates.
	Rs.	Rs.	Rs.
Stock at beginning of year	94,30,000	38,63,000	35,41,000
Purchases	11,76,000	57,08,000	43,26,000
TOTAL	1,06,03,000	95,71,000	78,67,000
Issues	15,18,000	58,30,000	46,60,000
Stock sold or otherwise disposed of	3,19,000	2,00,000	99,000
Stock on hand at end of year	87,49,000	35,41,000	31,08,000
TOTAL	1,06,06,000	95,71,000	78,67,000

The above figures do not include stores purchased and charged direct to works. In the light of the information supplied to us, we consider that a reduction of Rs. 10 lakhs should be effected in the total purchases of stores in 1923-24 compared with the expenditure in 1922-23.

CONCLUSIONS.

Having reviewed the expenditure of the Military Works Department we recommend that—

- (1) the constructional programme of the Army already sanctioned by the Government of India be reviewed;
- (2) reappropriation of funds be prohibited except for works included in the sanctioned programme, when the reappropriation should be subject to the surrender of savings being justified by the financial situation; and
- (3) the budget estimate for 1923-24 be limited to Rs. 3,78,05,000 (net), a reduction of Rs. 76,92,000 including Rs. 10,00,000 transferred to the Royal Air Force, or a net saving of Rs. 66,92,000.

MILITARY SERVICES.

GENERAL CONCLUSIONS TO PART I.

We cannot conclude our report on the Military services without saying that His Excellency the Commander-in-Chief and the Army Department have displayed a whole-hearted disposition to reduce military expenditure, always bearing in mind the importance of maintaining the efficiency and mobility of the forces for protection against outside aggression and internal disorder, and we desire to extend to them our grateful thanks for the assistance they have rendered.

2. As we stated in our introductory remarks, although the budget estimate for the Military services in 1922-23 was Rs. 67,75,26,000, the full expenditure required during that year would, but for certain fortuitous circumstances, have amounted to Rs. 71,37,82,000. The gross reductions which we have indicated amount to Rs. 13,95,52,000, but additional provisions of Rs. 23,00,000 for practice ammunition, and Rs. 9,75,000 for gratuities to demobilised officers are required for 1923-24. If our recommendations are accepted, and, if they could all be brought into effect at once, the military budget for 1923-24 could be reduced to Rs. 57,75,05,000, but we recognise that it will take some time for the whole of these savings to materialise. The more quickly the reductions of troops are brought about the nearer will the actual expenditure approach this figure. The Finance Department in framing their estimates will require to make an allowance for terminal charges and for the expenditure which must necessarily be incurred during the period required to give full effect to the changes which we recommend. We are not in possession of the data necessary for framing such an estimate.

3. The reduction which we have indicated of Rs. 13,95,52,000 includes approximately Rs. 2½ crores for reductions in stocks which do not of course represent a recurring saving. These reductions, however, should ultimately lead to a substantial recurring economy by curtailing the establishments engaged on the maintenance of stores, by minimising loss from deterioration, by reducing expenditure on hire of ground and hire or construction of buildings, to say nothing of the loss to India which is involved by the enormous amount of capital at present locked up in stocks. Further we are informed that in the near future there will be large automatic savings by the liquidation of various liabilities arising out of the war; for example, gratuities to demobilised officers, India's share of which in 1923-24 is estimated at £115,000. We, therefore, believe that the adoption of our recommendations will enable the estimates in subsequent years to be reduced to about Rs. 57 crores, irrespective of any savings due to further economies or falling prices.

4. The above suggested reductions have been agreed to generally by the Commander-in-Chief, but in a great administration such as the Army in India, of which he is the responsible head, we recognise that, in working them out and in giving practical effect to them, he may find it desirable to make some minor modifications. There may result greater expenditure under one head and reduced expenditure under another, but, so long as the increase involved is more than counterbalanced by the reduction, we consider that the actual working out of details should be left in his hands.

5. We do not, however, consider that the Government of India should be satisfied with a military budget of Rs. 57 crores, and we recommend that a close watch be kept on the details of military expenditure with the object of bringing about a progressive reduction in the future. Should a further fall in prices take place, we consider that it may be possible, after a few years, to reduce the military budget to a sum not exceeding Rs. 50 crores, although the Commander-in-Chief does not subscribe to this opinion. Even this is more, in our opinion, than the tax-payer in India should be called upon to pay, and, though revenue may increase through a revival of trade, there would, we think, still be no justification for not keeping a strict eye on military expenditure with a view to its further reduction.

CONCLUSIONS.

Having reviewed the expenditure of the Military services, we recommend that—

- (1) the total *net* budget for 1923-24 be fixed at Rs. 57,75,00,000, subject to such addition as may be necessary on account of the delay which must ensue in carrying out the proposed changes; and
- (2) Military Expenditure after a few years be brought down to a sum not exceeding Rs. 50 crores.

PART II.

RAILWAY EXPENDITURE.

The estimate for 1922-23 compares with the revised estimate for 1921-22 and the actual receipts and expenditure in 1913-14 as follows :—

	Gross receipts.	Gross expenditure.	Net receipts.
	Rs.	Rs.	Rs.
1913-14, Actuals	56,44,65,000	49,26,19,000	7,18,46,000
1921-22, Revised Estimate	82,06,70,000	91,92,12,000	9,25,42,000
1922-23, Budget Estimate	99,76,68,000	94,72,00,000	5,04,59,000

CAPITAL EXPENDITURE.

2. *Capital Expended.*—The total capital expended on State-owned railways in India up to the 31st March 1922, including the liability incurred on the purchase of lines, amounted to Rs. 6,45,07,00,000, an increase of Rs. 98,84,00,000 since the 31st March 1914. We have been supplied with the following analysis of the expenditure :—

	STATE-OWNED RAILWAYS.		COMPANY WORKED LINES.		TOTAL	
	1913-14.	1921-22.	1913-14	1921-22	1913-14.	1921-22
	Rs crores	Rs crores	Rs crores	Rs crores.	Rs. crores	Rs. crores.
Construction of lines and works	72 88	67 91	180 68	154 60	208 56	241 91
Acquisition of land	24 0	9 41	6 11	7 56	8 71	11 08
Rolling Stock	24 13	35 23	46 72	75 95	70 85	111 18
Furnes	60	58	1 96	1 87	2 58	2 40
General charges	4 42	4 98	9 84	10 63	14 26	15 61
Stores not charged off in accounts	6 53	10 76	11 47	23 82	18 05	34 58
Other items	1 99	2 13	2 12	2 07	4 17	4 20
Liability for purchase of main lines	43 90	43 90	180 23	180 23	224 13	224 13
TOTAL	167 11	183 26	389 12	456 31	548 23	645 07
Less capital redeemed	4 42	7 53	17 93	31 54	22 35	39 07
Total capital at charge	162 69	180 73	371 19	425 27	525 88	606 00

The total capital expended is exclusive of the cost of land given free to the railways as no particulars are available of this expenditure. The total capital at charge has increased from Rs. 5,23,88,00,000 on the 31st March 1914 to Rs. 6,06,00,00,000 on the 31st March 1922 an increase of Rs. 82,00,00,000.

3. *Programme of future capital expenditure.*—The Legislative Assembly has authorised the expenditure of a further Rs. 150 crores on the rehabilitation of the railways during the 5 years ending 1926-27. We are informed that this sum has been allocated approximately as follows :—

	1922-23 (Budget).	1923-24	Future years.
	Rs. crores.	Rs. crores	Rs. crores.
Improvements to existing lines and works	14 59	14 84	42 54
Additional lines and works	2 05	2 81	40 00
Additional Rolling Stock	12 40	12 35	7 46
Reserve, etc.	9 6	...	...
TOTAL	30 00	30 00	90 00

We understand that, although Rs. 30 crores were provided for 1922-23, the actual expenditure is not likely to exceed Rs. 22 crores owing to the delay in obtaining material, etc. We deal later with the proposed capital programme.

FINANCIAL RESULTS.

4. *Financial results in 1922-23.*—We have been furnished by the Accountant-General, Railways, with the following analysis of the gross receipts and expenditure:—

	1919-14, Actuals.	1921-22, Revised estimate	1922-23, Budget estimate.	1922-23, Revised estimate.
	Rs.	Rs.	Rs.	Rs.
Gross Traffic Receipts	56,80,68,000	81,82,29,000	99,57,26,000	92,07,26,000
Subsidised Companies—Government share of surplus profits, etc.	13,97,000	24,41,000	19,42,000	25,97,000
TOTAL RECEIPTS	56,44,66,000	82,08,70,000	99,76,68,000	92,33,23,000
Working expenses	29,35,02,000	65,82,53,000	67,99,00,000	66,83,85,000
Surplus profits paid to Companies	66,13,000	1,04,69,000	60,00,000	68,07,000
Interest on debt	10,95,47,000	15,38,47,000	16,77,95,000	17,03,62,000
Annuities in purchase of Railways	5,06,94,000	5,03,56,000	5,03,63,000	5,08,63,000
Sinking fund	28,76,000	43,11,000	45,81,000	43,11,000
Interest on Capital contributed by Com- panies	2,92,86,000	3,28,76,000	*3,36,10,000	3,32,04,000
Subsidised Companies	7,89,000	7,41,000	19,88,000	10,80,000
Miscellaneous Railway expenditure	—6,88,000	29,19,000	29,77,000	34,50,000
TOTAL EXPENDITURE	49,26,19,000	91,32,12,000	94,72,09,000	93,32,62,000
Net Receipts	7,18,46,000	—9,26,42,000	5,04,59,000	—1,49,39,000

* Increase due to higher rate of interest on renewed debentures.

We are informed that the estimated receipts for 1922-23 are not now likely to be realised. When the estimate was framed it was anticipated that there would be a substantial increase in traffic which in 1921-22 had been adversely affected by prolonged strikes on the Assam Bengal and East Indian Railways. An additional revenue of Rs. 5,40,00,000 was expected from increased freight charges imposed to yield the same revenue as had previously been obtained from the surcharge abolished on the 1st April 1922, and a further revenue of at least Rs. 6,00,00,000 from an enhancement in passenger fares. The total estimated increase in gross receipts for 1922-23 compared with 1921-22 was Rs. 17,75,00,000. Traffic, however, has not developed to the extent anticipated and, although there has been some improvement in the receipts from coaching traffic, the receipts from goods traffic have declined with the result that the latest estimate of gross receipts for 1922-23 is only Rs. 92 crores, a decrease of Rs. 7½ crores compared with the budget estimate. Working expenses for the current year are now estimated at Rs. 66,83,85,000, a decrease of Rs. 1,15,15,000 compared with the budget estimate, and it is probable that, instead of the Central Government receiving a surplus of Rs. 5,04,59,000 in the current year, there will be a deficit of Rs. 1,49,39,000.

5. *Return to State on capital outlay.*—We are of opinion that the country cannot afford to subsidise the railways and that steps should be taken to curtail working expenses as necessary in order to ensure that not only will the railways as a whole be on a self-supporting basis, but that an adequate return should be obtained for the large capital expenditure which has been incurred by the State. We consider that, with economic working, it should be possible for the railways in India to earn sufficient net receipts to yield an average return of at least 5½ per cent. on the total capital at charge. The average return to the State during the 3 years prior to the war was 5 per cent., and, in view of the fact that large amounts of additional capital are being raised at 6 per cent. or over, we think a return of 5½ per cent. cannot be regarded as excessive.

A return of 5½ per cent. on the total capital at charge in 1922-23, after allowing for all interest annuity and sinking fund payments, would yield roughly Rs. 85 crores to the Central revenues. We are informed that, in deciding upon the amount of the Central Government's deficit which would have to be made good initially by contributions from the provinces, Lord Meston's Committee assumed that the Central Government would derive a net annual revenue of no less than Rs. 10½ crores from the Railways. It is evident, therefore, that the failure of the railways to yield an economic return on the capital invested by the State is one of the main factors responsible for the present financial difficulties of the Central Government. A return of 5½ per cent. would not merely go far towards bridging the deficit of the Central Government, but should, with the economies which we

recommend in the case of other Departments, make it possible to give much needed relief to the Provinces by a substantial reduction in the amount of their contributions. -

6. *Provision for arrears of maintenance and renewal.*—We recognise, however, that during the period of the war adequate provision was not made for the maintenance and renewals of permanent way and rolling stock, and that had such provision been made, it would probably have been necessary to increase rates and fares at an earlier date to meet the enhanced costs of labour and materials. In Great Britain a similar state of affairs existed during the period the railways were under control of Government: The taxpayer received the benefit of the excess receipts earned by the railways due to the postponement of repairs and renewals consequent upon the war but eventually the railways were given a lump sum grant to enable them to overtake all arrears. In India also the taxpayer received the benefit of the increased earnings consequent upon the postponement of repairs and renewals, but, as pointed out by the Acworth Committee, no provision has been made to enable these arrears to be overtaken. The provision of Rs. 150 crores to be spent in 5 years on the rehabilitation of the railways does not assist matters. This money can be utilised only for new works or to pay the cost of improvements carried out in connection with renewals, which represents only a small portion of the total cost of such renewals. It cannot be expended on repairs or for overtaking arrears of renewals, the cost of which is borne entirely by the working expenses.

We are informed that the expenditure necessary to overtake arrears of maintenance and renewals on all railways is estimated at Rs 18 crores, which is equivalent to roughly two years' provision for renewals. In view of the present financial circumstances and the large capital expenditure which is now being incurred on improving the railways, we consider that the overtaking of these arrears might well be postponed on railways not able to earn sufficient receipts to pay interest and sinking fund charges. It has been represented to us that the postponement of expenditure on overtaking arrears will necessitate some reduction in capital expenditure. We revert to this matter in dealing with the capital programme, but, in our opinion, all that is involved is a reallocation of capital expenditure. The real question to be decided is whether, when capital is so urgently required by some railways for remunerative purposes, the country can afford to borrow large sums of money at the present high rates for expenditure on railways which are not only unable to earn 5 per cent. on their present capital but which have to be subsidised by the general taxpayer. We consider that further expenditure on such railways can only be justified if it can be satisfactorily demonstrated that this expenditure will increase the net earnings of the railway sufficiently to cover the additional interest involved.

In this connection we quote, from the Administration Report on Indian Railways in 1921-22, the following remarks relating to expenditure on new construction. —

“It may be argued that Government must take account of the indirect benefits apart from the direct return in the shape of surplus earnings. Doubtless this is true; but Government resources available for direct construction are at present very limited. Money is expensive and only in exceptional cases is it justifiable to raise money at 6 per cent or to give corresponding guarantees to private enterprise for the construction of lines which do not offer some reasonable prospect of a corresponding return.”

We are in entire agreement with the principles above stated which are, in our opinion, equally applicable to expenditure on open line works, although they do not appear to have been applied in actual practice.

7. The Acworth Committee observed that the money unspent on maintenance and renewals during the war should have been carried to a reserve to be spent when materials were again available. We entirely agree with this view and are of opinion that it should be laid down that each railway should make adequate provision every year for the maintenance and renewal of its permanent way and rolling stock. The funds so earmarked should be debited to working expenses and carried to a suspense account which could be drawn on as necessary to meet current requirements, any unspent balance being

carried forward from year to year. Unless some such arrangements are adopted and strictly adhered to, it will not, in our opinion, be possible to say whether the railways are earning an adequate return on the capital outlay and there will be no effective check on ordinary working expenditure.

It is necessary, however, to make special provision to overtake the present arrears, as no funds are available in suspense accounts. It is, in our opinion, not practicable to make any general increase in rates and fares without adversely affecting the trade of the country. We consider that the best course will be that each railway should credit a suspense account with a portion of any surplus funds available, after payment of interest and sinking fund charges, for the specific purpose of overtaking arrears of renewals. This provision should, we think, not exceed the average annual amounts which would be necessary to overtake the arrears in five years. The overtaking of arrears on unremunerative railways must necessarily wait until the financial position improves.

8. *Results for individual railways.*—The following statement, compiled at our request by the Accountant-General, Railways, shows for the ten principal railways, with totals for all State railways, the financial results of working in 1915-14 and 1921-22 the latest estimate for 1922-23 and the preliminary estimate for 1923-24 :—

Railways.	Year	Capital at charge	Receipts.	Working expenses including surplus profits	Net receipts	Percentage of net receipts on Capital	Interest and Sinking Fund charges	Surplus or Loss.
		Rs	Rs	Rs	Rs		Rs	Rs
<i>Worked by State</i>	1913-14	89,34,67,000	8,09,96,000	4,55,70,000	3,74,26,000	42	3,24,04,000	50,22,000
	1921-22	1,06,48,01,000	12,99,15,000	12,79,53,000	19,62,000	0.1	4,25,02,000	4,65,40,000
	1922-23	1,09,23,21,000	14,1,62,000	12,21,20,000	1,90,42,000	1.7	4,44,40,000	2,53,98,000
	1923-24	1,12,01,57,000	14,80,00,000	13,10,45,000	2,69,55,000	2.4	4,66,50,000	1,96,95,000
North Western	1913-14	27,19,56,000	2,45,75,000	1,29,15,000	1,25,60,000	4.6	89,78,000	35,82,000
	1921-22	29,74,29,000	4,31,84,000	2,58,18,000	73,15,000	2.4	99,73,000	26,57,000
	1922-23	30,54,24,000	3,54,62,000	2,75,40,000	79,52,000	2.5	1,03,94,000	24,72,000
	1923-24	31,76,74,000	3,60,00,000	2,60,06,000	99,94,000	3.1	1,10,19,000	10,25,000
North and Rohilkhand.	1913-14	35,20,15,000	3,73,92,000	2,05,40,000	1,68,52,000	4.8	1,22,04,000	46,48,000
	1921-22	42,20,33,000	4,82,97,000	3,76,60,000	66,47,000	1.6	1,54,93,000	88,46,000
	1922-23	43,03,22,000	5,32,27,000	4,32,71,000	99,52,000	2.3	1,61,47,000	61,95,000
	1923-24	44,26,20,000	5,40,00,000	4,30,55,000	1,09,45,000	2.5	1,68,17,000	58,72,000
Eastern Bengal	1913-14	38,74,52,000	4,10,31,000	2,01,40,600	2,08,91,000	5.4	1,31,66,000	77,25,000
	1921-22	53,36,36,000	6,67,91,000	5,39,75,000	1,28,16,000	2.4	2,27,54,000	99,38,000
	1922-23	57,40,56,000	7,74,30,000	4,40,95,000	3,31,54,000	5.7	2,53,60,000	77,94,000
	1923-24	61,99,92,000	8,17,42,000	5,03,20,000	3,13,62,000	5.1	2,74,81,000	33,81,000
<i>Worked by Companies</i>	1913-14	89,12,64,000	8,67,02,000	5,38,41,000	3,48,61,000	3.9	3,47,73,000	88,000
	1921-22	86,50,21,000	13,27,13,000	12,40,32,000	86,81,000	0.9	4,23,10,000	3,36,29,000
	1922-23	1,00,45,90,000	14,84,56,000	11,93,09,000	3,44,47,000	3.4	4,38,87,000	89,40,000
	1923-24	1,04,19,66,000	14,84,44,000	10,91,22,000	3,93,22,000	3.7	4,55,50,000	62,26,000
Central Indian	1913-14	80,85,79,000	10,17,11,000	4,31,97,000	5,85,14,000	7.2	3,47,10,000	2,38,04,000
	1921-22	92,54,23,000	13,58,58,000	8,63,60,000	4,78,28,000	5.1	4,36,54,000	36,74,000
	1922-23	94,65,71,000	14,91,55,000	9,92,11,000	4,99,77,000	5.2	4,54,30,000	45,47,000
	1923-24	96,56,52,000	16,05,00,000	10,29,70,000	6,65,30,000	6.7	4,77,54,000	1,87,76,000
Bombay, Baroda and Central India.	1913-14	51,14,50,000	6,55,93,000	3,33,05,000	3,22,88,000	6.3	1,64,68,000	1,61,20,000
	1921-22	68,65,11,000	10,25,32,000	8,14,34,000	2,10,98,000	3.6	1,99,51,000	11,47,000
	1922-23	68,30,17,000	11,76,79,000	8,75,46,000	3,01,29,000	4.3	2,14,73,000	85,50,000
	1923-24	65,64,93,000	11,80,00,000	8,30,58,000	3,44,62,000	5.8	2,35,21,000	1,09,41,000
Madras and Southern Mahratta.	1913-14	45,17,28,000	4,20,71,000	2,54,15,000	1,66,56,000	3.7	1,82,44,000	15,88,000
	1921-22	48,11,10,000	4,90,94,000	5,04,26,000	1,52,68,000	3.2	2,13,71,000	61,03,000
	1922-23	49,47,85,000	7,24,89,000	5,97,54,000	2,17,29,000	4.4	2,20,67,000	3,41,000
	1923-24	51,26,38,000	7,85,19,000	5,74,40,000	1,50,79,000	2.9	2,30,63,000	79,84,000
North Indian.	1913-14	19,93,00,000	2,89,70,000	1,69,15,000	1,50,55,000	6.0	64,47,000	56,08,000
	1921-22	23,17,74,000	4,39,63,000	3,42,18,000	1,17,45,000	5.1	87,69,000	29,76,000
	1922-23	23,17,96,000	5,12,75,000	3,71,84,000	1,40,91,000	5.6	97,73,000	43,15,000
	1923-24	26,87,96,000	5,56,10,000	3,79,06,000	1,77,04,000	6.6	1,07,48,000	69,56,000
Central India.	1913-14	21,91,64,000	2,45,73,000	1,41,10,000	1,02,68,000	4.7	64,42,000	38,26,000
	1921-22	22,64,67,000	3,31,73,000	2,67,79,000	83,94,000	3.7	71,40,000	12,54,000
	1922-23	23,53,15,000	4,13,00,000	2,69,96,000	1,43,09,000	6.1	75,37,000	68,62,000
	1923-24	24,37,96,000	4,29,20,000	2,83,26,000	1,45,12,000	6.0	80,34,000	65,58,000
Other Railways.	1913-14	25,24,42,000	3,11,40,000	1,08,66,000	1,02,83,000	4.0	85,91,000	17,52,000
	1921-22	29,96,99,000	3,68,27,000	1,84,33,000	84,54,000	2.8	1,10,68,000	27,14,000
	1922-23	31,39,73,000	3,20,31,000	2,11,19,000	1,15,12,000	3.6	1,23,24,000	10,12,000
	1923-24	34,17,65,000	3,32,65,000	2,57,21,000	40,44,000	1.4	1,33,79,000	58,53,000
Allocated Receipts and Expenditure	1922-23	---	7,36,000	15,43,000	-8,17,000	---	---	8,17,000
	1-23-24	6,41,15,000	-44,76,000	-1,34,84,000	92,08,000	14.4	19,55,000	72,53,000
TOTAL*	1913-14	5,23,38,47,000	56,30,68,000	30,01,14,000	26,29,54,000	5.0	19,23,67,000	7,05,87,000
	1921-22	6,00,90,18,000	81,60,37,000	66,73,18,000	14,86,99,000	2.4	24,49,58,000	9,53,76,000
	1922-23	6,37,07,84,000	92,07,30,000	67,51,32,000	24,56,34,000	3.9	25,83,40,000	1,30,06,000
	1-23-24	6,61,36,64,000	95,57,24,000	67,50,27,000	28,06,97,000	4.2	27,59,71,000	47,25,000

* Total figures exclude subsidised companies and miscellaneous Railway expenditure.

This table shows that the only Railways whose financial results are better in 1922-23 than in 1913-14 are the Bengal Nagpur, the Madras and Southern Mahratta and the Burma Railways. The railways showing the worst results relatively to 1913-14 are the North Western, the Eastern Bengal and the Oudh and Rohilkhand.

9 A summary of the net profit or loss to Central revenues from the individual Railways in 1913-14 and 1922-23 is as follows —

Railway.	PROFIT OR LOSS TO CENTRAL REVENUES		Increase or decrease.
	1913-14	1922-23.	
	Rs.	Rs.	Rs
<i>Worked by State.</i>			
North Western	+ 50,22,000	- 2,53,98,000	- 3,04,20,000
Oudh and Rohilkhand	+ 35,82,000	- 24,72,000	- 60,54,000
Eastern Bengal	+ 46,48,000	- 61,95,000	- 1,08,43,000
<i>Worked by Companies.</i>			
Bengal-Nagpur	+ 77,25,000	+ 77,94,000	+ 69,000
Great Indian Peninsula	+ 88,000	- 89,40,000	- 90,28,000
East Indian	+ 2,38,04,000	+ 45,47,000	- 1,92,57,000
Bombay, Baroda and Central India	+ 1,61,20,000	+ 86,50,000	- 74,70,000
Madras and Southern Mahratta	- 15,88,000	- 8,41,000	+ 12,47,000
South Indian	+ 56,08,000	+ 43,16,000	- 12,92,000
Burma	+ 38,26,000	+ 68,62,000	+ 30,36,000
Other railways	+ 17,52,000	- 10,12,000	- 23,72,000
Unallocated items		- 8,17,000	- 8,17,000
TOTAL	+ 7,05,87,000	- 1,30,06,000	- 8,35,93,000

WORKING EXPENSES.

10 We now proceed to state what a detailed examination of the position has disclosed and to make our recommendations. We recognise that, in dealing with the working expenses of the railways, it is necessary to proceed on somewhat different lines to those adopted by us in the case of non-commercial departments, since the expenditure required is largely dependent on the volume of traffic handled, and increased expenditure would consequently be justified if necessary to secure additional receipts. Our observations must, therefore, be qualified by the underlying principle that the relation of working expenses to revenue should be so adjusted as to provide for an adequate return on the capital invested.

The budget estimate for working expenses in 1922-23 compares as follows with the revised estimate for 1921-22 and the actual expenditure in 1913-14.

	Rs.
1913-14, Actual Expenditure	29,35,02,000
1921-22, Revised Estimate	65,82,53,000
1922-23, Budget Estimate	67,99,00,000

11. The working expenses of the railways have increased from Rs. 29,36,02,000 in 1913-14 to Rs. 67,99,00,000 required for 1922-23, an increase of 131 per cent. An analysis of the expenditure on the ten principal

railways with totals for all State railways, in 1913-14 and estimated for 1922-23 is as follows :—

	1913-14, Actuals	1922-23, Budget estimate.	Percentage increase.
	Rs.	Rs.	
Maintenance of Way, Works and Stations	6,32,02,000	14,59,53,000	131
Locomotive expenses	10,23,68,000	23,07,63,000	125
Carrriage and Wagon expenses	2,71,14,000	9,09,12,000	235
Traffic expenses	4,88,57,000	9,64,03,000	97
General charges	2,26,70,000	4,23,11,000	87
Steam boat services	20,41,000	25,94,000	27
Special and Miscellaneous expenditure	1,79,04,000	4,22,02,000	136
Other items	-14,43,000	-4,80,000	...
Total 10 principal railways	28,28,13,000	65,06,58,000	130
Other railways	1,06,89,000	2,92,42,000	173
Total all railways	29,35,02,000	67,99,00,000	131

We now deal seriatim with the expenditure under each of the above heads, details of which are given for the principal railways in Appendix A.

12 *Maintenance of Way, Works and Stations: Rs. 14,59,53,000.*—The total route mileage of the 10 principal railways has increased from 23,757 miles on the 31st March 1914 to 24,499 miles on the 31st March 1922. The track mileage has increased during the same period from 32,888 miles to 34,576 miles or by 6·7 per cent.

The following statement shews for the year 1913-14 and estimated for 1922-23 the cost of maintenance and renewal of permanent way per mile of track and the total cost of maintenance of way, works and stations per route mile for some of the principal railways separately and for the 10 principal railways as a whole :—

Railway.	COST OF MAINTENANCE AND RENEWAL OF PERMANENT WAY PER MILE OF SINGLE TRACK OPEN FOR TRAFFIC			TOTAL COST OF MAINTENANCE OF WAY, WORKS AND STATIONS PER ROUTE MILE OPEN FOR TRAFFIC.		
	1913-14.	1922-23	Per cent. increase.	1913-14.	1922-23.	Per cent. increase.
	Rs.	Rs.		Rs.	Rs.	
North-Western	925	2,720	194	2,540	6,246	145
Oudh and Rohilkhand	825	3,302	300	1,793	4,803	168
Eastern Bengal	835	1,981	137	2,934	6,331	116
Bengal Nagpur	579	1,533	165	1,870	3,821	117
East Indian	1,043	2,616	169	3,505	8,670	137
Bombay, Baroda and Central India	1,072	1,938	80	2,411	4,684	94
Great Indian Peninsula	1,708	4,357	147	5,039	10,306	104
Average for 10 principal railways	1,035	2,623	154	2,664	5,957	124

We recognise that it is not possible to make any real comparison between the cost of maintenance on the various railway systems owing to the special circumstances of each line, but the figures call for investigation and we are not satisfied that the present scale of expenditure is essential to the efficient and safe working of the lines. It was represented to us by one of the Agents that a considerable portion of the expenditure on his Railway was for renewals which were in his opinion absolutely unnecessary and that 60 miles of line to be renewed in 1923-24 and a similar mileage in 1924-25 could easily be strengthened at about one-third of the cost to last a further 15 or 20 years. On the other hand the Chief Commissioner stated that the renewals were part of a programme framed with a view to avoiding the

necessity of having to renew an unduly large portion of the line in any one year which would mean a large financial outlay and considerable interference with traffic working. We consider that the control exercised by the Railway Board should ensure that adequate financial provision is made for renewals, and that it is not a proper function of the Board to insist on expenditure against the advice of the Manager and Engineer. In the particular instance quoted the additional expenditure involved would be borne by the State out of money raised at over 6 per cent. in order to avoid, 15 or 20 years hence, a possible delay to traffic which in the opinion of those responsible would never arise.

We ascertained that a considerable portion of the increased cost of maintenance of way, works and stations results from the present programme of capital expenditure on improvements to existing lines and works. We recognise that it is essential that revenue should bear its full share of all expenditure on improvements but we think that the present regulations governing the incidence of expenditure between capital and working expenses afford undue relief to capital; For example, in all cases of renewals the whole of the charges on account of freight of materials from depôt to site and for loading and unloading of materials, etc., is debited to revenue. When old girders are replaced and heavier girders substituted the whole cost of re-erection is debited to revenue. The charge to capital for renewals of locomotives is based upon the tractive effort calculated on an empirical formula, which makes no allowance for the additional tractive effort obtained by means of super-heaters.

We recommend therefore that the present regulations be reviewed and revised as may be necessary to ensure a more equitable distribution of the expenditure on maintenance of way and works and on rolling stock.

We are of opinion that in present financial circumstances renewals of permanent way on unremunerative lines should be limited to cases where the track is worn out and not capable of being strengthened to meet probable traffic requirements for a substantial period. The expenditure on the renewal of permanent way, bridges, etc., is charged against programme revenue with which we deal later.

13. *Locomotive Expenses : Rs. 23,07,63,000.*—The main items of expenditure under this head are :—

	Rs.
Fuel	9,23,65,000
Maintenance and Renewal of Locomotives	6,18,91,000
Running expenses	8,83,39,000

14. *Fuel.*—We have been supplied with the following statement showing the total quantity of fuel consumed in 1913-14 and estimated for 1922-23, the average cost per ton and the total cost at engine shed, etc., for all 5' 6" gauge and metre gauge railways respectively :—

	Quantity of Fuel consumed	Total cost at Engine Shed.	Average cost per ton.	Average consumption per Engine mile.	Total Engine mileage
	Tons.	Rs.	Rs.	lbs.	Miles.
All 5' 6" gauge Railways—					
1913-14	3,773,000	4,09,00,000	10 8	67 5	125,400,000
1922-23	5,175,000	8,02,00,000	16 6	83 0	140,100,000
Per cent. increase	37	110	54	21	12
All Metre Gauge Railways—					
1913-14	785,000	1,05,60,000	13 5	44 4	38,900,000
1922-23	974,000	2,29,92,000	23 7	52 7	40,400,000
Per cent. increase	24	118	76	19	4

We are informed that the average price paid for coal for the 5' 6" gauge railways in 1922-23 was greatly increased by the large quantity of coal imported to meet a shortage in Indian supplies due partly to the strike on the East Indian Railway. On the Great Indian Peninsula Railway the cost per ton of imported coal delivered at the engine shed in 1921-22 was Rs 52 75 per ton compared with Rs. 14 47 per ton for Indian coal. It is not proposed to import any railway coal in 1923-24.

The increase in the price of coal on the metre gauge railways is said to be largely due to the increase in sea freight for coal for the Burma Railways and to the diversion from sea to rail of coal for the South Indian Railway.

An examination of the present arrangements for controlling consumption would, we think, reveal possibilities of effecting economies. For example, we ascertained that it was not the practice on all railways to record the consumption of coal by each engine, although, without such records, there can be no effective check on waste due to losses of coal or excessive consumption by defective engines. The importance of keeping a close check of coal consumption will be realised when it is stated that the increased consumption per engine mile on the 5' 6" gauge railways has necessitated the provision of an additional 14.5 lbs. of coal per mile, or a total of 907,000 tons costing at the engine shed Rs. 1,50,00,000 and on the metre gauge railways an additional 8.3 lbs. per mile or a total of 149,000 tons costing Rs. 35,31,000.

We are informed that the increased consumption per engine mile may be attributed to:—

- (a) Reduction in the proportion of first class coals available.
- (b) Increased engine hours due to delays to locomotives consequent upon the defective condition of the wagon stock and other causes.
- (c) Deterioration in the condition of locomotives due to enforced delay in repairs during the war period and after.
- (d) Increase in the average tractive effort of locomotives.

We understand it would be a difficult matter to form any reliable estimate of the increased consumption due to each of the above causes. The reduction in the proportion of first class coals available for railway purposes may be unavoidable, but we ascertained that no effective steps are taken to ensure that railways, like the North-Western, whose supplies have to be hauled long distances, are provided with first class coal to the maximum extent possible, and that consequently there is considerable waste in haulage and wagon user.

With regard to (b) and (c) the increased coal consumption consequent upon the defective condition of rolling stock should be a diminishing factor. Large sums are being spent annually on the maintenance and renewal of locomotives and wagons and, in addition, the stock of vehicles has been increased to a greater extent than the volume of traffic handled.

The introduction of more powerful locomotives capable of hauling greater loads would undoubtedly account for a portion of the increase in the average consumption per engine mile. On the other hand, these large modern engines are generally fitted with super-heaters and other improvements which very materially reduce coal consumption, and their use should automatically effect a considerable reduction in the consumption of coal per 1,000 gross ton miles. The following particulars show for some railways the quantity of fuel consumed per 1,000 gross ton miles in 1921-22 compared with 1913-14:—

Railway.	Fuel consumed per 1,000 gross ton miles worked	
	1913-14	1921-22
	lbs.	lbs.
North-Western	184	219
Oudh and Rohilkhand	200	240
Bengal Nagpur	185	202
East Indian	140	164
Great Indian Peninsula	222	266

In view of all the circumstances we are of opinion that a considerable reduction in the expenditure on fuel should be possible in 1923-24 and we understand

that it is proposed to reduce the estimate to Rs 8,68,00,000, by an arbitrary cut of Rs. 1 crore on the demands made by the Agents included in the preliminary estimates for 1923-24.

Our attention was drawn to the fact that, in some cases, long term contracts for the supply of coal had been entered into at high prices, and we consider that it is open to question whether the placing of long term contracts is desirable.

15. *Maintenance and Renewal of Locomotives.*—The total stock of locomotives on the 10 principal railways has increased from 6,787 on the 31st March 1914 to 8,136 on the 31st March 1922, an increase of nearly 20 per cent., whereas the engine mileage during the same period has only increased by 5.2 per cent, and the maximum mileage run in any year subsequent to 1913-14 was only 7.8 per cent in excess of the mileage for that year, *vide* Appendices B and E. The cost of maintenance and renewals has increased from Rs 2,07,19,000 to Rs 6,13,91,000 or by nearly .00 per cent and the average cost of maintenance per locomotive in stock from Rs 3,053 to Rs. 7,607

The average cost of repairs and renewals to locomotives on a few typical railways in 1913-14 and estimated for 1922-23 is as follows:—

Railway.	AVERAGE COST OF REPAIRS AND RENEWALS OF LOCOMOTIVES.			AVERAGE MILES RUN PER LOCOMOTIVE	
	1913-14	1922-23	Increase per cent	1913-14	1921-22.
	Rs.	Rs			
North-Western	2,532	3,686	243	20,990	16,041
Oudh and Rohilkhand	2,743	6,753	146	26,120	21,260
Bengal Nagpur	3,608	5,620	56	28,025	23,285
East Indian	2,874	6,905	140	28,410	26,677
Great Indian Peninsula	3,779	9,854	160	23,794	20,412

This table shows that, although the average miles run per locomotive has considerably decreased since 1913-14, the average cost of repairs and renewals per engine in stock has largely increased except on the Bengal Nagpur Railway. We understand a considerable portion of the increased expenditure is due to the replacement of engines. We recognise that, in many cases, existing locomotives are not of the most up-to-date type, but it should, in our opinion, be possible to postpone the renewal of locomotives on many of the railways without adversely affecting traffic.

Particulars are given in Appendix C of the number of engines in use compared with the total stock. From this statement, as also from the mileage figures already given, it is evident that there is a considerable surplus stock which will not be required until traffic develops. Further locomotives are being ordered on capital account and, in addition, the introduction of train control should enable more effective use to be made of the available stock, and, as it is not anticipated that there will be any large development of traffic in 1923-24, we recommend that all renewals of locomotives on unremunerative lines should be postponed.

16. *Running expenses of Locomotives*—The expenditure under this heading is mainly salaries and wages. From an examination of the figures given in Appendices A, B, and E, it appears that the increase in running expenses on the various railways bears little relation to the increase in engine mileage or traffic handled, as will be gathered from the following figures for the North-Western and Bengal and Nagpur Railways:—

Percentage variation compared with 1913-14

Railways.	Running expenses, 1922-23 *	Engine mileage, 1921-22	Freight tonnage conveyed, 1921-22	Number of passengers conveyed, 1921-22
North-Western	+106.2	-3.4	-6.2	+20.9
Bengal Nagpur	+104.5	+26.3	+21.7	+23.2

* Particulars for 1921-22 are not available

These figures show that, although the Bengal Nagpur Railway is carrying a very much larger traffic than in 1913-14 and the North-Western is running less mileage and handling less tonnage, running expenses on the Bengal Nagpur have not increased to the same extent as on the North-Western.

The large increase in shunting miles (see Appendix E) in relation to the total freight train mileage and total engine mileage also appears to require investigation. We are informed that the increased shunting on certain lines is due to the large number of defective wagons but as previously stated this should be a diminishing factor and we are of opinion that considerable saving in shunting should be possible.

We consider that if energetic measures are taken to effect economies in the use of locomotives large reductions can be effected in running expenses in 1923-24.

17. *Carriage and Wagon Expenditure, Rs 9,09,12,000.*—Of the total expenditure shown under this heading Rs. 7,64,52,000 is for repairs and renewals of vehicles.

The average cost of repairs and renewals per vehicle in 1913-14 and estimated for 1922-23 for some of the principal railways is as follows :—

Railway.	Average cost of repairs and renewals per vehicle in stock		Per cent Increase
	1913-14	1922-23	
	Rs	Rs.	
North-Western	151	474	213
Oudh and Rohilkhand	121	291	142
Eastern Bengal	98	372	280
Bengal Nagpur	123	305	148
East Indian	106	227	114
Great Indian Peninsula	169	555	229
Bombay, Madra and Central India	121	591	388

Particulars of the stock of coaching and goods vehicles are given in Appendix B and of the traffic conveyed in Appendix D. These statements show that sufficient coaches have not been provided to meet the growing passenger traffic and this may account to some extent for the increased cost of repairs and renewals per vehicle. The present accounts, however, do not separate the expenditure on carriages and wagons, and it is consequently not possible to analyse the causes of the increase.

With regard to goods stock the maximum tonnage conveyed in any year subsequent to 1913-14 was only 8.8 per cent. in excess of the tonnage conveyed in that year whereas the stock of wagons has increased by 21 per cent. Further, large orders have been placed for additional goods vehicles in 1922-23 and additional orders are contemplated for 1923-24 although no great increase in traffic is anticipated. It would appear therefore that no difficulty is likely to be experienced if the renewal of wagons on unremunerative lines is curtailed until financial conditions improve. We deal further with this question under programme revenue expenditure. A considerable reduction in the cost of repairs per vehicle on all railways should result from the fall in prices and railways should be able to overtake arrears of repairs and still effect a reduction in the total expenditure.

18. *Traffic expenses, Rs. 9,64,03,000.*—The expenditure under this heading has increased for ten principal railways from Rs. 4,88,57,000 in 1913-14 to Rs. 9,64,03,000 required for 1922-23, an increase of 97.3 per cent. This expenditure must necessarily depend to a large extent on the volume of traffic handled but, from figures with which we have been supplied, it would appear that the staff employed on many railways has increased to a much greater

extent than is justified by the additional traffic now being carried. It was represented to us that the staff in all train operating departments was considerably increased towards the latter end of the war period and that it was difficult to make sudden reductions in numbers without effecting efficiency. On the other hand the Agent of the Great Indian Peninsula Railway stated that he had made large reductions in staff without experiencing any serious difficulty, and that, in his opinion, increased efficiency had resulted.

We are of opinion that the retention of a large surplus staff inevitably lowers efficiency, and that the staff ought to be reduced to the level necessary to meet current requirements.

19. *General Charges and Steam boat services, Rs. 4,49,05,000*—The main items of expenditure included under general charges are salaries and wages of management, police and telegraph staff. We are informed that considerable reductions are being effected in the headquarters staff of the Great Indian Peninsula Railway and we consider that the possibility of effecting similar reductions on other railways should be explored. The increase in expenditure under steam boat services is small and does not call for any special comment.

20. *Special and Miscellaneous Expenditure.*—The main items under this heading are contributions to the railway provident funds, which are not susceptible of reduction except by reduced staff, and the expenditure on compensation for goods lost or damaged. In 1913-14 the expenditure on compensation amounted to Rs. 25,79,000 whereas the budget provision in 1922-23 was Rs. 1,16,79,000, an increase of 352 per cent. We are informed that the principal reasons for the increase in compensation are (a) increased traffic, (b) increase in prices of commodities, (c) disturbed economic conditions of the country since the war resulting in higher cost of living combined with unemployment and increased lawlessness, (d) shortage of rolling stock resulting in delay in despatch and movement of goods and consequent increased opportunity for depreciation, (e) defective condition of rolling stock resulting in loss in transshipment and increased damage to consignments requiring protection from weather, (f) dislocation of traffic consequent upon strikes and the inadequate general supervision owing to a temporary shortage of officers consequent upon the war.

All these causes are no doubt contributory factors but it will be observed from Appendix A that there are large variations in the percentage increase in expenditure on the different railways. For example, the expenditure on the Eastern Bengal Railway shews a decrease of 41 per cent. whereas on the Bombay, Baroda and Central India Railway the expenditure has increased by no less than 539 per cent.

We are of opinion that an investigation into the methods adopted by the Eastern Bengal Railway to reduce losses might indicate a considerable field for economy and that a general tightening up of control together with falling prices should enable considerable saving to be effected in 1923-24. We are informed that provision for compensation in the preliminary estimate for 1923-24 is Rs. 81,27,000 compared with Rs. 1,04,71,000 the revised estimate for 1922-23. We consider that a still further reduction under this heading should be possible.

21. *Accounts and Statistics.*—We are in entire accord with the views expressed in the Acworth Committee's report in regard to the accounts and statistics compiled on the Indian railways. We are informed that a special Committee has been appointed to investigate the statistical records kept by the railways in Great Britain and America and to submit proposals for introducing a revised schedule of statistics to be compiled by all railways in India on a standard basis. It is anticipated that their report will be available at an early date and we recommend that steps be taken to expedite the introduction of new returns. We also think that, pending the report of the Statistical Committee, steps should be taken to eliminate all records which, in the opinion of the Agents, serve no practical purpose.

With regard to Accounts, we understand that nothing has been done to give effect to the recommendations of the Acworth Committee that the

present form of Accounts should be reported on by experienced railway accountants conversant with modern practice in Great Britain and America. The basis of the present accounts is similar to that which obtained in Great Britain prior to 1913, when the whole system was revised to meet modern requirements. We consider that the matter should be investigated without further delay and in this connection we recommend that a complete summary balance sheet should be prepared and published annually showing the financial results of the railways in India as a whole on the lines of that published by the Ministry of Transport for British railways.

We are informed that the recommendation made by the Indian Railway Accounts Committee in January 1921 that the use of warrants and credit notes for Government traffic should be abolished or drastically curtailed is still under consideration. The Economy Committee on the East Indian Railway has also drawn attention to the desirability of simplifying the method of dealing with charges for Military traffic in order to lighten the work of station staff, and it is evident that the matter is one which calls for immediate attention.

We ascertained that no steps have been taken to give effect to one of the most important recommendations made by the Indian Railway Accounts Committee, *viz.*, that route and rate books should be supplied to each station. It is stated by the Chief Commissioner that "it is possible that the ideal aimed at by the Committee will be difficult to attain as both rates and routes are subject to local conditions and to changes at frequent intervals." The difficulties to which reference is made exist also in America and in England and we are informed by the Auditor General that, in his view and in that of the Railway Accounts Committee, it is quite practicable to prepare rate and route books in India and that the introduction of such books would be a source of economy as it would enable the present elaborate system of traffic audit to be radically simplified. Another important recommendation made by the Accounts Committee was that the receipts on through traffic should be divided on the totals of the monthly abstracts, the division between railways being made on a mileage or decimal basis. This practice obtains on British and American railways and we see no reason why it should not be adopted on Indian railways. The Chief Commissioner has stated that the proposal is dependent upon the introduction of a system of uniform rates on all lines, but we cannot regard this difficulty as insuperable and it must have been well known to the Accounts Committee before they made their report. It is in our opinion desirable that the recommendations made by the Accounts Committee which have not yet been adopted should have the immediate attention of the Financial Adviser whose appointment has been proposed.

22. *Staff.*—We have been supplied with the following summary of the staff employed on the principal railways on the 1st April 1914, 1921 and 1922 :—

Railway.	ADMINISTRATIVE AND CLERICAL.			TECHNICAL AND INDUSTRIAL		
	1914.	1921.	1922.	1914.	1921.	1922.
North-Western	4,697	5,172	5,256	83,442	106,715	107,711
Oudh and Rohilkhand	1,905	2,080	2,103	35,541	32,817	39,951
Eastern Bengal	2,495	3,211	3,251	37,283	42,924	45,304
Bengal Napur	2,900	4,258	4,832	38,006	54,670	56,700
Great Indian Peninsula	3,543	4,712	4,791	Not available.	117,189	113,000
East Indian	4,728	5,797	5,947	70,550	97,907	99,527
Bombay, Baroda and Central India	3,008	3,910	3,871	44,777	55,648	55,731
Madras and Southern Mahratta	2,859	3,225	3,400	41,307	48,415	48,010
TOTAL	20,197	32,305	33,517	357,505	438,902*	453,030*

* Exclusive of staff on the Great Indian Peninsula Railway.

This table shows that since 1913-14 the total administrative and clerical staff has increased by 7,320 or by 28 per cent., and the technical and industrial staff by 118,460 or 33 per cent., the latter increase being partly due to additional staff being employed for work formerly carried out by contract

We are of opinion that there can be no justification for the large increase in administrative and clerical staff, and it is generally agreed that considerable reductions can be effected. The Agent of the Great Indian Peninsula Railway stated that as a result of an investigation he is making with a view to effecting economies he anticipated saving Rs. 50 lakhs in 1923-24 by reductions in staff or by economies consequent upon reductions in staff. Other Agents stated they were gradually effecting reductions, but we consider that in present financial circumstances the employment of staff in excess of requirements cannot be justified. We recommend that a further saving of at least Rs 1 crore should be effected in salaries and wages in 1923-24.

PROGRAMME EXPENDITURE ON REVENUE ACCOUNT.

23. Special provision has been made since 1916-17 for expenditure on renewals as apart from ordinary maintenance. The distinction drawn between ordinary repairs and renewals must, from the nature of the case, be purely arbitrary, since every replacement, however small, is in fact a renewal, and the expenditure on repairs and renewals is so closely inter-related that any real distinction is practically impossible.

The present regulations provide that in the case of rolling stock the expenditure chargeable to Programme Revenue is limited to the renewal of complete units, *i.e.*, a complete locomotive carriage or wagon. Locomotive boilers are also regarded as units for renewal purposes. It is evident that under these regulations a locomotive, carriage or wagon can be completely reconstructed at the cost of repairs provided that all the parts are not renewed at the same time. The life of the various parts of a locomotive varies enormously; the wheels and axles last much longer than the firebox or the cylinders, and, provided that the various components are renewed as required, the life of the engine as a whole is indeterminable. Boilers and other parts are interchangeable within limits and even the type of the engine may be completely altered in the ordinary course of repairs over a series of years.

We are informed that many of the leading locomotive engineers in Great Britain are strongly adverse to fixing any life for locomotives, and that, while it is the practice on many of the railways to make financial provision for renewals on an assumed life basis, it is not the practice to condemn either locomotives, carriages or wagons, merely because they have been in use for a specified period of years.

Similarly, in the case of bridges and permanent way, the life of even the same material varies enormously in different localities and depends upon traffic conditions and many other factors which cannot be readily determined.

24. The underlying principle of a Renewal Fund is to ensure that adequate financial provision is being made for depreciation and this is particularly necessary in the case of railways which are rapidly expanding. In such cases it is obvious that there is a great difference between (a) the financial provision which would be made against depreciation and (b) the amount which should be spent annually. For example, the number of broad gauge locomotives on the railways in India increased from 5,124 in 1913-14 to 6,261 in 1922-23 an increase of 1,137 engines. Assuming a theoretical life basis of, say, 35 years it would be necessary to make financial provision for the renewal of 32.5 more engines annually than in 1913-14, but it would not be necessary to renew 32 more engines annually merely because the stock had been increased.

25. We are forced to the conclusion that expenditure on repairs and renewals must be considered together, not only to ensure an effective control,

on expenditure, but also to allow the railways some latitude in regard to carrying out repairs rather than renewals. In our opinion undue importance is being attached to maintaining a high rate of programme revenue expenditure and there is serious danger that a hard and fast rule may lead to considerable waste by forcing the railways to renew permanent way or rolling stock which with judicious repairs could be made serviceable for many years to come.

As we have mentioned in paragraph 6, the capital programme of Rs. 150 crores for rehabilitation of the railways has been restricted to expenditure on capital improvements of open lines and cannot be utilised for overtaking arrears of repairs and renewals. The utilisation of this capital for the purpose of improving the facilities of the railways necessarily involves increased expenditure on renewals which is charged against working expenses. If, however, the funds available for working expenses are limited and considerable sums are utilised for renewals, it follows that repair work must be curtailed. To give one instance, it was represented to us that the bad conditions of the wagon stock was prejudicially affecting the economic working of the railways, and that, although large sums were being spent on renewals, there were insufficient funds available for the repair of wagon stock.

26 The growth of programme revenue expenditure since 1916-17, when it was decided to separate repairs and renewals, has been as follows :—

	Rs
1916-17	2,20,22,000
1917-18	1,44,53,000
1918-19	1,99,86,000
1919-20	3,59,43,000
1920-21	5,06,43,000
1921-22	7,62,26,000
1922-23	9,97,48,000
1923-24 proposed	12,50,00,000

We are informed that the small expenditure incurred in past years has been mainly due to the difficulty in obtaining supplies of materials and that there are now considerable arrears of renewals which it is desired to overtake as quickly as possible. We are not satisfied however, that there is any justification for an expenditure of Rs. 12,50,00,000 on renewals.

27. A Committee was recently appointed to investigate the amount of arrears of depreciation on each railway and, although their report is not yet complete, we have been supplied with preliminary figures showing the normal provision which they recommend should be made for renewals on each line and the estimated cost of overtaking arrears. The figures for expenditure which would fall under programme revenue are as follows :—

Railway.	Normal annual depreciation.	Total arrears of depreciation.
	Rs.	Rs.
North-Western	1,96,55,000	8,95,99,000
Oudh and Rohilkhand	48,82,000	1,13,62,000
Eastern Bengal	65,97,000	1,11,24,000
Bengal Nagpur	60,00,000	96,00,000
Great Indian Peninsula	1,02,82,000	2,13,98,000
East Indian	1,70,19,000	2,71,76,000
Bombay, Baroda and Central India	96,60,000	2,15,58,000
Madras and Southern Mahratta	61,29,000	1,61,79,000
South Indian	51,25,000	1,24,76,000
Burma	31,48,000	25,40,000
Other railways	34,21,000	1,27,11,000
Total	9,19,18,000	18,57,23,000

We have been unable to ascertain the basis on which the estimated normal depreciation has been calculated but it is probable that a life basis has been adopted and the figures will therefore represent the financial provision necessary to provide for depreciation and not the actual expenditure required annually which will be considerably less.

Assuming, however, that it is necessary to incur expenditure in 1923-24 up to the full annual provision, the following table shows the amounts which the Chief Commissioner has included in his preliminary budget for 1923-24 in excess of that provision :—

Railway	Proposed programme expenditure.	Normal depreciation	Excess
	Rs	Rs	Rs
North-Western	2,67,10,000	1,96,55,000	70,55,000
Oudh and Rohilkhand	76,07,000	48,82,000	27,25,000
Eastern Bengal	72,20,000	65,97,000	6,23,000
Bengal Nagpur	61,06,000	60,00,000	1,06,000
Great Indian Peninsula	1,43,64,000	1,02,82,000	40,82,000
East Indian	1,73,13,000	1,70,19,000	7,94,000
Bombay, Baroda and Central India	1,46,65,000	96,60,000	50,05,000
Madras and Southern Mahratta	1,39,99,000	61,29,000	78,70,000
South Indian	80,69,000	51,25,000	29,44,000
Burma	36,36,000	31,48,000	4,88,000
Other railways and unallocated expenditure	48,11,000	34,21,000	13,90,000
TOTAL	12,50,00,000	9,19,18,000	3,38,82,000

We have already recommended that, in present financial circumstances, expenditure for renewals on unremunerative lines should be limited to normal requirements, see paragraph 6. This would mean that no excess provision on the North-Western, Oudh and Rohilkhand, Eastern Bengal, Great Indian Peninsula and Madras and Southern Mahratta Railways would be granted, saving over Rs. 2½ crores.

28. The proposed allocation of programme expenditure in 1923-24 is shown in Appendix F, details of the expenditure on rolling stock and way, works and stations being given separately.

Locomotives—It will be observed that it is proposed in 1923-24 to replace by new engines no less than 405 locomotives in 1923-24, out of a total stock of 8,136, which is equivalent to renewing on a 20 years life basis. We regard this as excessive.

On the North-Western Railway the maximum engine mileage run in any year subsequent to 1913-14—this period including the Afghan War and continuing frontier operations—was only 5.2 per cent. in excess of the mileage run in 1913-14. In 1921-22, the engine mileage run was actually below the 1913-14 level and, as shown in Appendix C, the maximum number of engines in use was only 1,045 or 67 per cent. of the average stock of 1,561 compared with 74 per cent. in 1913-14. It is clear, therefore, that there is a large surplus stock of locomotives on the North-Western Railway and in addition we are informed that the present annual programme provides for a further increase in stock at the rate of 1 per cent. annually. It has been represented to us that the surplus stock is required partly as a margin for repairs and partly to meet mobilisation requirements but, in view of the facts stated, the maintenance of this large reserve of locomotives to meet mobilisation requirements can only be regarded as extravagant.

It is proposed to replace 70 locomotives in 1923-24, but in view of the large stock held it is evident that the replacement of these engines is not essential to

meet traffic requirements. We recommend therefore that no expenditure be incurred on renewals in 1923-24.

The Great Indian Peninsula Railway is proposing to replace 104 locomotives out of a total stock of 1,301, and as in the case of the North-Western Railway there would appear to be no justification for the renewal of such a large number of engines. The stock of locomotives has increased from 1,073 on the 31st March 1914 to 1,301 on the 31st March 1922 or by 21.3 per cent. whereas the maximum mileage run in any year subsequent to 1913-14 was only 10.7 per cent. in excess of the mileage run in that year (see Appendix E). The maximum number of engines in use in any one day in 1921-22 was only 947 and we recommend that the programme for renewals for 1923-24 be limited to actual commitments.

Carriage and wagon stock.—The provision for the renewal of coaching stock does not call for special comment, but with regard to freight stock the expenditure on the North-Western and Madras and Southern Mahratta Railways should, we think, be largely curtailed. The North-Western Railway proposes to renew 1,429 goods stock vehicles in 1923-24 representing renewal on the basis of a 21 years life compared with 34 years on the East Indian and 45 years on the Bengal-Nagpur Railways. The Madras and Southern Mahratta Railway proposes to renew 830 wagons costing Rs. 28,74,000 in 1923-24 representing renewals on the basis of a 15 years life.

Miscellaneous Vehicles—Of the total proposed provision of Rs. 40,78,000 for miscellaneous vehicles in 1923-24, no less than Rs. 20,36,000 has been allocated to the Madras and Southern Mahratta Railway and Rs. 7,85,000 to the Oudh and Rohilkhand Railway, leaving only Rs. 12,57,000 for miscellaneous vehicles on other railways in India. We think it is evident that the proposed provision for the two railways named is excessive and should be drastically curtailed.

Track renewals.—The programme for 1923-24 provides for expenditure of Rs. 5,51,00,000 on track renewals, the amount allocated to the more important lines being shown in the following table:—

Railway.	Total expenditure.	Track mileage.	Expenditure per mile of track.
	Rs.		Rs.
North-Western	1,16,30,000	6,788	1,718
Oudh and Rohilkhand	45,93,000	1,593	2,883
Eastern Bengal	34,79,000	2,525	1,377
Bengal-Nagpur	37,63,000	3,536	1,064
Great Indian Peninsula	23,75,000	4,689	506
East Indian	72,88,000	4,366	1,669
Bombay, Baroda and Central India	77,97,000	3,897	2,001
Madras and Southern Mahratta	49,91,000	3,258	1,532

We consider that the proposed expenditure of Rs. 1,16,00,000 on track renewals on the North-Western Railway, which is only earning 1.7 per cent. on its capital at charge, cannot be justified. It has been argued that the North-Western Railway is handicapped by having on its shoulders a number of strategic lines which cannot be expected to pay. It appears to us, however, that endeavour is being made to increase the capacity of this line by raising its standard of equipment, so that the heaviest type of engine can be employed to deal with a possible large increase in traffic. We ascertained from the Agent that, in his opinion, there was little prospect of the Railway being able to earn sufficient revenue to yield 5 per cent. on the capital at charge, and, in these circumstances, it appears to us that the economy to be effected by the use of large engines is not likely to be sufficient to justify the heavy expenditure which is apparently necessary to bring the line up to the required standard.

The expenditure on the Oudh and Rohilkhand Railway of Rs 2,883 per mile, which is 44 per cent. in excess of any other line, cannot, we think, be justified. The figures for the Great Indian Peninsula Railway indicate the reduction, which can be effected in expenditure by adopting the policy of limiting renewals of track to sections of lines that are completely worn out. We consider that this policy should be adopted on all unremunerative lines and that expenditure on the North-Western, Oudh and Rohilkhand, Eastern Bengal and Madras and Southern Mahratta Railways should be drastically curtailed.

Other works—The proposed provision of Rs 1,32,61,000 for other works is mainly for improvements on the Great Indian Peninsula, South Indian and North-Western Railways. We consider that the total provision under this head for 1923-24 should be limited to Rs. 1 crore.

In this connection we have been supplied with details of the more important station remodelling schemes for which provision is being made in 1923-24 (see Appendix G). It will be seen that it is proposed to provide Rs 52 lakhs as a first instalment for remodelling Grant Road Station on the Bombay, Baroda and Central India Railway. The total cost of this station is estimated at Rs. 3½ crores. It is also proposed to remodel the Victoria Terminus on the Great Indian Peninsula Railway at a cost of Rs. 69 lakhs. The bulk of the remodelling expenditure is on capital account, but in view of the very large amounts involved we consider that the possibility of remodelling these stations on a smaller scale, which could ultimately be enlarged to meet growing requirements, should be considered.

29. *Summary*.—The Committee on Depreciation estimated that the financial provision required for normal annual depreciation would be Rs. 9,19,18,000. On this basis the actual annual expenditure at the present time would probably not exceed Rs. 8 crores, irrespective of any expenditure to overtake arrears. We understand that the Finance Department, while acquiescing in the allocation to railways of provision for programme revenue expenditure to the extent of Rs. 12½ crores, have assumed that it will not be practicable to spend the full amount during the financial year and have made a lump reduction of Rs. 1 crore on account of the probable "lag". As a result of our consideration we are of opinion that the budget provision for programme revenue expenditure in 1923-24 should be limited to Rs. 9 crores and that the Agents of individual railways should be empowered to utilize the amounts allocated to their railways at their discretion, for either additional repairs or renewals, which, as we have already pointed out, are very closely inter-related.

ESTIMATED FINANCIAL RESULTS FOR 1923-24.

30. With the reduction of Rs. 3½ crores which we propose in the preliminary estimates for 1923-24 the provision for working expenses, including surplus profits, will stand at Rs. 64 crores on the basis of an assumed revenue of Rs. 95½ crores. The following statement compares the estimates for 1923-24 under our proposals with the budget and revised estimates for 1922-23 and the preliminary estimate for 1923-24:—

Year	Receipts.	Working expenses including surplus profits	Net receipts.
	Rs	Rs.	Rs
1922-23 { Budget	99,57,26,000	68,59,00,000	30,98,26,000
{ Revised	92,07,26,000	67,51,92,000	24,56,34,000
1923-24 { Preliminary estimate	95,57,21,000	67,50,27,000	28,06,97,000
{ Proposed	95,57,24,000	64,00,00,000	31,57,24,000

The estimated revenue for 1923-24 is 4 per cent. less than the budget estimate for 1922-23 and, assuming a proportionate reduction in working

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expenses, the amount required for 1923-24 would be Rs. 65,85,00,000, or Rs. 274 lakhs less than the budget estimate for 1922-23 and Rs. 165 lakhs less than the preliminary estimate for 1923-24. The provision of Rs. 64 crores which we recommend represents a reduction of over Rs. 4½ crores on the budget estimate for 1922-23. We have also recommended investigation in various directions, which, if energetically followed up, should result in further large savings and, when it is borne in mind that there should automatically have been a reduction of Rs. 274 lakhs, apart from the savings due to the fall in prices of materials, we think it will be generally agreed that it should be possible to effect much greater reductions in the near future, subject, of course, to any allowance which may be necessary to cope with increased traffic.

PROGRAMME OF FUTURE CAPITAL EXPENDITURE.

31. We have already referred to the Capital programme of Rs. 150 crores authorised for the rehabilitation of the railways during the 5 years ending with 1926-27. We are informed that this amount was allocated among the railways as follows although some slight modification has since been effected :—

Railway.	Allocation proposed.
	Rs.
North-Western	17,53,00,000
Oudh and Rohilkhand	6,50,00,000
Eastern Bengal	6,50,00,000
Bengal Nagpur	16,00,00,000
Great Indian Peninsula	20,83,00,000
East Indian	23,46,00,000
Bombay, Baroda and Central India	16,13,00,000
Madras and Southern Mahratta	10,00,00,000
South Indian	9,00,00,000
Burma	4,00,00,000
Other Railways	5,56,00,000
Lines under construction and unallocated	14,49,00,000
TOTAL	1,50,00,00,000

A very substantial proportion of this capital has been allocated to unremunerative lines as appears from the following statement :—

Railway.	Proposed allocation.	LOSS ON WORKING AFTER PAYING INTEREST AND SINKING FUND CHARGES.	
		1922-23, Revised estimate	1923-24, Preliminary estimate.
	Rs.	Rs.	Rs.
North-Western	17,53,00,000	2,53,98,000	1,96,95,000
Oudh and Rohilkhand	6,50,00,000	24,72,000	10,25,000
Eastern Bengal	6,50,00,000	61,95,000	58,72,000
Great Indian Peninsula	20,83,00,000	59,40,000	62,28,000
Madras and Southern Mahratta	10,00,00,000	3,41,000	79,84,000
Other Railways	5,56,00,000	10,12,000	68,35,000
TOTAL	66,92,00,000	4,43,58,000	4,96,39,000

We are informed that there are many remunerative schemes such as the opening up of lines for the development of mineral resources, the electrification of

suburban lines, etc, which at present cannot be taken up owing to the difficulty of obtaining capital. This being so, we cannot believe that it is legitimate under any circumstances to put Rs. 67 crores of capital, borrowed at a high rate of interest, into lines which are already a very heavy drain on the resources of the State and we recommend that, except in case of commitments already entered upon, no further capital expenditure be incurred on these lines until the whole position has been examined by the Financial Adviser and reviewed by the Government. If the full amount of the capital cannot immediately be employed on remunerative works on open lines it would, in our opinion, be a matter for consideration whether some portion of it could not with advantage be devoted to the construction of new lines promising an adequate return.

STORES.

32 We have been furnished with the following particulars showing, for the 10 principal railways, the value of the stores purchased and issued during the years 1913-14 and 1921-22 and the stock on hand at end of each of these years.—

Railway	Opening balance	Purchases during year.	Issues during year	Stock on hand at end of year
	Rs	Rs	Rs	Rs
Bengal-Nagpur	{ 1913-14 1921-22	{ 78,23,000 1,32,67,000	{ 2,20,56,000 6,13,51,000	{ 1,84,77,000 6,17,99,000
Bombay, Baroda and Central India	{ 1913-14 1921-22	{ 1,10,04,000 1,19,43,000	{ 3,95,00,000 8,43,62,000	{ 3,98,30,000 7,16,65,000
Burma	{ 1913-14 1921-22	{ 54,12,000 60,47,000	{ 69,91,000 1,59,99,000	{ 69,35,000 1,46,06,000
Eastern Bengal	{ 1913-14 1921-22	{ 1,27,56,000 1,78,78,000	{ 2,09,71,000 2,95,16,000	{ 2,34,12,000 2,48,24,000
East Indian	{ 1913-14 1921-22	{ 98,47,000 2,41,09,000	{ 4,06,15,000 7,66,68,000	{ 3,77,54,000 6,69,50,000
Great Indian Peninsula	{ 1913-14 1921-22	{ 1,59,07,000 3,73,72,000	{ 4,35,17,000 8,18,18,000	{ 4,11,54,000 7,75,35,000
Madras and Southern Mahratta	{ 1913-14 1921-22	{ 88,04,000 1,06,15,000	{ 2,00,52,000 4,04,67,000	{ 1,86,36,000 3,50,75,000
North-Western	{ 1913-14 1921-22	{ 2,71,48,000 3,56,18,000	{ 6,44,55,000 8,33,84,000	{ 5,04,53,000 7,67,36,000
Oudh and Rohilkhand	{ 1913-14 1921-22	{ 43,72,000 43,77,000	{ 1,96,49,000 2,19,76,000	{ 1,24,40,000 1,32,10,000
South Indian	{ 1913-14 1921-22	{ 53,83,000 72,42,000	{ 1,75,21,000 3,20,50,000	{ 1,58,59,000 2,80,57,000
TOTAL	{ 1913-14 1921-22	{ 10,78,56,000 16,85,90,000	{ 23,93,21,000 53,14,89,000	{ 27,49,47,000 47,84,57,000

We are informed that the total amount of capital locked up in suspense account at the end of 1921-22 amounted to over Rs. 34 crores, and that, for some railways, the figures shown in the foregoing table represent the total value of certain specified stores and not the total value of all stores held. It is stated that the book value of many items is considerably above their present market price, in some cases by as much as 50 per cent.

We understand that the stocks of stores held on March 31st, 1922, were swollen by large arrivals of indents in the closing months of 1921-22, too late for issue before the end of the financial year and also by the strike on the East Indian Railway, which resulted in delay in the carrying out of works. We consider, however, that, allowing for this, the stocks of stores held are on an extravagant scale and we recommend that steps be taken by a careful scrutiny of indents to effect an early and very substantial reduction.

GENERAL.

33. The Chief Commissioner is responsible under the Government of India for arriving at decisions on technical questions and he is solely responsible for advising the Government of India in matters of railway policy. Considering the enormous stake which the Government of India have in the railways and the financial relations which exist between the Government and the railways we think it essential that there should be an officer of the Government of India to protect the interests of the State, to consider schemes for development and to sanction capital expenditure. We consider it very important, however, that his functions should be closely and clearly defined. The Agents, as they are now called, should in our opinion become General Managers, should be made responsible for the administration, working and financial results of their railways and should be free to conduct their undertakings on a commercial basis. The Chief Commissioner and his organisation should hold inquiries in the case of serious accidents in the same way as the Board of Trade does in Great Britain, they should see that the lives of the public are fully safeguarded, that proposed capital expenditure is fully justified as a commercial proposition before being sanctioned, that the construction of engineering works and rolling stock conforms to recognised standards and that rates and fares are fixed at a level necessary to ensure that, with economic working, an adequate return is obtained on the large capital invested by the State in railways.

34. The receipts and working expenses of the railways amount together to more than Rs. 150 crores per annum and the magnitude of the financial interests of the State involved in these transactions make it, in our opinion, essential that an experienced Financial Adviser should be associated with the Chief Commissioner. It is clear that such association is urgently required in order to ensure that financial considerations are given their due weight in the exercise by the Chief Commissioner of his proper functions. There are also many other technical matters such as the financial provision to be made for renewals of permanent way, bridges, rolling stock, etc., and the incidence of expenditure as between capital and revenue which can best be dealt with by a financial expert.

35. We consider that each railway should compile and forward monthly statistical and financial returns shewing its working results. These results should be summarised and scrutinised in the Chief Commissioner's office, and in this way the working of all the railways in India would be focussed for the information of the Member of Council in charge of the railways, the Chief Commissioner and the Financial Adviser. The summarised results should be communicated to the General Managers, which is not now done, so that each Manager will be able to compare the results of his working with that of other railways. In this way, by working in close touch with the Managers, the Hon'ble Member in charge of the railways and the Chief Commissioner should be in a position, while safeguarding the interests of the State, to indicate the directions in which improvements in working might be effected from the point of view of economy or public convenience. This was the procedure intended when the Railway Board was formed in 1908, as set out in the following statement :—

“The conception of a Railway Board is not new; it has been advocated and considered on various occasions for many years past. Its central idea is that there should be a body of practical business men entrusted with full authority to manage the railways of India on commercial principles, and freed from all non-essential restrictions, or needlessly inelastic rules.

“There are two distinct classes of duties with which the new authority will have to deal. The first is deliberative, and includes the preparation of the railway programme and the greater questions of railway policy and finance affecting all lines. The ultimate decision on such questions must of necessity rest with the Government of India.

“The second class of duties is administrative, and includes such matters as the construction of new lines by State Agency, the carrying out of new works

on open lines, the improvement of railway management with regard both to economy and public convenience, the arrangements for through traffic, and the settlement of disputes between railways."

36. This conception of the functions of the Railway Board fell into disuse and detailed control of the railways passed into the hands of a Board stationed at Calcutta and Simla and latterly at Delhi and Simla and the Agents found themselves more or less paralysed. As stated in the Acworth Committee's report, many references on trivial questions have to be referred by the Agents of the railways to Delhi, involving a great amount of correspondence and delay. We are told that in almost every case the result is approval of the Agents' proposals. We agree that this excessive centralisation is wrong. The General Manager of a great railway should not have to refer minor matters connected with the working of his railway to a centralised headquarters in Delhi or Simla, but should be empowered to give decisions and be free to attend to the working of his line. His management should be judged by results and, if it is unsuccessful apart from fortuitous circumstances over which he has had no control, he should be relieved of his duties. We think the question of the salaries of General Managers might with advantage be considered. They are paid very much less than General Managers of railways in Great Britain and it is most important that the very best type of man should be secured by giving him adequate remuneration. It might be objected that in this way the General Manager of a railway would possibly be more highly paid than the Commissioner or Chairman of the Railway Board but the General Managers of railways in England are much more highly paid than the Chairmen of the Boards of Directors and there is no reason why the same system should not be adopted in India. At present, certain restrictions are placed on the salaries of the Managers of railways in India by laying it down that they must not receive more than certain other highly placed officials but in commercial undertakings, such as railways, we are satisfied this is a mistake and the rule should be abrogated.

37. We are convinced that, in a country like India with her vast territory and differing peoples and circumstances, it is an impossibility to control the details of all the railways from Delhi or Simla as at present. Decentralisation is in our opinion essential if the railways in India are to be developed on economic lines. It is generally agreed that large economies could be effected by grouping the railways on the lines recently adopted in Great Britain and we recommend that the preparation of a scheme be taken up forthwith. We consider the existing systems could well be amalgamated into, say, five groups but, although certain lines would appear to fall naturally into the same group, some time and study may be necessary to evolve the most suitable and economic scheme.

38. We have discussed this report with the Chief Commissioner of Railways who accepts the conclusion of the Committee that in the present circumstances reductions in the Railway Budget are unavoidable. Naturally he may find it convenient in working up to them to make certain alterations in the method of arriving at them and this we quite realise. He is in general agreement with many of our recommendations although he must give careful consideration to the means of effecting them.

The Chief Commissioner was good enough to say that he considers the report extremely valuable.

CONCLUSIONS.

Having reviewed the expenditure on the railways we recommend that:—

- (1) steps be taken to curtail working expenses as necessary to ensure that, under normal conditions, an average return of at least 5½ per cent. is obtained on the capital invested by the State in railways;

- (2) the present system of programme revenue expenditure be abolished, and that adequate financial provision be made annually by each railway for the maintenance and renewal of permanent way and rolling stock in the manner indicated in paragraph 7;
- (3) the agents of railways be designated General Managers and made responsible for the administration, working and financial results of their railways;
- (4) a Financial Adviser be immediately appointed to ensure that financial considerations are given their due weight before expenditure is incurred;
- (5) the preparation of a scheme of grouping the railways be taken up forthwith; and
- (6) the budget provision for working expenses, including surplus profits, in 1923-24 be limited to Rs. 64 crores, subject to a further allowance to meet any increase in traffic, a reduction of Rs. 4,59,00,000 on the budget estimate for 1922-23, and of Rs. 3,50,00,000 on the preliminary estimate proposed for 1923-24.

Details of the expenditure on the Pr

Abstract	N. W.			E. B.			O and R			G. I. & P.	
	1913-14	1922-23	Percentage of increase	1913-14	1922-23	Percentage of increase	1913-14	1922-23	Percentage of increase	1913-14	1922-23
A											
MAINTENANCE OF WAY, WORKS AND STATIONS											
I General superintendence	17,68	31,00	72.4	6,86	14,81	115.9	5,40	9,65	78.7	13,95	20,20
II Maintenance and renewals of permanent-way	54,84	1,84,65	236.7	19,16	60,02	161.1	16,39	52,61	221.0	70,94	2,04,49
III Repairs of bridges, etc	12,22	30,90	152.8	6,87	19,83	188.2	2,13	5,62	163.9	24,53	86,40
IV Conservancy of rivers	79	1,16	46.8	5	55	1,000.0	30	40	33.3	83.3	29,10
V Repairs of stations and buildings	15,80	32,40	105.1	10,33	14,43	39.6	2,69	5,66	110.4	17,97	29,10
VI New minor works	1,04	2,50	140.4	54	1,14	111.1	40	40	44	44	8,80
VII Unclassified expenditure	16,76	16,87	6	3,68	4,32	17.4	2,66	3,14	16.1	3,58	9,80
Value of stores returned to stock	...	...	...	...	...	...	...	...	...	...	...
Less worked lines	-17,54	-23,81	...	-1,06	-1,90	...	-60	-96	...	-2,25	-11,20
Total	1,01,89	2,75,67	170.5	46,43	1,08,20	122.2	29,37	76,52	160.6	1,34,16	2,94,66
B											
LOCOMOTIVE EXPENSES											
I General superintendence	9,65	17,20	78.2	3,08	7,85	156.5	2,59	4,19	61.8	9,84	19,40
II Running Expenses	29,15	60,11	108.2	10,31	17,95	64.5	5,93	11,00	86.5	39,96	88,20
III Fuel	1,05,16	2,43,70	131.1	19,84	33,25	92.8	12,63	28,30	124.0	1,00,06	1,63,20
IV Water (including wages and stores)	4,43	10,00	129.2	1,96	1,72	126.5	68	1,20	76.5	3,32	8,80
V Oil, tallow and other stores (expended on engines in work)	4,17	11,00	163.8	1,97	3,69	120.9	1,05	1,60	52.4	4,84	6,80
VI Maintenance and renewals of locomotive engines	31,75	1,37,67	333.6	11,09	22,30	106.5	7,67	19,71	160.4	40,56	1,28,20
VII Maintenance and renewals of motor cars	14	40	185.7	9	39	333.3	3	5	66.6	5	15,00
VIII Maintenance and renewals of machinery, tools and plant	4,54	10,00	120.3	1,20	3,97	251.3	92	2,25	144.6	3,04	15,00
IX New minor works	3	5	66.6	1	1	100.0	1	2	100.0	1	1,00
X Payments to other lines	...	...	...	...	...	...	...	...	...	...	...
XI Unclassified expenditure	23,42	28,09	11.1	5,15	7,23	40.9	5,63	6,70	21.1	17,33	45,40
Value of stores returned to stock	...	...	...	...	...	...	...	...	...	...	...
Less worked lines	-22,06	-29,66	...	-1,15	-1,85	...	-76	-1,12	...	-3,62	-14,50
Total	1,95,42	4,87,96	149.7	53,15	1,02,14	92.2	36,18	73,80	104.2	2,15,67	4,67,30
C											
CARRIAGE AND WAGON EXPENSES											
I General superintendence	4,16	7,60	82.7	1,69	4,13	143.8	1,17	1,90	62.4	3,54	9,10
II Repairs and renewals of vehicles	42,43	1,67,79	271.8	12,85	69,33	382.9	9,95	28,06	182.0	32,43	1,19,80
III Repairs and renewals of machinery, tools and plant	1,13	5,84	416.8	23	2,00	769.6	68	70	20.7	83	4,10
IV Cleaning carriages and wagons and oiling	6,62	17,35	208.7	1,98	5,45	178.0	1,39	2,35	69.0	5,36	20,00
V New minor works	...	5	...	1	2	100.0	1	2	100.0	1	1,00
VI Unclassified expenditure	68	1,00	47.1	16	74	362.5	16	6	62.5	42	77
Value of stores returned to stock	...	...	...	...	...	...	...	...	...	...	...
Less worked lines	-6,74	-9,03	...	-23	-75	...	-28	-56	...	-70	-4,60
Total	47,38	1,80,67	281.9	16,70	71,20	326.4	18,00	32,58	150.2	42,94	1,49,43
D											
TRAFFIC EXPENSES											
I Salaries, wages, etc	79,41	1,42,88	79.9	33,94	73,17	87.9	18,32	39,21	114.0	61,21	1,20,30
II Fuel, lighting, water and general stores	18,80	24,40	76.8	5,92	11,25	90.0	2,99	5,79	93.7	11,54	22,30
III Clothing	2,09	4,46	304.8	79	2,03	155.7	61	20	67.2	1,21	2,70
IV Printing, stationery and tickets	2,90	4,00	87.9	1,34	3,15	71.2	92	1,70	84.8	3,19	5,00
V Charges for delivery and collection of goods	7	21	200.0	7	6	14.3	8	6	25.0	13	10
VI Miscellaneous expenses	5	3	40.0	16	8	50.0	...	39	...	16	27
VII Payments to other lines	2,27	1,57	30.8	31	14	54.9	1,20	1,00	16.6	1,95	20
VIII Unclassified expenditure	79	50	38.7	31	16	48.4	9	7	22.2	10	16
Value of stores returned to stock	...	...	...	...	...	...	...	...	...	...	...
Less worked lines	-3,58	-11,50	...	-1,16	-1,86	...	-49	-84	...	-1,80	-4,60
Total	92,80	1,70,55	89.9	47,18	82,17	86.9	23,72	47,58	100.6	77,49	1,46,96
E											
GENERAL CHARGES											
I General Administration	1,67	60	84.1	96	20	47.4	32	20	37.5	3,55	7,30
II Salaries of Indian management	19,86	36,43	88.3	11,30	24,40	115.9	6,44	11,91	84.9	15,84	34,70
III Police	2,88	7,00	161.2	91	1,60	64.8	68	1,20	128.4	2,85	662
IV Advertising (all advertisements of all departments)	41	19	58.6	11	30	172.7	6	10	66.6	12	10
V Electric telegraph	10,23	15,00	46.6	3,99	5,80	46.4	2,31	3,68	27.4	9,61	19,60
VI Indian charges on stores	...	7,55	...	...	1,50	...	...	65	...	7,85	80
VII Unclassified expenditure	7,52	2,00	78.4	6	60	900.0	5	13	140.0	23	30
Value of stores returned to stock	...	...	...	...	...	...	...	...	...	...	...
Less worked lines	-4,90	-6,57	...	-20	-60	...	-21	-32	...	-54	-2,47
Total	88,97	62,20	68.2	16,66	33,70	103.5	10,00	17,44	74.4	31,96	72,60

days in 1913-14 and as estimated for 1922-23.

B. N.	E. I.			B. B. and C. I.			M. and S. M.			S. I.			BURMA.				
	1922-23	Percentage of increase	1913-14	1922-23	Percentage of increase	1913-14	1922-23	Percentage of increase	1913-14	1922-23	Percentage of increase	1913-14	1922-23	Percentage of increase	1913-14	1922-23	Percentage of increase
9	18,55	106.3	13,55	26,16	93.0	9.59	20,60	114.8	7.90	18,86	69.1	5.89	12,07	104.9	5.54	9.62	73.6
9	84,99	186.4	42,64	1,22,90	136.9	39.80	75,55	89.8	80,63	63,16	106.2	23,19	70,05	202.0	18,32	31,25	70.6
11	8,25	17.7	5,06	29,00	412.4	11,79	18,42	18.8	7,64	15,34	100.8	3,63	13,99	285.4	3,24	8,38	158.6
1	12,72	56.8	14,77	27,00	82.8	7,04	24,61	249.6	5,10	11,21	116.8	4,27	11,51	169.5	6,14	5,47	75.0
6	66	17.9	1,54	1,48	-1.0	40	25	-37.5	58	87	60.0	23	38	65.2	24	39	-10.9
5	4,88	96.8	8,82	9,14	9.9	3,73	5,83	56.3	62	8,00	1,190.3	1,94	2,85	46.9	2,52	...	62.5
9	...	...	-1,41	-2,21	...	-40	...	...	...	...	...	-2,52	-11,60	...	...	...	...
9	...	...	...	...	...	-3,72	-6,06	...	...	...	...	...	...	...	...	-9.1	...
5	99,45	222.8	84,97	2,18,47	151.2	68,23	1,34,21	96.7	50,65	1,08,66	114.5	38,63	92,25	170.9	36,04	54,24	50.5
8	10,40	106.8	11,27	21,72	92.7	7,04	15,76	123.8	5,29	10,04	89.8	3,34	6,46	93.4	3,67	6,24	70.0
9	82,49	104.5	81,58	80,64	93.0	24,28	49,70	104.7	16,63	28,87	78.6	11,84	23,17	95.7	9,75	16,19	66.0
4	28,00	102.8	18,61	56,60	208.8	60,19	1,54,00	155.8	41,64	70,80	70.0	80,85	91,50	186.6	17,21	50,00	190.5
8	3,34	67.6	2,36	4,90	107.6	3,73	8,16	118.9	2,10	5,45	169.5	1,23	2,45	99.2	1,21	1,68	38.8
8	8,04	87.0	7,37	19,28	161.3	4,49	11,44	154.7	1,45	3,00	106.9	1,47	3,80	158.5	55	1,18	38.3
4	84,79	139.8	82,85	89,77	175.0	25,65	94,55	268.6	20,13	43,69	117.0	16,85	32,28	97.1	6,91	15,40	122.8
1	8	700.0	14	20	42.9	11	27	145.4	5	4	-20.0	7	3	-57.1	8	12	300.0
9	5,01	279.5	3,95	5,70	44.3	3,13	8,20	161.9	2,34	8,75	273.9	1,45	2,80	93.1	56	87	55.3
2	2	...	18	26	58.9	2	10	400.0	1	4	800.0	5	10	...	...	1	...
5	17,68	51.3	19,80	26,50	41.0	10,17	16,41	61.3	3,97	18,50	121.0	2,19	3,87	76.7	2,38	2,20	-7.5
5	...	...	-76	-3,74	...	-4	...	...	...	...	...	...	...	...	...	...	...
5	...	...	...	...	...	-7,21	-15,74	...	-3,34	-5,57	...	-4,31	16,42	...	...	...	...
9	1,83,84	110.1	1,36,14	2,81,75	128.4	1,31,66	3,42,85	160.6	94,67	1,83,61	93.9	64,63	1,50,03	132.1	42,57	93,89	120.5
1	3,30	148.1	2,86	6,61	131.1	2,93	6,36	117.0	1,86	3,17	70.4	1,11	2,15	93.7	1,42	2,41	69.7
1	64,83	270.3	81,80	91,84	189.8	24,96	1,25,44	402.5	19,97	51,95	157.1	20,11	28,75	42.9	11,50	87,07	222.3
1	1,47	890.0	1,01	8,69	265.3	1,12	3,69	220.3	41	1,91	365.8	45	93	106.6	25	60	140.0
1	9,16	192.7	3,13	14,30	366.9	3,32	9,87	197.9	1,89	4,92	180.8	1,98	5,30	170.4	1,21	1,64	35.5
1	5	160.0	5	4	-20.0	6	7	16.6	...	4	...	1	7	60.0	1	1	...
1	5	-16.6	49	3,23	567.0	30	30	...	-10	5,33	5,430.0	9	14	55.5	13	...	...
1	...	...	-16	-3,43	...	...	...	...	-61	-1,96	...	...	...	...	...	...	...
1	...	...	...	...	...	-1,71	-6,47	...	...	...	...	-1,21	-3,71	...	...	...	...
1	78,88	261.8	39,19	1,17,28	169.2	30,98	1,39,16	349.1	33,22	64,76	178.8	22,53	33,63	49.3	14,52	41,73	187.3
1	60,08	130.1	71,12	1,32,83	86.6	41,36	1,05,44	154.9	24,97	43,13	73.4	17,59	34,09	93.3	15,58	26,91	72.9
1	7,70	106.0	12,54	23,65	88.6	8,79	19,76	124.8	3,60	6,66	85.0	2,91	6,73	131.3	9,15	3,23	48.8
1	1,40	211.1	1,16	3,50	201.7	1,05	3,50	233.3	59	1,10	96.4	15	47	213.3	37	78	110.8
1	1,75	63.6	3,28	7,00	113.4	2,95	11,60	293.2	1,74	4,00	129.9	1,50	3,01	100.6	1,05	6	157.1
1	12	200.0	95	1,00	5.3	...	...	...	10	17	70.0	...	...	...	...	...	...
1	10	11.1	27	70	85.2	12	15	25.0	21	28	33.3	11	10	-9.09	2	17	750.0
1	3,40	43.6	1,33	2,00	50.4	88	2,75	212.5	41	66	61.0	27	60	122.2	...	...	...
1	5	35.0	20	20	...	4	3	-25.0	24	20	-16.6	2	...	...	14	...	...
1	...	...	-3	-17	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	...	...	...	-3,87	-6,47	...	-1,09	-1,64	...	-1,40	-4,45	...	...	...	...
1	74,30	123.5	90,89	1,70,50	87.7	52,31	1,33,76	161.4	30,87	54,56	78.5	21,15	40,57	91.8	19,35	33,76	74.5
1	6,07	39.5	4,94	5,73	15.8	4,12	5,38	54.8	3,61	3,93	8.9	3,21	5,04	57.0	2,68	3,73	41.4
1	19,99	115.2	16,23	29,91	84.3	13,67	30,53	123.3	9,26	15,66	60.4	7,23	12,84	77.8	6,40	11,43	76.9
1	3,20	44.7	3,70	6,57	77.6	3,67	6,00	64.8	3,03	4,32	42.8	1,98	2,63	35.4	1,41	1,95	38.3
1	20	33.3	16	55	243.3	12	10	-16.6	4	14	250.0	6	...	...	7	5	-28.5
1	10,92	120.2	9,54	17,37	83.1	6,89	14,73	113.3	5,40	10,87	101.3	3,09	4,67	51.1	2,51	4,43	57.6
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	39,54	100.5	34,96	60,48	73.0	26,97	56,13	108.1	21,27	36,05	69.5	14,31	23,23	56.8	13,48	21,65	60.6

Details of expenditure on the Pr...

Abstract	N. W.			E. B.			O and R.			G. I. L.	
	1913-14	1922-23	Percentage of increase.	1913-14	1922-23	Percentage of increase	1913-14	1922-23	Percentage of increase	1913-14	1922-23
F											
STEAM BOAT SERVICE											
I Working vessels	21	98	366 6	7,46	3,42	-54.1	...	...	...	...	...
II Repairs and renewals	3	22	638 3	1,73	3,23	90.2	...	...	...	...	...
III Fuel	6	43	616 6	93	90	-3.2	...	...	...	...	...
IV Miscellaneous stores	3	12	300 0	53	49	-11.0	...	...	...	...	...
V Steam Traffic agencies	...	...	...	...	...	...	...	...	...	...	...
VI New minor works	...	...	...	...	...	...	...	...	...	...	...
VII Miscellaneous expenditure	6	11	83 3	...	1	...	...	...	...	...	...
Value of stores returned to stock	...	12	...	48	...	...	...	...	...	...	...
Less worked lines	...	...	...	...	...	...	...	...	...	...	...
Total	89	1,98	407 7	11,18	8,50	-23.9	...	...	...	...	...
G											
SPECIAL AND MISCELLANEOUS EXPENDITURE											
I Law charges	8	8	...	21	20	-4.8	8	10	233.3	85	59
II Compensation	6,66	20,00	200.3	3,44	2,00	-41.8	93	2,50	168.8	4,99	24,78
III Rates and taxes (including municipal water rates)	1,52	75	-50.6	1,23	2,90	+135.7	14	25	78.6	1,95	3,50
IV Payments to other lines	6,26	1,50	-76.0	7,76	10	...	1,45	2,00	38.0	21,91	37,29
V Prizes for station gardens, etc.	...	1	...	...	...	...	...	...	...	...	...
VI Contribution to Provident institutions	5,45	13,00	138.5	3,47	7,90	+127.7	2,11	4,30	103.8	7,17	27,00
VII Gratuities	2,68	4,50	67.9	60	1,88	210.0	49	1,40	135.8	3,41	6,09
VIII Miscellaneous	3,55	12,55	253.5	1,08	4,00	270.4	71	91	28.2	2,11	7,09
Value of stores returned to stock	...	...	...	...	...	...	...	...	...	...	...
Less worked lines	-1,23	-1,64	...	-10	-32	...	-11	-20	...	-68	-2,68
Deduct—Amount to agree with the Budget grant.	...	-1,05	...	...	...	...	...	...	...	...	...
Total	24,97	49,70	99.0	17,69	13,64	-5.3	5,75	11,26	95.9	40,61	1,03,33
GRAND TOTAL											
	4,99,72	12,28,63	...	2,08,89	4,25,55	103.7	1,18,02	2,59,23	119.6	5,41,83	12,24,94
Value of stores returned to stock	...	...	...	...	...	...	...	...	...	...	...
Non budget lines	...	...	...	...	...	...	...	...	...	...	...
Suspense	...	...	...	...	...	...	...	...	...	...	...
Rebate, hire of rolling stock, etc.	-3,06	-3,49	-49	-6,50	...
Total	4,95,69	12,37,03	...	2,05,40	4,25,99	...	1,17,53	2,59,23	...	5,35,33	12,25,24

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ys in 1913-14 and as estimated for 1922-23—contd

B N		E. I.			B E and C I.			M. and S. M.			S. I.			BURMA.		
1922-23	Percentage of increase	1913-14	1922-23	Percentage of increase.	1913-14	1922-23	Percentage of increase.	1913-14	1922-23	Percentage of increase	1913-14	1922-23.	Percentage of increase	1913-14.	1922-23	Percentage of increase
8.32	68.5	88	88	-55.4	...	...	...	...	...	...	...	...	...	...	...	...
1.70	68.5	80	28	-53.3	...	...	...	...	...	...	...	...	...	...	...	...
90	80.0	10	8	-20.0	...	...	...	...	...	...	...	...	...	...	...	...
83	76.8	24	20	-16.6	...	...	...	...	...	...	...	...	...	...	...	...
...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...
...
44	12.9	38	4	-87.9	...	...	...	...	...	...	...	...	...	...	...	...
...
...
...
...
7.19	62.3	2.15	98	-54.2	...	...	...	...	...	...	40	4.49	1,122.5	1.86	2.80	50.5
...
...
25	150.0	94	80	-68.1	82	40	25.0	6	15	166.6	...	6	...	25	316.6	
3.00	292.2	5.25	18.00	243.0	3.44	22.00	539.5	1.02	3.00	194.1	29	1.38	375.9	14	...	
1.00	75.4	2.33	2.50	12.1	81	2.80	183.9	73	1.18	58.9	75	1.53	114.0	85	1.75	
5.00	...	25.89	89.10	54.0	5.31	17.68	232.5	1.77	3.42	98.2	93	1.21	30.1	...	...
4	33.3	...	...	...	6	10	66.6	...	1	...	...	...	...	...	...	...
10.50	148.2	...	31.78	...	6.07	18.00	196.5	4.32	11.20	159.3	1.63	7.00	382.1	2.52	5.80	
1.00	194.1	1.35	5.10	808.0	2.14	5.50	157.0	1.91	3.00	57.1	79	1.81	129.1	17	60	
14.00	593.0	2.22	6.25	181.5	98	3.15	221.4	47	2.70	451.0	3.53	2.44	30.8	78	1.40	
...	...	...	...	...	-1.00	-3.22	...	...	-85	-71	...	-48	-2.78	...	...	...
...
...
33.79	165.0	87.28	93.08	149.6	18.13	65.89	283.4	9.93	23.94	141.0	7.43	12.65	70.2	4.50	9.80	
4,67.24	133.4	4,15.51	9,37.49	128.6	3,28.18	8,75.00	166.6	2,30.41	4,71.58	105.5	1,67.57	3,63.85	117.0	1,32.32	2,57.57	
...
...
...
40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...
4,67.19	...	4,14.09	9,13.40	...	3,28.59	8,75.00	...	2,37.71	4,80.53	...	1,68.11	3,65.10	...	1,29.93	2,57.57	

APPENDIX B.
Rolling Stock Statistics

Railway	LOCOMOTIVES.			COACHING STOCK			GOODS STOCK.		
	1914 No	1921 No	Per cent increase	1914 No	1921 No	Per cent increase	1914 No	1921 No	Per cent increase
<i>Broad Gauge</i>									
Bengal-Nagpur	403	619	53.6	1,031	1,139	10.4	13,218	20,119	52.2
Bombay, Baroda and Central India	889	994	16.2	891	960	7.7	9,110	9,999	9.7
Eastern Bengal	270	308	14.1	779	937	20.3	6,509	8,844	35.9
East Indian	1,136	1,300	14.4	2,341	2,414	3.1	27,571	37,882	37.7
Great Indian Peninsula	1,073	1,301	21.2	2,109	2,406	14.1	17,127	19,158	11.9
Madras and Southern Mahratta	260	308	23.2	741	890	20.1	4,370	5,719	30.9
North Western	1,254	1,585	26.4	2,348	3,339	18.3	25,169	29,919	18.9
Oudh and Rohilkhand	276	292	5.8	1,040	1,110	6.7	7,285	8,534	18.0
South Indian	123	154	25.2	322	364	13.0	1,781	1,803	4.2
All Broad Gauge Railways	5,124	6,461	22.2	12,302	13,559	11.1	112,040	142,077	26.8
<i>Metre Gauge</i>									
Bombay, Baroda and Central India	508	597	17.5	1,533	1,591	3.8	9,142	8,877	-5.1
Eastern Bengal	241	266	6.2	825	1,062	28.7	5,018	5,131	2.4
Madras and Southern Mahratta	286	325	13.6	1,218	1,152	-5.4	6,203	6,598	6.4
South Indian	297	355	19.5	1,388	1,437	2.8	4,055	4,387	8.2
Burma	331	342	3.3	928	1,134	22.2	7,946	8,097	1.9
All Metre Gauge Railways	1,663	1,875	12.7	5,502	6,376	8.0	32,350	32,890	1.6

APPENDIX C

Statement showing use made of Locomotive Stock

Railway	Average number of engines in stock	Average number available for use	Average number in use daily	Maximum number in use on any one day	Average mileage run per engine per annum.	
<i>Broad Gauge Lines</i>						
North-Western	{ 1913-14 1921-22	1,247 1,561	1,007 1,123	885 980	929 1,045	20,990 16,041
Oudh and Rohilkhand	{ 1913-14 1921-22	(a) 292	(a) 255	(a) 233	(a) 249	26,120 21,260
Eastern Bengal	{ 1913-14 1921-22	270 308	232 243	(a) 218	(a) 238	25,232 21,380
Bengal-Nagpur	{ 1913-14 1921-22	399 587	346 536	311 432	(a) (a)	28,025 23,285
Great Indian Peninsula	{ 1913-14 1921-22	1,069 1,233	(a) 880	831 929	(a) 947	23,794 20,412
East Indian	{ 1913-14 1921-22	1,110 1,237	1,016 1,172	971 1,124	989 1,141	28,410 26,677
Bombay, Baroda and Central India	{ 1913-14 1921-22	894 937	271 306	(a) 276	(a) 301	23,796 24,734
Madras and Southern Mahratta	{ 1913-14 1921-22	250 308	209 260	(a) (a)	(a) (a)	22,638 21,535
South Indian	{ 1913-14 1921-22	(a) 143	(a) 129	(a) 92	(a) 97	19,410 17,404
<i>Metre Gauge Lines</i>						
Eastern Bengal	{ 1913-14 1921-22	241 256	203 200	(a) 126	(a) 136	26,308 18,730
Bombay, Baroda and Central India	{ 1913-14 1921-22	508 513	419 422	266 300	308 338	19,598 21,521
Madras and Southern Mahratta	{ 1913-14 1921-22	286 325	237 276	(a) (a)	(a) (a)	25,570 23,692
South Indian	{ 1913-14 1921-22	(a) 342	(a) 299	(a) 239	(a) 244	24,532 20,894
Burma	{ 1913-14 1921-22	323 324	(a) (a)	(a) (a)	(a) (a)	22,075 24,772
Total other Railways*	{ 1913-14 1921-22	108 169	32 153	28 113	29 135	23,117 16,663

(a) Information not available

* "Other railways" include Assam-Bengal Railway, Lucknow-Bareilly Railway, Tinhoot State and Aden (for 1921-22 only) Railways

APPENDIX D

Passenger Traffic

Railway.	NUMBER OF PASSENGERS CARRIED				PASSENGER MILES (IN THOUSANDS)			
	1913-14	1921-22	Maximum in year any subsequent to 1913-14	Per cent increase	1913-14	1921-22	Maximum in year any subsequent to 1913-14	Per cent increase
Bengal-Nagpur	17,097,000	21,919,000	21,919,000	28.2	822,494	1,068,135	1,097,494	19.0
Bombay, Baroda	67,161,000	89,589,000	94,000,000	39.9	2,075,444	2,501,200	2,543,223	27.4
Eastern Bengal	36,230,000	27,822,000	40,210,000	11.0	1,013,615	1,014,009	1,118,730	10.4
East Indian	41,532,000	48,169,000	48,176,000	15.9	2,339,613	2,353,685	2,443,993	4.5
Great Indian Peninsula Madras and Southern Mahatta	37,767,000	43,717,000	52,074,000	37.9	1,669,566	2,417,344	2,557,710	53.7
North Western	85,890,000	41,172,000	44,790,000	24.8	1,243,145	1,450,157	1,669,397	34.3
Oudh and Rohilkhand	61,849,000	73,791,000	73,791,000	20.3	2,412,570	3,381,843	3,520,896	45.9
South Indian	21,444,000	20,725,000	20,725,000	-3.4	818,543	866,601	887,862	8.5
Burma	47,200,000	52,890,000	54,084,000	14.6	1,395,372	1,391,757	1,542,830	10.6
TOTAL, ALL RAILWAYS†	28,667,000	35,069,000	35,678,000	24.5	618,540	784,206	785,128	27.0
TOTAL, ALL RAILWAYS†	399,481,000	460,602,000	484,570,000	21.3	14,739,673	17,665,829	18,379,526	24.7

Freight Traffic

Railway.	TONNAGE CONVEYED				TON MILES WORKED (IN THOUSANDS)			
	1913-14	1921-22	Maximum in year any subsequent to 1913-14	Per cent increase over 1913-14	1913-14	1921-22	Maximum in year any subsequent to 1913-14	Per cent increase
Bengal Nagpur	7,286,000	8,865,000	8,906,000	22.2	1,351,675	2,089,956	2,240,015	66.4
Bombay, Baroda	7,146,000	7,837,000	8,282,000	15.9	1,295,944	1,683,836	2,094,457	61.6
Eastern Bengal	5,511,000	4,697,000	5,894,000	-2.1	599,743	564,728	555,022	-9.3
East Indian	17,034,000	16,510,000*	16,993,000	11.5	4,279,121	4,544,859*	5,908,832	38.1
Great Indian Peninsula Madras and Southern Mahatta	9,881,000	10,697,000	11,439,000	14.6	2,559,561	2,649,467	3,494,673	33.1
North Western	4,133,000	4,563,000	4,858,000	17.4	797,669	929,254	1,209,144	51.6
Oudh and Rohilkhand	12,288,000	11,531,000	12,947,000	5.4	2,667,733	2,489,122	3,742,657	40.3
South Indian	3,436,000	3,484,000	3,927,000	14.3	397,556	657,650	889,871	123.8
Burma	3,246,000	3,264,000	3,314,000	2.1	360,753	467,162	542,756	50.4
TOTAL, ALL RAILWAYS†	3,144,000	3,747,000	3,886,000	23.6	384,225	532,700	546,259	42.2
TOTAL, ALL RAILWAYS†	74,836,000	76,766,000	81,454,000	8.8	14,848,073	16,733,346	21,045,362	41.7

* Traffic adversely affected by a long strike

† Includes also the Assam-Bengal, Jodhpur-Hyderabad, Bewada Extension and Aden Railways.

APPENDIX E
Analysis of Engine Mileage.

Railway.	PASSENGER TRAIN.				FREIGHT TRAIN				SHUNTING				TOTAL			
	1913-14.	1921-22	Maximum in any year subsequent to 1913-14.	Per cent. increase	1913-14.	1921-22	Maximum in any year subsequent to 1913-14	Per cent. increase	1913-14	1921-22	Maximum in any year subsequent to 1913-14	Per cent. increase	1913-14.	1921-22.	Maximum in any year subsequent to 1913-14	Per cent. increase.
<i>Broad Gauge</i>																
Bengal-Nagpur	3,887,000	3,827,000	3,860,000	-7	5,248,000	6,848,000	7,088,000	35.1	2,089,000	3,417,000	3,417,000	63.5	11,383,000	14,320,000	14,320,000	26.3
Bombay, Baroda and Central India	3,733,000	4,673,000	4,673,000	25.1	2,799,600	3,279,000	4,133,000	47.7	1,273,000	1,728,000	1,769,000	38.9	8,087,000	9,787,000	9,980,000	23.7
Eastern Bengal	2,705,000	2,977,000	3,103,000	14.7	1,809,000	1,393,000	1,859,000	2.7	2,248,000	2,195,000	2,202,000	-2.0	6,613,000	6,537,000	6,977,000	2.4
East Indian	9,938,000	9,794,000	10,858,000	4.2	14,126,000	14,261,000	18,078,000	27.9	5,481,000	7,953,000	8,471,000	54.5	32,137,000	34,680,000	38,839,000	19.1
Great Indian Peninsula	10,344,000	11,198,000	11,198,000	8.2	11,409,000	10,811,000	13,827,000	21.2	3,441,000	4,173,000	4,395,000	24.8	25,580,000	26,576,000	28,259,000	10.7
Madras and Southern Mahratta	2,972,000	3,165,000	3,165,000	18.4	2,082,000	2,318,000	2,938,000	44.5	823,000	951,000	1,019,000	23.0	5,703,000	6,682,000	6,974,000	22.3
North Western	11,414,000	10,447,000	12,090,000	5.9	10,016,000	9,346,000	10,887,000	8.7	4,879,000	5,483,000	6,445,000	37.7	26,324,000	25,461,000	27,707,000	-5.2
Oudh and Rohilkhand	3,730,000	2,954,000	3,889,000	-9.1	2,433,000	2,326,000	2,990,000	22.9	897,000	1,021,000	1,021,000	18.8	7,209,000	6,378,000	6,868,000	-4.7
South Indian	1,199,000	1,581,000	1,581,000	31.9	941,000	782,000	995,000	5.7	Not recorded separately	811,000	811,000		2,388,000	3,680,000	2,680,000	13.2
Burma	2,543,000	2,618,000	2,618,000	2.9	3,406,000	3,788,000	3,996,000	17.3	1,861,000	1,548,000	1,572,000	16.3	7,307,000	8,001,000	8,042,000	10.0
<i>Metro Gauge.</i>																
Bombay, Baroda and Central India	4,449,000	4,971,000	5,177,000	16.3	4,311,000	4,728,000	5,808,000	34.7	1,324,000	1,607,000	1,607,000	21.4	10,108,000	11,342,000	11,613,000	14.9
Eastern Bengal	2,721,000	2,285,000	2,879,000	5.8	2,323,000	1,391,000	1,946,000	-16.4	1,221,000	1,160,000	1,237,000	1.3	6,433,000	4,917,000	6,183,000	-3.9
Madras and Southern Mahratta	2,814,000	2,938,000	2,986,000	6.1	3,893,000	4,076,000	4,083,000	4.9	905,000	914,000	914,000	1.0	7,697,000	8,163,000	8,163,000	6.1
South Indian	3,748,000	4,035,000	4,246,000	13.3	2,860,000	2,787,000	3,036,000	2.5	Not recorded separately	839,000	839,000		7,591,000	7,668,000	7,925,000	4.4
Total all Railways*	70,004,000	71,009,000	72,137,000	3.0	71,151,000	71,691,000	84,462,000	18.7	23,332,000	34,998,000	36,393,000	23.4	173,966,000	182,202,000	186,296,000	7.1

* Includes also the Assam-Bengal, Jodhpur-Hyderabad, Bezwada Extension and Aden Railways.

APPENDIX F.

Details of proposed Programme Revenue Expenditure in 1923-24, with comparative totals for 1921-22 and 1922-23.

Railway	WAY, WORKS AND STATIONS.			ROLLING STOCK.							TOTAL PROGRAMME EXPENDITURE		
	Track Renewals	Bridges	Other works	Locomotives		Coaching Stock		Goods Stock.		Miscellaneous Stock.	1923-24.	1922-23	1921-22.
				No.	Rs.	No.	Rs.	No.	Rs.		Rs.	Rs.	Rs.
North-Western	1,16,80,000	12,84,000	23,50,000	70	46,18,000	180	16,90,000	1,429	51,50,000	39,000	2,67,10,000	2,23,92,000	1,78,10,000
Oudh and Rohilkhand	45,93,000	.	14,27,000	9	6,80,000	.	.	20	1,22,000	7,85,000	76,07,000	69,16,000	45,60,000
Eastern Bengal	84,79,000	9,96,000	2,96,000	14	8,00,000	55	9,72,000	185	4,78,000	2,00,000	72,20,000	67,00,000	51,81,000
Bengal-Nagpur	37,33,000	2,60,000	6,73,000	14	5,76,000	7	99,000	441	7,05,000		61,06,000	41,91,000	29,15,000
Great Indian Peninsula	23,75,000	22,90,000	24,46,000	104	52,92,000	64	13,00,000	200	6,00,000	61,000	1,43,64,000	97,90,000	1,32,28,000
East Indian	72,58,000	22,82,000	5,82,000	100	31,37,000	37	10,84,000	1,150	30,70,000	3,00,000	1,73,13,000	1,35,97,000	83,38,000
Bombay, Baroda and Central India	77,97,000	6,92,000	16,80,000	72	24,71,000	69	5,77,000	879	12,00,000	2,48,000	1,46,65,000	1,34,50,000	73,77,000
Madras and Southern Mahratta	49,91,000	3,78,000	10,13,000	9	18,24,000	41	8,88,000	830	28,74,000	20,36,000	1,39,99,000	76,39,000	70,68,000
South Indian	40,31,000	1,58,000	23,90,000	13	5,21,000	...	...	86	3,04,000	65,000	80,69,000	78,38,000	42,05,000
Burma	21,65,000	15,000	3,60,000	...	...	111	4,80,000	297	4,27,000	1,99,000	86,56,000	88,07,000	81,20,000
Other Railways	23,85,000	...	55,000	...	1,08,000	...	4,00,000	...	10,00,000	75,000	40,25,000	32,79,000	24,74,000
TOTAL	5,51,00,000	88,90,000	1,32,61,000	405	1,95,25,000	514	74,90,000	5,317	1,59,30,000	40,78,000	12,42,14,000*	9,97,48,000	7,62,26,000

* The total provision proposed for 1923-24 is Rs 12,50,00,000 the balance being unallocated.

APPENDIX G.

Important station remodelling schemes for which provision is being made in 1923-24.

Railways.	Stations.	Total estimated cost	Approximate outlay to and in 1922-23.	Proposed provision for 1923-24.
		Rs.	Rs.	Rs.
Eastern Bengal	Parbatipur	6,00,000		4,00,000
	Katihar	11,80,000	83,000	2,00,000
Bombay, Baroda and Central India .	Ahmedabad	55,60,000	40,05,000	13,32,000
	Bulsat	14,83,000	1,88,000	4,00,000
	Giant Road	3,47,13,000	19,03,000	52,30,000
Oudh and Rohilkhand	Lucknow	67,00,000	...	5,00,000
Burma	Mandalay	6,54,000	2,54,000	2,50,000
Great Indian Peninsula	Poona	41,54,000	9,41,000	10,50,000
	Nagpur	93,62,000	81,04,000	6,00,000
	Victoria Terminus	69,12,000	...	9,00,000
	Bhusawal	10,00,000	...	2,00,000
	Gwalior	10,28,000	...	5,14,000
South Indian	Madras Beach	14,00,000	...	70,000
	Trichinopoly Junction	10,00,000	...	2,53,000
	Trichinopoly Fort	8,00,000	...	92,000
	Erode Junction	8,00,000	...	1,24,000
North-Western	Gujranwala	11,23,000	3,27,000	4,50,000
	Peshawar	10,00,000	...	4,00,000
Madras and Southern Mahratta . .	Berwada	37,25,000	32,35,000	1,70,000
	Jalarpet	15,00,000	...	1,15,000
	Akonam	9,38,000	25,000	2,00,000
	Hubli	23,00,000	...	75,000

It is stated that the above list includes all the most important works of remodelling, and that the work covered in each case is not confined to station buildings but covers remodelling of station yards and connected improvements.

PART III.

POSTS AND TELEGRAPHS DEPARTMENT.

The estimates for 1922-23, including a supplementary estimate for Rs. 2,11,000, compare with the actual receipts and expenditure in 1913-14 and the revised estimate for 1921-22 as follows :—

	Expenditure.	Receipts.
	Rs.	Rs.
1913-14, Actuals	4,71,31,000	5,14,89,000
1921-22, Revised Estimate	9,85,35,000	8,89,26,000
1922-23, Budget Estimate	10,19,27,000	10,91,19,000

2. Reliable data of the total capital expended by the Posts and Telegraphs Department are not readily available but we have been supplied with the following approximate figures which illustrate the large development which has taken place in telegraphs and telephones since 1913-14.

Head.	TOTAL CAPITAL EXPENDED UP TO 31ST MARCH.		Increase.
	1914.	1922.	
	Rs.	Rs.	Rs.
Posts	Not available.	1,63,97,504	...
Telegraph and telephone buildings	1,13,53,408	1,60,91,994	47,38,586
Telegraphs	} 11,03,47,894	{ 15,19,96,401	} 5,45,30,336
Telephones		{ 1,27,81,829	

A considerable portion of the above capital has been provided out of surplus revenues and we are informed by the Director-General that sufficient allowance has not been made for depreciation in arriving at the capital expenditure on which interest should be charged as part of the working expenses of the Department. The matter is, however, now under investigation.

3. Accounts on a commercial basis are not prepared for the Postal, Telegraph and Telephone services but *pro forma* Profit and Loss statements are compiled by the Director-General and published in his annual administration report. We have been supplied with the following statement showing the results for 1921-22 compared with those for 1913-14 but no forecast for 1922-23 is available.

Pro Forma Accounts.

Department.	1913-14, ACTUALS		1921-22, ROUGH ACTUALS	
	Revenue.	Expenditure.	Revenue	Expenditure.
	Rs.	Rs.	Rs.	Rs.
Postal	3,80,44,572	3,39,19,530	6,14,70,922	6,72,48,791
Telegraph and Telephone	1,85,78,406	1,42,20,353	3,43,08,667	3,02,17,261
	5,66,22,978	4,81,40,183	9,62,85,589	9,74,66,052
Excess or Deficit	+ 34,82,795		- 11,80,463	

These *pro forma* accounts shew the approximate financial results of the working of the Department but no allowance has been made for interest on capital, depreciation, etc., in the Telegraph and Telephone figures for 1913-14, or in the Postal figures for either year. On the other hand the Postal figures include the cost of all stores purchased, whether required for Capital or Revenue Works. Other adjustments appear to be necessary and

6. The following statement gives an analysis of the staff employed and the amount paid in salaries for the year 1913-14, compared with the estimates for 1921-22 and 1922-23 :—

Items.	1913-14.		1921-22.		1922-23.	
	Number	Actuals.	Number	Revised Estimate.	Number	Budget Estimate.
1 Officers	514	Rs. 28,87,946	618	Rs. 42,68,550	679	Rs. 47,50,110
2. Supervising and clerical staff including mail guards, sorters and all clerical staff in post offices, Railway Mail Service, Traffic, Engineering Branches	37,492	1,25,66,041	43,644	2,75,77,050	46,093	3,03,70,470
3. Telegraphists, Telegraph Masters and Telephone Operators	3,812	46,34,203	4,820	81,07,190	4,550	86,19,440
4. Engineering, supervising and subordinates staff including mechanics, etc	407	2,01,252	841	9,04,900	860	10,20,300
5. Delivery staff (Postmen and Telegraph peons)	31,207	41,82,982	32,521	84,39,340	29,523	80,29,930
6. Menials, linemen, packers, peons, mail peons and letter-box peons	11,950	14,72,691	17,995	35,77,170	21,440	38,95,690
7. Road and river establishment	18,813	19,23,768	19,849	33,68,830	18,676	31,68,220
8. Miscellaneous staff, caretakers, mechanics, etc	62	14,193	55	19,990	54	24,280
9. Telegraph Storeyard and Depôts	158	1,03,406	162	1,77,830	162	2,31,740
10. Telegraph Workshops	58	70,581	71	1,40,940	71	1,53,330
11. Postal Workshop	40	19,481	43	81,150	43	32,420
12. Wireless Branch . . . . .	..	..	822	5,54,110	278	8,22,110
		2,80,76,544		5,71,61,050		6,11,12,970
Deduct—Share of establishment chargeable to Telegraph Capital account	1	—3,04,767		12,92,700		—12,07,600
	104,603	2,77,71,777	120,441	5,58,68,350	122,444	5,99,05,370

7. This table shows that, whereas the total staff employed has increased from 104,603 in 1913-14 to 122,444 required for 1922-23 or by 17 per cent., the cost of salaries has increased from Rs. 2,80,76,544 to Rs. 6,11,12,970 or by 118 per cent. This large increase is mainly due to the recommendations of the Postal Committee of 1920 under the chairmanship of Mr. Heseltine which resulted in an increase of over Rs. 150 lakhs in the cost of salaries of the clerical, delivery and menial staff for 1921-22. In addition, the pay of the supervising and operating staff of the Telegraph Branch was revised upon the recommendations of a special Committee appointed by Government in the same year, involving a further expenditure of Rs. 35 lakhs. The recommendations of these two Committees have therefore resulted in an increase of Rs. 185 lakhs in expenditure.

8. The number of officers employed has increased from 514 in 1913-14 to 679 or by 32 per cent., whereas the number of other staff has only increased by 17 per cent. The Director-General has agreed that one of the 6 Assistant Directors General might be dispensed with, saving of Rs. 20,000 and we think that the number of officers should be reduced to the level necessary to maintain the same ratio of officers to other staff as that which obtained in 1913-14. This would effect a total saving of 88 officers costing roughly Rs. 6 lakhs per annum.

9. The sanctioned staff of a post office is fixed according to certain prescribed standards by the application of a time test to the work of the office. We are informed that the time test was recently revised and the standard reduced by about 6 per cent.

It has not been possible for us in the limited time at our disposal to make any exhaustive analysis of the staff employed in relation to the work performed. In order to obtain a general impression of the check exercised we called for the returns in regard to the telegraph staff. The number of telegraph masters and telegraphists employed on 1st April 1922 compared with 1914 and the number of signalling operations performed in each of these years was as follows:—

	1914	1922.	Increase per cent.
Telegraph Masters	260	353	37
Telegraphists	2,784	3,436	25.7
Number of signalling operations .	79,437,178	100,455,194	26.4

The basis on which staff is fixed is one telegraphist for every 42,000 signalling operations representing an average hourly outturn of 20 messages per operator during day and night, taking the busy and slack seasons together. On this basis the number of telegraphists required for 100,455,194 signalling operations would be only 2,392 *plus* the standard leave reserve of 17½ per cent, making a total of 2,810, whereas the actual number employed is 3,436, an excess of 626.

We have obtained particulars for 11 of the larger telegraph offices showing the average number of telegrams dealt with per man per hour by (a) the manipulating staff and (b) the total staff for 1913-14 and 1921-22 respectively. These particulars are shown in Appendix B. It will be observed that the average number of signalling operations per operator has considerably improved but this is partly due to the transference to the clerical staff of work formerly performed by telegraphists and there has been a considerable falling off in the output per man of the total staff.

Examining the details we find there are large variations in the number of signalling operations per operator. Further, there appears to be no definite relation between the number of manipulative staff and the total staff of supervisors, operators and non-operators as will be gathered from the following particulars for 1921-22:—

Station.	MANIPULATIVE STAFF.		SIGNALLING OPERATIONS	
	Average number	Per cent. of total staff	Number.	Number per operator.
Calcutta	295	45.4	7,094,783	24,050
Bombay	270	40.2	7,961,809	29,437
Madras	136	43.2	3,700,655	27,210
Agia	156	62.9	3,262,381	20,913
Rangoon	68	37.1	2,401,507	36,386
Rawalpindi	62	59.6	1,265,930	20,418
Karachi	59	41.3	1,984,213	33,631

We observe that in 1909, when the whole question of telegraph staff was reviewed, special attention was drawn to the necessity of exercising a close check on the returns rendered and particularly, to ensuring that, for small offices, approximately 65 per cent. of the force was placed on operating duties and in larger offices 70 per cent. leaving 35 per cent. and 30 per cent. respectively to cover all supervising and other non-operating duties.

We think that the figures we have quoted indicate that there is a considerable field for economy in the staff employed in the telegraph offices.

10. We also think that some reduction should be possible in the number of engineering, supervising and subordinate staff, including mechanics, which has increased from 497 in 1913-14 to 860 required for 1922-23, an increase of 73 per cent. whereas the line mileage has only increased by 26 per cent. and the wire mileage by 28 per cent. The number of linemen has also increased by 45 per cent. and, although this is partly due to the limitation of the number of hours worked to nine daily, we are of opinion that some economy in staff should also be possible.

With regard to delivery staff we understand that an examination is now being made of the number of deliveries at all post offices and that light deliveries will as far as possible be abolished with a consequent reduction in the number of postmen employed.

The Director-General has agreed that the provision for salaries should be reduced by Rs. 3,67,800 but, as he is estimating for a decrease in revenue which means a decrease in work, we consider this is inadequate. We are informed that the probable saving on the current year's estimate is Rs. 15,63,000 and we are of the opinion that the provision for salaries in 1923-24 should be limited to not more than Rs. 5,74,00,000, a reduction of Rs. 25 lakhs compared with 1922-23 but an increase of Rs. 15 lakhs compared with the revised estimates for 1921-22.

Conveyance of Mails.

11. The main items of expenditure included under this head are as follows:—

	1913-14, Actuals.	1921-22, Rough Actuals.	1922-23, Budget Estimate.
	Rs	Rs	Rs
Subsidies	20,98,728	31,07,585	36,37,420
Road and River charges	2,36,964	5,78,448	3,59,700
Railways	80,82,064	85,22,217	43,88,750
TOTAL	64,12,756	72,08,250	83,85,870

The large increase under "Subsidies" is due to the general rise in prices and the replacement of many horse line services by motors. The daily road mileage of mails increased from 11,568 in 1913-14 to 13,268 in 1921-22, the latter figure including 2,528 miles run by motor cars. The substitution of a motor service for a tonga line usually quadruples the cost and in only a few cases has it been possible to effect economy by utilising motors. We have examined the subsidies paid for each service and find that in the majority of cases contracts have been entered into for 5 years at fixed rates and that few of the contracts can be terminated before 1924-25. We think that the desire to provide improved postal services has led to the introduction of motor transport without due regard to financial considerations, and that many of the existing contracts should be terminated on completion unless more favourable terms, compared with the cost of horse lines, can be obtained. We recommend that, during the present period of financial stringency, no additional motor services should be provided unless economy can be effected thereby, and that, generally speaking, the use of motors should be limited to large towns and important lines where heavy mails are carried.

With regard to horse lines many of the existing contracts are at very high rates compared with 1913-14 and we think that, in view of the fall in prices which has taken place, more favourable terms should be obtainable when the existing contracts come to be renewed.

The increase in Road and River Charges is almost entirely due to extra despatches of mails and increased ferry charges which do not call for special comment.

12. The expenditure included under Railways may be analysed as follows :—

	1913-14, Actuals.	1921-22, Rough Actuals.	1922-23, Budget.
	Rs.	Rs.	Rs.
Special train hire	2,54,177	6,83,000	6,50,000
Construction of vans	46,498	4,03,500	3,46,500
Haulage and other payments	27,81,389	30,24,540	33,42,250
TOTAL	30,82,064	41,21,040	43,38,750

The increased expenditure for special train hire is due to increased rates and to the introduction in 1919 of three additional special train services in connection with outward foreign mails. We are informed that one of these services has recently been abolished, saving Rs. 60,000 annually.

The provision of Rs. 3,46,500 under "Construction of Vans" included Rs. 2,10,000 for 7 new vans and Rs. 1,36,500 for additions and alterations to existing vehicles, etc. This expenditure was largely consequent upon the cessation of construction and reduction of repair work during the war period. The Director-General agrees that no provision for new vans will be necessary in 1923-24 and that the expenditure on additions and alterations can be largely curtailed, say, to Rs. 50,000.

In view of all the circumstances the Director-General has agreed to a reduction of Rs. 7 lakhs in the total provision for the conveyance of mails in 1923-24.

Office of Account and Audit.

	Rs.
1913-14, Actual Expenditure	11,29,051
1921-22, Rough Actuals	25,68,072
1922-23, Budget Estimate	28,71,000

13. A considerable portion of the work of this department is measured in statistical units for the purpose of estimating the staff required under normal conditions. We have examined in detail the staff employed in various sections in relation to the work performed and found that in many cases it is *prima facie* excessive.

Until the present year, the work of the department has been steadily increasing and it was considered sufficient to call upon the Superintendents to justify any additional staff required but no arrangements are in force to bring to light cases of excessive staff in time of falling traffic.

We are informed that the Accountant General, Posts and Telegraphs, is now taking up all cases where staff appears excessive and that reductions to the extent of 60 men have already been effected in the money order section alone. There appears to be considerable room for economy in the other sections and we recommend the provision for 1923-24 be limited to Rs. 25,00,000, a reduction of Rs. 3,71,000.

Travelling Allowances.

	Rs.
1913-14, Actual Expenditure	11,14,354
1921-22, Rough Actuals	25,43,052
1922-23, Budget Estimate	23,55,300

14. There has been a large increase in the cost of travelling allowances. Railway rates and freight charges have increased about 50 per cent.; halting allowances in several localities have been considerably enhanced and in some cases doubled; the scales of travelling allowances on transfer have been raised and other allowances increased. In addition, although the rates of pay have been considerably improved there has been no alteration in the salary limits entitling staff to the higher scales of travelling allowances.

We shall deal further with this question in our remarks under "Pay and Allowances," but we think that considerable economy should be possible in Travelling Allowances in 1923-24 and the Director-General has agreed to a reduction of Rs. 4,61,000

Stationery and Printing.

	Rs.
1913-14, Actual Expenditure	12,48,848
1921-22, Rough Actuals	41,65,533
1922-23, Budget Estimate	32,21,000

15. We were much struck with the large increase which has taken place in the cost of Stationery and Printing since 1913-14. There has been great waste in the use of telegraph forms, the number printed in 1921-22 being 50 millions although the number of forms actually used for telegrams was under 20 millions. We recognise that it is somewhat difficult to exercise a close check over the use of these forms and the Director-General is endeavouring to reduce the wastage to about 25 per cent. and is reducing his order for forms to 30 millions. We are informed that the print order for telegraph forms in 1923-24 will be curtailed by about Rs. 90,000 and that the total estimate for Stationery and Printing for 1923-24 will be reduced by Rs. 3 lakhs, irrespective of any saving, which may be effected by the fall in prices.

Postal Buildings (charged to Revenue).

	Rs.
1913-14, Actual Expenditure	7,91,246
1921-22, Rough Actuals	5,83,737
1922-23, Budget Estimate	15,19,000

16. The amount expended on Postal Buildings in 1913-14 was Rs. 7,91,246. No expenditure is shown for this year in Appendix A as the charges were included in the Public Works Department estimates.

We discussed in detail with the Director-General the various items included in the 1922-23 Budget and it was agreed that, in view of the present financial situation, many of the projects could be postponed and the expenditure for 1923-24 limited to Rs. 6 lakhs. Subsequently he submitted proposals involving an expenditure of Rs. 9 lakhs distributed as follows :—

Nature of work.	Total cost.	Proposed provision for 1923-24.
	Rs.	Rs.
Major works not commenced—		
New buildings for the Postal Press at Aligarh .	2,70,880	1,24,000
Acquisition of a site for new building for the Byoulla town Sub-Office (Bombay) .	64,800	64,800
New building for the combined office at Boundary Road, Rangoon .	22,400	22,400
New combined office building at Summer Hill, Simla .	27,200	27,200
New combined office building at Chaklala (Rawalpindi) .	26,200	26,200
Postmasters quarters, Canupore .	35,700	35,700
Total . . . . .	...	3,00,800
Major works in progress . . . . .	..	1,52,700
Minor works—		
Lump sum provision for minor works costing less than Rs 10,000 . . . . .	...	3,80,000
Departmental buildings—		
Lump sum provision for new works . . . . .	..	56,000
Total . . . . .	...	9,19,000

The construction of the new Postal Press at Aligarh is an essential part of a larger scheme for the more economic printing and distribution of postal forms and it is estimated that the construction of this building will effect an annual saving of not less than Rs 60,000. We have not examined this estimate in detail.

With regard to the remaining major works not commenced, we are not satisfied that some of them could not be postponed during the present period of financial stringency. We also think that the lump sum provision for minor works could be reduced and recommend that the total expenditure under this heading should be limited to Rs. 6,00,000

We are informed that all postal buildings are constructed by the Public Works Department and that outside tenders are not obtained. We consider that outside tenders should in future be obtained for all large buildings and in this view the Director-General concurs.

Supplies and Services.

	Rs.
1913-14, Actual Expenditure	5,68,913
1921-22, Rough Actuals	10,64,374
1922-23, Budget Estimate	12,92,330

17. The expenditure under this heading is mainly for the purchase of miscellaneous stores. A reduction of Rs 70,000 was effected in October 1922 in connection with a demand for a supplementary grant for the over printing of post-cards necessitated by the increase in postal charges. The following statement shows the general position in regard to stores :—

Stores.	Value of stock on hand on 31st March 1922.	Value of purchases in 1922-23	Value of estimated annual consumption.	Estimated value of stocks on hand 31st March 1923.	No. of weeks' consumption which stocks represent.
	Rs	Rs	Rs	Rs	
Mail Bags	68,023	3,50,733	2,84,386	37,153	16
Letter Boxes	17,152	45,164	41,181	8,987	14
Postman's Bags	7,575	31,180	33,197	4,308	10
Locks	8,958	..	38,487	7,487	10
Scales and weights	6,219	..	18,364	8,424	19
Hand Carts	2,250	32,653	28,432	346	3
Stamps and seals	4,305	45,079	33,534	1,153	30
Safes	1,519	14,355	13,593	1,539	9
Other supplies	61,025	1,82,698	1,44,852	19,834	11
Total all Stores	1,77,026	7,01,862	6,31,025	1,39,216	12

The additional items making up the total expenditure of Rs 12,92,330 for 1922-23 are as follows :—

	Rs
Mail bags	3,50,733
Letter boxes	45,164
Postman's bags	31,180
Hand carts	32,653
Safes	14,355
Clocks	7,622
Stamps and Seals	45,049
Other supplies	1,82,698
Motor cars	75,000
Maintenance of motor service	1,56,000
Maintenance of horses and vehicles	14,190
Bags other than mail bags	1,05,267
Miscellaneous articles	2,32,419
Total.	12,92,330

The item of Rs. 3,50,733 includes Rs. 79,500 as part payment of the price, Rs. 2,86,875, of 370,000 kit bags and 10,000 ration bags purchased from the Disposals Board at an exceptionally favourable price, the balance being payable next year. We are informed these bags will make excellent mail bags

at about one-third of the market price for the inferior bags now used and the quantity purchased will cover the requirements for about the next four years.

The Director-General has agreed to limit his requirements for 1923-24 to Rs. 8,89,000, but we are of the opinion that the provision should be further reduced to Rs. 8,00,000, saving Rs. 4,92,000.

Fixed house and ground rents (including Rates and Taxes).

	Rs.
1913-14, Actual Expenditure	9,30,045
1921-22, Rough Actuals	11,99,277
1922-23, Budget Estimate	14,01,160

18. The increase in expenditure under this heading is due to increased rents, rates and taxes and is not susceptible of reduction.

House rent, local and special allowances.

	Rs
1913-14, Actual Expenditure	8,50,030
1921-22, Rough Actuals	21,92,544
1922-23, Budget Estimate	24,69,060

19. This expenditure may conveniently be sub-divided as follows :—

	1913-14.	1922-23.
	Rs	Rs.
Post Office	3,24,963	8,98,490
Telegraph Traffic	4,45,927	12,17,840
Telegraph Engineering	79,140	3,52,730

The large increase in the allowances to the Postal Staff is mainly due to the recommendations of Mr. Heseltine's Postal Committee of 1920 that postmen and menials in many expensive localities should be given house rent allowances. The increased cost due to the concessions granted amounts to Rs. 4,00,000. The remaining portion of the increased expenditure is due to improved allowances to officers and other staff sanctioned by the Government of India, increased numbers employed and an extension of house rent allowances to staff not formerly eligible for such allowances.

The staff in Traffic Branch of the Telegraph Department was formerly separated into two services, General and Local in the proportion of 6 to 4, the latter not being eligible for house rent allowances. As a result of the recommendations of Mr. Heseltine's Telegraph Committee, 1920, a new Station Service was substituted for the former Local Service and the proportion of General Service to Station Service men was fixed at 4 to 1. The increased expenditure for 1922-23 compared with 1913-14 is accounted for as follows :—

	Rs.
Increase of about 800 men in General Service Branch	3,00,000
Improved rates of house rent allowances	4,00,000
House rent allowances to 250 Telegraphists transferred to General Service and local allowances to staff at Hill Stations	1,00,000

The large increase in allowances in the Engineering Branch of the Telegraph Department is mainly due to an extension of the privileges enjoyed by the Traffic Subordinates to the Engineering Staff, and also to increased numbers employed.

20. We consider that the whole question of house rent allowances should be reviewed. The reasons given for granting house rent allowances to General Service Telegraphists is that they are liable to long transfers from one end of India to another at a very short notice. This gave rise to the question of providing them with quarters, and, at places where quarters are not provided, compensation is given in lieu. We do not think that the granting of free accommodation or house allowances to four out of every five telegraphists can

be justified. We are of the opinion that in cases where it is necessary to provide quarters for the staff reasonable rents should be charged and where such accommodation is not available house rent allowances should be granted for a reasonable period only until the men transferred have had an opportunity of finding suitable accommodation.

Apart from any saving which would result from a revision of the allowance, we are informed by the Director-General that the total provision for house rent and local allowances may be reduced to Rs. 22,08,000 for 1923-24, a saving of Rs. 2,61,000.

Subsidies to Cable Companies.

	Rs.
1913-14	Nil.
1921-22, Rough Actuals	70,000
1922-23, Budget Estimate	2,90,000

21. This expenditure represents payments to the Eastern Telegraph and the Eastern Extension, Australasia and China Telegraph Companies for working trans-India traffic between Bombay and Madras for through messages to the Far East. The amount paid is the actual audited cost of working up to a maximum of Rs. 2,40,000. The large increase in 1922-23 compared with 1921-22 is due to the duplication of the line to meet increased traffic and to an arrear payment of Rs. 50,000. The transit fees received by the Government on the traffic worked amounted to Rs. 15,49,654 during the 12 months ended, May 1922. The provision for 1923-24 has been fixed at Rs. 2,40,000, a reduction of Rs. 50,000 due to the elimination of the arrear payment.

Maintenance of Telegraph and Telephone lines.

	Rs.
1913-14, Actual Expenditure	9,24,284
1921-22, Rough Actuals	12,64,956
1922-23, Budget Estimate	20,95,000

22. The increased expenditure for 1922-23 is due to increased mileage, increased cost of labour and materials and arrears of maintenance which accrued during the war period. We were informed that hitherto it has not been the practice to make any provision for arrears of maintenance and no difference was made when framing the estimate between ordinary maintenance and arrears of maintenance. At our request however we have been supplied with the following analysis of the provision, for 1922-23 :—

	Rs.
Maintenance proper	9,59,000
Arrears of maintenance	3,00,000
Minor works (Revenue)	8,81,000
Revenue portion of joint works	4,15,000
TOTAL	20,95,000

We are informed that in 1921-22 it was found that about 28 per cent. of the wire mileage has not been maintained and over 800 miles of corroded wire had to be renewed, which renewal would in normal times have been spread over several years. No information is however available as to the expenditure necessary to overtake all arrears.

The line and wire mileage to be maintained has increased as follows :—

	Line	Wire	Cable	Cable conductors
1913-14	81,143	312,852	450	8,949
1921-22	91,110	381,691	650	31,370
1922-23, Estimates	93,500	400,000	700	40,000

The increased mileage appears to be a full justification for the increase in the cost of maintenance proper and we suggest no reduction. The provision for arrears of maintenance and for the revenue portion of joint capital and revenue works can, however, be considerably reduced and the Director-General has agreed to limit the total expenditure for 1923-24 to Rs 14,95,000, a saving of Rs. 6,00,000.

We are informed that it has not been found possible to carry out the full programme of work for 1922-23 and a saving of Rs. 2,50,000 is therefore anticipated.

Miscellaneous Expenditure (Purchase of Stores, etc.).

	Rs.
1913-14, Actual Expenditure	27,47,900
1921-22, Rough Actuals	1,71,48,718
1922-23, Budget Estimate	1,33,50,000

23. The large increase in expenditure in 1921-22, compared with 1913-14, is due to the general rise in prices, the inclusion of exchange adjustments and the recouplement of stock depleted during the war period. A considerable reduction was effected in 1922-23.

The expenditure may be analysed as follows :—

	Actuals, 1913-14.	Rough Actuals, 1921-22	Budget Estimate, 1922-23.
	Rs.	Rs.	Rs
Purchase of stores in India	4,39,563	26,61,224	22,60,000
Freight and landing charges	40,574	85,594	35,000
Workshop labour and other charges	2,53,952	5,26,045	5,00,000
Stores returned from works	68,239	50,673	20,000
Adjustment for exchange		48,02,412	36,45,000
Expenditure in England	21,36,409	98,65,571	72,90,000
	29,38,737	1,79,91,519	1,37,50,000
<i>Deduct</i> —Sales and issues to other Departments	1,90,837	8,42,801	4,00,000
TOTAL	27,47,900	1,71,48,718	1,33,50,000

Particulars of the value of stores purchased, issued and sold during the years 1913-14 and 1921-22 and the stock on hand at the end of these years are given in Appendix C. It will be observed that the value of the stores on hand, excluding mobilisation stores held for the Army Department, has increased from Rs. 43,94,000 on the 31st March 1914, representing 50 weeks' supply, to Rs. 1,53,40,000 on the 31st March 1922, representing 76 weeks' requirements. We also examined detailed lists of the more important stores on hand and found that in a large number of cases very heavy stocks were being carried. We are informed that the stocks on hand on the 31st March 1922 were unduly inflated owing partly to the East Indian Railway strike and partly to the fact that indents were made for a larger programme of work than could be carried out with the supervising and line staff available.

Indents for constructional stores from England are usually despatched twice a year and, owing to the time taken between the despatch of the indent and the receipt of the stores in India, the indenting officers aim at having 1½ years' supply in reserve. For general stores one year's reserve has been considered sufficient and for wireless stores 6 to 8 months' reserve. We consider that the requirements for constructional and general stores would be adequately met if the reserve stock on hand at the time of despatching each indent was limited to 9 months' supply.

The Director-General has agreed that the total provision for miscellaneous expenditure in 1923-24 should be limited to Rs. 49,20,000 a reduction of

Rs 84,30,000 and, as we are informed that the bulk of this provision is to pay for stores already on order, we do not recommend any further reduction

This account is of the nature of a suspense account, and revenue is credited with the value of the stores issued to capital. Owing to the restricted capital programme proposed for 1923-24 there will be a reduction of about Rs. 30 lakhs in the credits for stores issued to capital, and the total net saving under this head may be taken at Rs. 54,30,000.

Payments under Postal arrangements with the Lords of His Majesty's Treasury

	Rs.
1913-14, Actual Expenditure	<i>Nil.</i>
1921-22, Rough Actuals	<i>Nil</i>
1922-23, Budget Estimate	3,05,000

24. This payment is in respect of an advance of the contribution payable by India towards the subsidy for the Eastern Mail Service. We understand that the amount of this contribution is at present under consideration with a view to fixing it upon an equitable basis.

We are informed by the Director-General that Rs. 7,00,000 may be required for 1923-24.

Furniture.

	Rs.
1913-14, Actual Expenditure	1,45,970
1921-22, Rough Actuals	3,42,955
1922-23, Budget Estimate	5,42,100

25. The large increase in the expenditure for 1922-23 compared with 1913-14 is due to the rise in prices and the installation of steel shelving in certain offices. No provision is required for steel shelving in 1923-24 and the Director-General has agreed to limit the expenditure on furniture to Rs. 1,66,600, a reduction of Rs. 3,75,500

Contingencies.

	Rs.
1913-14, Actual Expenditure	14,36,568
1921-22, Rough Actuals	24,14,481
1922-23, Budget Estimate	25,31,390

26. The provision under this heading was reduced by Rs. 35,000 in connection with a supplementary grant for printing. The main items included are the purchase of uniforms, articles of stationery not provided by the Controller of Stationery, cooly hire, railway freight etc. An analysis of the expenditure in 1913-14 and estimated for 1922-23 is as follows :-

	1913-14, Actual Expenditure.	1922-23, Budget Estimate.
	Rs	Rs.
Fixed stationery charges	2,38,566	3,76,040
Electric power hot and cold weather charges	1,67,051	4,78,240
Liveries and uniforms	1,22,683	4,71,150
Pay and allowances to sweepers	71,412	1,76,790
County stationery	53,150	1,19,860
Conveyance and packing charges	1,15,432	1,94,350
Miscellaneous and other charges	6,68,274	7,14,960
TOTAL	14,36,568	25,31,390

Fixed stationery charges represent the amount allocated to small Post Offices for stationery not supplied by the Government, and we are informed the provision for 1923-24 will be reduced by Rs. 54,000.

The provision of Rs. 4,78,240 for electric power hot and cold weather charges includes provision for additional installations, and the Director-General informs us that a reduction of Rs. 1,53,300 may be anticipated for 1923-24.

27. The increased cost of liveries and uniforms is due to the recommendations of the Postal Committee of 1920 that all postmen, at any rate, should be supplied with uniforms at the expense of the State, to the free supply of uniforms to the line staff who formerly provided their own clothing and to the higher cost of materials. We have reviewed the scales of clothing, provided for the various classes of employees and have suggested that in certain cases some reductions should be effected and the periods between issues extended. The arrangements for the supply of uniforms are made by the Postmasters General in the various circles for postal and telegraph traffic staff, and by the Directors of Engineering Circles for members of the engineering staff. A comparative statement showing the prices at which contracts were placed for the manufacture of uniforms in the different circles is given in Appendix D and it will be observed that there are large variations in the prices paid in the various circles. We consider that economy would be effected if the contracts for clothing were dealt with in a central office. The Director-General has suggested that the provision for 1923-24 should be fixed at Rs. 4,22,150, a reduction of Rs. 49,000, but we are of the opinion that considerable further economies could be effected and recommend that the expenditure for 1923-24 should not exceed Rs. 4,00,000.

28. The Director-General has also agreed that the provision for country stationery and sealing wax should be limited to Rs. 87,860, saving Rs. 32,000, and that the conveyance and packing charges should be limited to Rs. 1,77,350, saving Rs. 17,000. The total saving proposed by the Director-General under the headings specified amounts to Rs. 3,05,300. For the remaining items, classified as miscellaneous, he suggests further reductions and that the total estimate for contingencies should be limited to Rs. 21,01,390 for 1923-24, a reduction of Rs. 3,95,000. We are of the opinion, however, that further economy under this head could be effected and we recommend that the provision for 1923-24 should be limited to Rs. 19,00,000.

Miscellaneous.

	Rs.
1913-14, Actual Expenditure	9,61,428
1921-22, Rough Actuals	12,83,000
1922-23, Budget Estimate	15,07,000

29. The expenditure under this heading represents the cost of manufacturing postage stamps and post cards, compensation for loss or for damage to insured and other articles, receptacles for foreign mails, and other miscellaneous charges. About Rs. 1½ lakhs of the increased expenditure is due to additional stamps required. Compensation has increased from Rs. 60,000 to 1,80,000 and other miscellaneous charges have increased by about Rs. 50,000. In addition to the budget estimate of Rs. 12,96,000 under this heading, further expenditure of Rs. 3,82,000 was incurred for over-printing of post cards and postage stamps. To meet this expenditure, a supplementary grant of Rs. 2,11,000 was obtained and savings effected under other headings were re-allocated to meet the remaining expenditure required. There should, therefore, be an automatic saving of Rs. 2,11,000 for 1923-24, and, in addition, some saving should be possible owing to the fall in prices. We recommend, therefore, that the expenditure should be reduced by Rs. 2,29,000 and fixed at Rs. 12,78,000 for 1923-24.

Maintenance and repair of buildings.

	Postal buildings.	Telegraph buildings	Total
	Rs.	Rs.	Rs.
1913-14, Actual Expenditure	53,821	684	54,505
1921-22, Rough Actuals	2,62,467	71,923	3,34,390
1922-23, Budget Estimate	4,23,550	2,14,900	6,38,450

30. In 1913-14, the Post Office was only concerned with the repair of small departmental buildings, the repair of important buildings being in the hands of

the Public Works Department. In 1921-22, the cost of repair of buildings was included in the post and telegraph budget, but we are informed that the figures, which were based upon the demands received from Postmasters General, were incomplete and the demand for that year was consequently small. The figures for 1922-23 contain the full demands for the current year. The Director-General has agreed that the expenditure on postal buildings for 1923-24 should be limited to Rs. 73,550, saving Rs. 3,58,000, and the expenditure on telegraph buildings to Rs. 1,14,900, saving Rs. 1 lakh.

Apparatus and Plant.

	Rs.
1913-14, Actual Expenditure	5,05,520
1921-22, Rough Actuals	11,47,964
1922-23, Budget Estimate	7,96,840

31. The large increase in 1921-22 was due to the fact that during the war very few repairs were made. The expenditure for 1922-23 represents the normal expenditure, and, in view of the general fall in prices of materials, we recommend that the provision for 1923-24 be limited to Rs. 7,00,000.

Interest on debt.

	Rs.
1913-14, Actual Expenditure	Nil.
1921-22, Rough Actuals	60,00,000
1922-23, Budget Estimate	66,00,000

32. It was decided in 1921-22 that interest on capital should form part of the working expenses of the Posts and Telegraph Department. As stated previously, we are informed that sufficient allowance has not been made for depreciation in arriving at the capital expenditure on which interest should be charged as part of the working expenses, but we understand that provision of Rs. 68,28,000 is proposed for the budget of 1923-24.

Telegraph Store yards and depôts.

	Rs.
1913-14, Actual Expenditure	2,77,945
1921-22, Rough Actuals	4,41,855
1922-23, Budget Estimate	5,01,950

33. The Director-General has suggested that the provision under this should be reduced by Rs. 17,220. We consider that very few stores will have to be purchased during 1923-24 as the stocks in hand are ample for the requirements of the next twelve months. Further, issues will be reduced owing to the curtailment of work. We observe that the cost of the Alipore Depôt in 1921-22 was about Rs. 3,70,000, equal to 2 per cent on the turnover of Rs. 1,80,00,000, while in the Bombay Depôt the establishment cost Rs. 69,000 or about one per cent on the turnover of Rs. 62,00,000 (see Appendix E). Mobilisation stores of the value of Rs. 44 lakhs are held by the Telegraph department on behalf of the military authorities, who have agreed that a reduction of 30 per cent can be effected. The major portion of the stores released will, no doubt, be available for departmental use, and will consequently enable a further saving to be effected in the purchase of stores, though we have not taken this into consideration.

We consider that the strength of the depôt establishments should be carefully examined as they are, in our opinion, capable of considerable reduction, and we recommend that the provision under this head for 1923-24 be reduced to Rs. 4,00,000, a saving of Rs. 1,01,950.

Telegraph Workshops.

	Rs.
1913-14, Actual Expenditure	58,820
1921-22, Rough Actuals	1,56,738
1922-23, Budget Estimate	1,80,400

34. This expenditure represents the cost of repairing telegraph and telephone apparatus and other revenue expenditure of the Department incurred in the telegraph workshops at Alipore.

With the exception of insulators and wire, practically all the construction stores used by the Telegraph Department, including steel poles, are manufactured at the Telegraph Workshops. In addition, the workshops manufacture all the Morse telegraph apparatus required and carry out all necessary repairs to telegraph and telephone equipments. Many of the stores manufactured are not obtainable in India and we have been supplied with particulars showing that, even where stores are obtainable locally, the cost of manufacture at the workshops, taking all overhead charges into consideration, compares favourably with the price of similar articles obtained elsewhere. We have already referred to the large stocks of stores held by the Department and have suggested a considerable curtailment in the purchases for 1923-24. The bulk of the expenditure of the telegraph workshops is, however, on capital account and does not, therefore, fall under this head, but the Director-General agrees that a reduction of Rs. 30,000 can be effected for 1923-24.

Wireless.

	Rs.
1913-14, Actual Expenditure	53,029
1921-22, Revised Estimate	4,68,390
1922-23, Budget Estimate	4,61,860

35. This service was re-organised in 1921 with a view to its development as a commercial organisation. There are altogether 29 radio stations, but many of these were not designed for commercial conditions and the apparatus is now obsolete. There are 8 coast stations of which 5, *viz.*, those situated at Bombay, Calcutta, Madras, Karachi and Rangoon are said to be essential if telegraph facilities are to be provided between ships in the vicinity of India or Burma and with other parts of the world. Of the remaining 3 stations, those at Victoria Point and Port Blair form the only means of telegraph communication between those places and the main lines, but the station at Diamond Island is of no real value and should be abolished.

We have discussed with the Director-General the question of closing all obsolete stations which can only be worked at heavy loss, and it has been agreed that—

- (1) the stations at Patna, Poona and Ishopore should be dismantled,
- (2) the station at Maymyo should be partly dismantled and placed in charge of a caretaker, the apparatus being maintained in such condition that it will be available for use on 2 months' notice, and
- (3) nine stations, *viz.*, Peshawar, Lahore, Quetta, Delhi, Jutogh, Allahabad, Nagpur, Mhow and Secunderabad should be placed under the care of maintenance parties which will keep the stations in running order and ready for service on six hours' notice.

New stations are being constructed at Mingaladon and Madras which will be capable of carrying out a high speed commercial service in 1923-24. The economies proposed will effect a total saving of Rs. 4,63,000 in 1923-24 of which Rs. 93,630 falls under this head. We are of the opinion, however, that the question of completely dismantling more of the stations should be considered. Many of the existing stations are quite incapable of carrying out commercial traffic and their use would be prohibited by the International Convention within the next three years. We suggest, therefore, that it would be more economical to scrap some of the existing stations and, if necessary, apply any additional savings for the purpose of bringing existing essential stations up to date.

CAPITAL EXPENDITURE.

	Rs.
1913-14, Actual Expenditure	34,31,973
1921-22, Revised Estimate	71,34,861
1922-23, Budget Estimate	1,45,00,000

36. This expenditure represents the outlay of the Telegraph Department on capital account and may be sub-divided as follows :—

	1913-14.		1921-22.		1922-23.	
	Cash.	Stores.	Cash.	Stores.	Cash.	Stores.
	Rs	Rs	Rs	Rs	Rs	Rs
1. Telegraph Lines	5,57,298	17,02,989	8,34,800	40,68,304	15,44,000	74,00,000
2. Telegraph Buildings	6,75,165	...	10,17,724	...	25,08,000	...
3. Apparatus and Plant	1,04,262	3,92,339	62,310	11,51,723	2,53,000	28,00,000
TOTAL	13,36,725	20,95,248	19,14,834	52,20,027	43,00,000	1,02,00,000
		34,31,973		71,34,861		1,45,00,000

37. We have discussed with the Director-General the details of the capital expenditure on telegraph lines included in the current year's budget and, in view of the present financial conditions, he has agreed that the provision for 1923-24 should be reduced to Rs. 61 lakhs, a saving of Rs. 28,44,000 on the provision for 1922-23, and of Rs. 85 lakhs on the original estimates for 1923-24.

The provision for telegraph lines is distributed as follows :—

	1922-23.		PROPOSED ALLOCATION.		SAVING.	
	Cash.	Stores.	Cash.	Stores.	Cash.	Stores.
	Rs.	Rs	Rs	Rs.	Rs	Rs.
Railway	2,38,100	23,07,100	1,68,600	14,60,700	69,500	8,46,400
Canal	65,400	2,07,400	69,300	2,79,600	—3,900	—72,200
Departmental	12,50,500	48,85,500	7,72,100	33,59,700	4,78,400	15,26,800
TOTAL	15,44,000	74,00,000	10,00,000	51,00,000	5,44,000	23,00,000

The expenditure under railways includes the provision of 5,600 additional miles of wire at a cost of Rs. 19,40,500. The rental charged will yield additional revenue of Rs. 1,31,600. The additional mileage to be constructed for canal lines is 486, the cost involved being Rs. 2,17,000, and the additional revenue Rs. 11,664. There will be no working expenses chargeable to the Telegraph Department in connection with either railway or canal lines as those administrations work their own offices. The cost of maintenance, however, is borne by the Telegraph Department and must therefore be set against the revenue received. We have obtained an estimate of the cost of maintaining the new railway and canal lines, respectively, based upon the average cost of line maintenance and allowing 6 per cent. on the capital cost of construction. On this basis the provision of the additional railway lines will involve an annual loss to the Telegraph Department of Rs. 68,830 and the additional canal lines an annual loss of Rs. 8,646. It is evident, therefore, that the Telegraph Department is subsidizing telegraph lines on behalf of the railway and canal administrations, and we consider that the rental charges should be raised to the figure necessary to ensure that no loss is incurred. Under the present circumstances we feel that railway and canal administrations may be making demands for additional lines which can be financially justified on the present rentals but which could not be so justified if proper charges were made.

38. The Director-General has also agreed that the expenditure on Telegraph Buildings for 1923-24 should be limited to Rs. 12,30,000 which has been allocated as follows :—

	Rs
Lump provision for automatic telephone exchange buildings, etc.	5,51,100
Sanitary works at Telegraph Workshops, Alipur	22,900
Provision for minor works	1,57,000
Works in progress	4,99,000
TOTAL	12,30,000

This gives a saving of Rs. 12,73,000.

39. With regard to apparatus and plant it has been agreed that the expenditure for 1923-24 should be limited to about Rs 21,00,000, a reduction of Rs 9,53,000. The expenditure has been allocated as follows :—

	Cash.	Stores	Total.
	Rs.	Rs.	Rs.
Installation of automatic telephones in stock or on order	78,460	12,74,500	13,47,960
New small telephone exchanges	20,900	85,500	1,06,400
First fitting of subscribers' offices	25,000	1,37,500	1,62,500
Apparatus and plant for Railway and Canal offices	53,140	3,00,000	3,53,140
Apparatus and plant for Radio offices	33,000	98,000	1,31,000
TOTAL	2,05,500	18,95,500	21,01,000

It would be false economy to postpone the installation of the expensive automatic telephone apparatus now in stock or on order. We think, however, that further purchases of this apparatus should be postponed until it can be demonstrated that the substitution of automatic exchanges can be justified financially. We were informed that no data were available on which a correct comparative statement could be prepared between the cost of automatic and ordinary exchanges, and we recommend that an enquiry should be made into this question before further expenditure is incurred.

GENERAL.

40. The Director-General has represented to us the desirability of obtaining adequate financial advice and assistance in the management of this important department. We recommend that a Financial Adviser be associated with him, who should be responsible for the control of existing and proposed expenditure. In our opinion, such an arrangement will ensure that new expenditure is not incurred without careful scrutiny and until the probable commercial results have been fully examined.

CONCLUSIONS.

Having reviewed the expenditure of the Posts and Telegraphs Department we recommend that :—

- (1) steps be taken to maintain a strict relation between the telegraph staff employed and the work performed, and to improve the average out-put;
- (2) the use of motor services be restricted in future to large towns and important lines carrying heavy mails;
- (3) outside tenders be obtained for the construction of all large Postal and Telegraph Buildings;
- (4) house-rent and local allowances be reviewed and economic rents charged for all staff accommodation provided, subject to the ordinary rule as to limit of salary;
- (5) the reserve stock of constructional and general stores be limited to 9 months' supply;
- (6) contracts for clothing be dealt with at a central office, the scales of clothing provided be reviewed and the period between issues extended where possible;
- (7) a Financial Adviser be associated with the Director-General to assist in the control of existing and future expenditure;
- (8) the Budget Estimate for 1923-24 for the Posts and Telegraphs Department be limited to Rs. 8,82,00,000 including Rs. 1,22,000 transferred from the Indo-European Telegraphs Department, a reduction of Rs. 1,37,27,000; and
- (9) the capital expenditure on the Telegraph Department be limited to Rs. 94,30,000, a reduction of Rs. 50,70,000.

SUPPLEMENTARY NOTE BY THE HON'BLE MR PURSHOTAMDAS
THAKURDAS ON POSTS AND TELEGRAPHS

Subsidies to Cable Companies.—Regarding the reference to this in paragraph 21 of the Report of the Committee I feel that the Government of India may usefully examine the desirability of some modification of the agreements with these Companies. A detailed examination of the agreements with the Cable Companies may suggest other legitimate and valuable sources of revenue when compared with conditions on which Cable Companies are allowed to operate in other countries.

PURSHOTAMDAS THAKURDAS.

DELHI ;

The 6th February 1923. }

APPENDIX A.

Detailed comparison of the expenditure of the Posts and Telegraphs Department in 1913-14, the Revised estimate for 1921-22 and the Budget estimate for 1922-23.

Head.	Actuals, 1913-14.	Rough Actuals, 1921-22.	Budget Estimate, 1922-23
	Rs	Rs	Rs
I. Salaries	2,77,71,777	5,75,60,834	5,99,05,370
II. Conveyance of mails	54,12,756	72,02,250	83,55,370
III. Office of Account and Audit	10,95,189	24,93,062	27,37,000
IV. Travelling Allowances	11,14,354	25,43,052	23,55,300
V. Stationery and Printing	12,43,843	41,55,533	32,21,000
VI. Postal buildings (charged to Revenue) . . . . .	...	5,83,737	15,19,000
VII. Supplies and Services	5,68,913	10,64,374	12,92,330
VIII. Fixed house rent and ground rent (including rates and taxes)	9,30,045	11,99,377	14,01,160
IX. House rent, local and special allow- ances, hill journey and other allowances	8,50,030	21,92,544	24,69,060
X. Subsidies to Cable Companies . . . . .	...	70,000	2,90,000
XI. Maintenance of Telegraph and Tele- phone lines (annual repairs)	9,24,284	12,64,956	20,95,000
XII. Miscellaneous expenditure (other than Postal buildings) such as Purchase of Stores, etc. (charged to Revenue)	10,17,000	25,64,000	26,05,500
XIII. Payments under Postal arrangements with the Lords of H. M.'s Treasury . . . . .	...	...	3,05,000
XIV. Furniture	1,45,970	3,42,955	5,42,100
XV. Contingencies	14,36,568	24,14,431	25,31,390
XVI. Miscellaneous	9,61,428	12,83,000	12,96,000
XVII. Maintenance and repair of buildings (working expenses) —			
(1) Postal	53,821	2,62,467	4,23,550
(2) Telegraph	684	71,923	2,14,900
XVIII. Apparatus and Plant (working expenses)	5,52,447	11,47,964	7,96,940
XIX. Interest on debt . . . . .	...	60,00,000	66,00,000
XX. Telegraph storeyard and Depôts (excluding salaries)	2,27,299	2,75,140	2,88,950
XXI. Telegraph Workshops (Do.)	—468	36,200	39,200
XXII. Ahgah Workshop (Do.)	2,597	5,920	7,560
XXIII. Wireless (Do.)	6,102	4,68,390	4,61,960
TOTAL	4,43,19,644	9,52,13,219	10,17,33,940

The above figures are those supplied by the Department. The totals are not identical with those given in paragraph 1 of our report, the main differences being that the departmental figures for 1913-14 exclude capital expenditure amounting to Rs. 27,60,154 and other minor adjustments; the 1921-22 figures are rough actuals based upon the later data available since the revised estimate was framed.

APPENDIX B.

Statement showing the average number of telegrams dealt with per officer in 11 important offices in India and Burma based upon counts taken during one week in the busy and slack seasons respectively.

	1913-14.									1921-22.									
	SIGNALLING OPERATIONS.								AVERAGE STAFF.		No. of messages (services messages not included).	SIGNALLING OPERATIONS.							
	AVERAGE PER OPERATOR PER HOUR.				AVERAGE PER TOTAL STAFF PER HOUR.							AVERAGE PER OPERATOR PER HOUR.				AVERAGE PER TOTAL STAFF PER HOUR.			
	Busy season.		Slack season.		Busy season.	Slack season.	Manipulating.	Total.	Busy season.			Slack season.		Busy season.	Slack season.	Manipulating.	Total.		
	Day.	Night.	Day.	Night.					Day.	Night.		Day.	Night.						
Calcutta	16	11	17	9	9	9	278	461	6,222,468	20		17	17	16	8	7	295	650	7,064,783
Bombay	19	13	16	13	10	9	220	411	5,987,355	25	19	20	17	8	7	270	673	7,961,609	
Madras	19	13	18	14	11	10	181	225	3,882,005	21	12	14	9	10	7	136	315	3,700,655	
Agra	21	13	20	14	15	14	116	179	2,525,598	19	15	23	19	11	14	156	249	3,262,361	
Lahore	22	14	21	14	14	14	88	120	1,896,542	23	19	23	18	12	12	130	204	2,934,897	
Rangoon	17	11	13	10	10	9	55	144	2,181,984	19	12	18	14	8	9	66	178	2,401,507	
Rawalpindi	18	14	19	16	11	12	46	61	580,804	21	17	24	23	11	12	62	104	1,265,930	
Karachi	18	10	18	15	9	10	12	98	1,523,681	24	18	20	18	8	8	59	143	1,984,213	
Lucknow	19	15	17	12	13	11	31	52	741,591	23	23	18	17	13	11	36	62	927,538	
Ahmedabad	20	19	16	12	11	9	Not available.			24	20	22	15	13	11	35	63	897,587	
Allahabad	18	12	17	9	11	10	27	54	684,184	16	11	19	13	9	11	37	72	802,578	

Notes—Totals under average staff includes supervisors, operators, non-operators (Telegraphists and Clerks) and represent the average staff for the year, excluding leave reserve. The standard adopted in British Post offices is 24 and 30 operations per manipulative staff in the busy and slack seasons respectively and 14 per total staff.

APPENDIX C.

Stores purchased, issued and sold during the years 1913-14 and 1921-22 and stock on hand at end of each of these years.

Year ended 31st March.	PURCHASES DURING YEAR.	ISSUES DURING YEAR.	STOCK ON HAND AT END OF YEAR.	Number of weeks' consumption which stock represents.	STOCK SOLD OR OTHERWISE DISPOSED OF			REMARKS.
	Value.	Value.	Book value.		Sold.		Written off or otherwise disposed of	
					Book value.	Price realised.	Book value	
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.	
1913-14	47,43,702	45,80,701	{ 43,94,000 6,15,000*	50	1,01,163	62,906	1,34,835	
1921-22	1,84,72,079	1,02,76,659	{ 1,53,39,711 44,09,571*	76	2,04,200	1,09,960	2,72,267	
1922-23, Estimated	99,09,700	1,03,86,000	{ 2,14,65,262† 44,09,571*	107	1,99,275	Not known.	1,70,000	

* Represents value of mobilization Reserves.
† Includes also stores due on indent or under manufacture.

APPENDIX D.

Statement showing the rates at which uniforms were obtained in different Circles for different classes of men during 1921-22.

Circles.	POSTMEN		MENIALS.		TELEGRAPH PRONS		ENGINEERING STAFF.	
	Summer uniforms	Winter uniforms	Summer uniforms	Winter uniforms	Summer uniforms.	Winter uniforms.	Summer uniforms.	Winter uniforms.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs.
Bengal and Assam	*17 12 0	30 0 0	10 0 0	22 8 0	*17 4 0	16 0 0	..	..
Bihar and Orissa	13 12 0	30 0 0	12 0 0	28 8 0	12 12 0	..	..	..
Bombay	9 0 0	25 0 0	9 8 0	22 8 0	*14 2 0	16 12 0	..	..
Burma	*18 0 0	..	*18 0 0	..	*18 0 0	..	..	..
Central Circle	9 0 0	..	8 0 0	..	10 4 0	..	..	..
Madras	*17 0 0	18 10 6	*16 4 0	18 2 6	*17 2 0	18 0 0	..	..
Punjab and North-West Frontier	*16 10 0	22 4 0	*16 10 0	17 15 6	..	22 4 0	..	..
United Provinces	10 2 6	18 1 0	9 11 0	16 13 0	10 2 6	18 12 0	..	..
Director, Telegraph Engineering, Eastern Circle, Calcutta.	..	..	..	..	..	..	12 0 0	20 0 0
Director, Telegraph Engineering, Western Circle, Bombay	..	..	..	..	..	..	12 8 0	..
Director, Telegraph Engineering, Northern Circle, Lahore.	..	..	..	..	..	..	12 0 0	16 0 0
Director, Telegraph Engineering, Southern Circle, Madras.	..	..	..	..	..	..	12 0 0	20 0 0
Director, Telegraph Engineering, Burma Circle, Rangoon.	..	..	..	..	..	..	7 8 0	12 8 0
Director, Telegraph Engineering, United Provinces Circle, Lucknow.	..	..	..	..	..	..	12 0 0	13 12 0

* Note.—Cost of two suits less one or two items in certain cases

APPENDIX E.

Statement showing cost of establishments at Store Depôts, value of stores purchased and issued during 1921-22 and Stock on hand at end of year.

Name of Depôt.	CAPACITY OF STOREYARD.		Cost of Establishment.	Value of receipts during year.	Value of issues during year.	Value of Stock on hand at end of year	Average number of weeks' consumption which stocks represent.	REMARKS.
	Area in square yards.	Approximate number of monthly requirements which can be accommodated.						
Medras	14,300	20	Rs. 31,757	Rs 8,23,219	Rs. 4,44,915	Rs 8,55,973(a)	100	
Rangoon	17,150	24	30,303	10,40,356	4,19,995	9,99,866(a)	123	
Calcutta	23,400	24	8,09,448	1,05,01,359	75,59,051	52,26,710 17,72,475(b)	36	
Karachi	10,270	24	15,855	33,08,917	10,35,201	35,27,553(a) 13,16,444(b)	177	
Lahore	28,750	24	(c)	8,98,980	8,07,152	6,62,474(a) 13,20,652(b)	48	
Bombay	45,000	24	88,761	32,84,801	29,98,219	25,22,119(a)	44	
TOTAL	1,84,870	...	5,16,179	1,98,38,632	1,82,64,683	1,82,05,266	...	

NOTES.—(a) Large stock held said to be due to provision for Budget works which were not carried out owing to shortage of staff.
 (b) Mobilization Reserve Stocks
 (c) Charges for temporary establishment debited to North-West Frontier War 1919.

INDO-EUROPEAN TELEGRAPH DEPARTMENT.

The estimates for expenditure and receipts in 1922-23 compare with the revised estimates for 1921-22 and the actual expenditure and receipts in 1913-14 as follows :—

	Expenditure.	Receipts
	Rs.	Rs.
1913-14, Actual Expenditure	23,18,000	31,89,000
1921-22, Revised Estimates .	45,17,000	53,39,000
1922-23, Budget Estimates .	43,35,000	46,98,000

2. The Indo-European Telegraph Department, the headquarters of which are in London under the direct control of the Secretary of State, maintains and works telegraph systems in the Persian Gulf and Persia, the latter being worked under agreements entered into between His Majesty's Government and the Persian Government.

The systems comprise a network of cables and landlines, the main sections of which are from Karachi to Teheran and from Karachi to Fao (Iraq). The system from Karachi to Teheran is the connecting link between India and the Indo-European Telegraph Company's line which runs from England through Germany and Russia to Teheran. In normal times it formed part of a through route between Europe and India and was the only effective alternative route to that formed by the Eastern Telegraph Company's cable system. During the War the Indo-European Telegraph Company's line ceased to function but we are informed that it is being re-established and will probably be again open for traffic at an early date.

3. There is a working agreement between the Department, the Indo-European Telegraph Company, the Eastern Telegraph Company and the Eastern and South African Telegraph Company known as the Cis-Indian Joint Purse under which the revenue accruing to each of the partners on messages exchanged with India and places beyond India is pooled in agreed proportions. The following statement shews the total receipts for the year 1913-14, and estimated for 1921-22 and 1922-23; also the total capital expended up to the end of each of these years, sterling being converted at the rate of £1 = Rs. 15, in all cases.

Year	Capital expended to 31st March.	RECEIPTS.		
		From Joint Purse.	Other receipts.	Total.
	Rs.	Rs.	Rs.	Rs.
1913-14, Actuals .	1,51,2,000	7,00,000	24,89,000	31,89,000
1921-22, Estimated .	1,84,93,000	29,00,000	23,84,000	53,39,000
1922-23, Estimated .	18,24,800	21,00,000	25,98,000	46,98,000

This table shews that the increased revenue compared with 1913-14 is almost entirely due to payments received under the Joint Purse agreement. These payments represent the excess amounts drawn out by the Department after deduction of the amounts contributed by them to the Joint Purse and there is no doubt that the arrangement has proved very advantageous financially to the Department. It appears that, although the Indo-European Telegraph Company has not functioned since the war broke out, the Eastern Telegraph Company have continued to pay into the pool their share of the receipts. The Indo-European Department and the Government of India have consequently received their full share of the pool and in this way have received since 1913-14 a net payment of £808,440 up to 31st March 1921.

4. The expenditure may conveniently be divided under the main heads shown below:—

	Actuals, 1913-14.	Revised Budget, 1921-22	Budget, 1922-23.
	Rs	Rs	Rs.
Salaries	4,92,118	10,93,840	12,50,711
Travelling allowances	55,037	1,69,560	1,77,760
Other allowances	81,543	6,55,400	7,12,959
Repairs to Lines	46,574	1,88,196	1,32,156
Repairs to Buildings	24,395	1,00,200	84,100
Apparatus and Plant	4,632	1,17,100	1,02,600
Stationery and Printing	14,042	58,000	58,000
Subsidies and Line Rentals	92,232	1,22,304	1,22,304
Contingencies and Miscellaneous	1,14,963	4,68,618	4,78,074
Cable Repairs	8,586	3,83,020	1,75,912
Cable Factory	36,384	1,29,280	79,840
Cable Steamer	1,28,276	2,88,700	2,57,248
For rounding . . . . .	..	—156	—664
Expenditure in England	10,98,782	37,74,000	36,31,000
	12,19,000	8,61,000	7,85,000
Total Expenditure	23,17,782	46,35,000	43,66,000
Less Debits to Capital . . . . .	..	1,18,000	31,000
Total Revenue Expenditure	23,17,782	45,17,000	43,35,000

We now deal seriatim with the expenditure under each main heading.

5. *Salaries*—

	Rs.
1913-14, Actual Expenditure	4,92,118
1921-22, Revised Estimate	10,93,840
1922-23, Budget Estimate	12,50,711

The salaries paid are mainly based upon those for similar grades in the Indian Posts and Telegraphs Department and were increased in 1920 in accordance with the improved rates granted to the staff of the Posts and Telegraphs Department under the recommendations of Mr. Heseltine's Postal and Telegraph Committees.

A comparison of the staff employed in each section and the cost of salaries for 1913-14 and estimated for 1921-22 and 1922-23 is as follows:—

	1913-14, Actuals.		1921-22, Revised Estimates.		1922-23, Budget Estimates.
	No.	Rs.	No.	Rs.	Rs.
Officers (including whole and part time Medical Officers).	23	1,21,643	42	3,27,038	3,63,318
Signalling Establishment.	154	2,47,156	238	5,68,180	6,57,708
Line Establishment .	194	78,805	228	92,920	97,220
Clerical Establishment.	34	23,689	52	61,008	68,244
Servants	150	20,825	170	44,694	49,221
Lump sum for leave arrangements.	..	..	..	..	15,000
TOTAL	555	4,92,118	780	10,93,840	12,50,711

The increase in the number of Officers employed is due mainly to increased responsibilities and to the necessity of providing a better outlet for promotion from the grades of General Service clerks, as formerly these clerks were unable to become Assistant Superintendents until after an average of about 23 years' service. The additional signalling establishment was necessitated by the opening of new routes and additional traffic, the number of paid words carried over the Department's system having increased from 3,812,319 in 1913-14 to 7,095,041 in 1921-22. The average number of words telegraphed annually per man employed shows a slight reduction from 24,755 to 24,636 and we are of the opinion that steps should be taken to improve the out-put per man as better results should be obtainable with the increased traffic now being dealt with. We understand, however, that any reduction of staff is not possible as the full number will be required immediately on the re-establishment of the Indo-European Telegraph Company's route.

The increase in Line establishment from 194 in 1913-14 to 228, or by 18 per cent., appears fully justified by the additional mileage maintained which has increased from 3,295 miles in 1913-14 to 4,593 miles at the present time or by 39 per cent.

6. *Travelling allowances—*

	Rs.
1913-14, Actual Expenditure	55,037
1921-22, Revised Estimate	1,69,500
1922-23, Budget Estimate	1,77,760

The increase under this heading is due to additional staff and improved allowances. In view of the probable re-opening of the Indo-European Telegraph Company's route we make no recommendation.

7. *Other allowances—*

	Rs.
1913-14, Actual Expenditure	81,543
1921-22, Revised Estimate	6,54,400
1922-23, Budget Estimate	7,12,959

The expenditure for 1922-23 compared with 1913-14 may be analysed as follows:—

Allowances.	1913-14.	1922-23.
	Rs.	Rs.
House and Local	28,740	2,87,925
Grain Compensation	5,233	9,700
Famine Prices Compensation	22,573	36,140
Miscellaneous	24,997	2,54,864
Customs . . . . .	...	11,200
Kran Compensation . . . . .	...	1,06,330
Conveyance . . . . .	...	7,300
TOTAL	81,543	7,12,959

The increase in House and Local allowances is mainly due to special local allowances of Rs. 1,17,662 to staff in Signal Offices in the Persian section; to a general increase in house and other allowances, and to increased staff. We are informed that a saving of Rs. 30,000 will be effected in the Persian section for 1923-24.

The Kran compensation allowance will not be required for 1923-24 if the rupee maintains its present exchange value in relation to the Kran. A considerable reduction should also be possible under miscellaneous allowances, some of which will be automatically reduced by the enhanced value of the rupee in relation to the Kran.

In view of the improved conditions now obtaining and the general fall in prices, we think that the total provision for other allowances should be limited to not more than Rs. 4,50,000, a reduction of Rs. 2,63,000.

8. *Repairs to Lines—*

	Rs.
1913-14, Actual Expenditure	46,574
1921-22, Revised Estimate	1,88,196
1922-23, Budget Estimate	1,32,156

The increased expenditure since 1913-14 is due partly to the greater mileage to be maintained but mainly to the increased cost of stores and materials. We are informed that there are no arrears of maintenance and, in view of the large stocks of construction stores held and the fall in prices, we consider that the provision for 1923-24 should be reduced to Rs. 1,00,000, saving Rs. 32,156.

9. *Repairs to Buildings—*

	Rs.
1913-14, Actual Expenditure	24,395
1921-22, Revised Estimate	1,00,200
1922-23, Budget Estimate	84,100

The provision for 1922-23 included some expenditure on buildings for three wireless stations, but the increase since 1913-14 is mainly due to the higher cost of labour and materials. We consider the provision for 1923-24 should be limited to Rs. 70,000, saving Rs. 14,100.

10. *Apparatus and plant—*

	Rs.
1913-14, Actual Expenditure	4,632
1921-22, Revised Estimate	1,17,100
1922-23, Budget Estimate	1,02,600

There are no arrears of maintenance and the increased expenditure since 1913-14 is due mainly to the expensive apparatus required for the wireless offices and to the introduction of improved instruments to deal with increased traffic. We understand that a considerable reduction may be anticipated in the requirements for 1923-24, and recommend that the provision be limited to Rs. 70,000, a reduction of Rs. 32,600.

11. *Stationery and Printing—*

	Rs.
1913-14, Actual Expenditure	14,042
1921-22, Revised Estimate	58,000
1922-23, Budget Estimate	58,000

We are informed that one year's supply of stationery and stores is maintained at Karachi and that in addition the stations are supplied with enough stock to meet their requirements throughout the year until the supplies obtained under the next indent are available. We discussed the matter with the Director at Karachi who agreed that in future only six months' requirements need be kept on hand at the Karachi Depot.

The increased expenditure since 1913-14 is due mainly to increased business and higher prices, but in view of the reduced stock to be maintained and the fall in prices, we consider that the provision for 1923-24 should be limited to Rs. 30,000, a reduction of Rs. 28,000.

12. *Subsidies and Rentals—*

	Rs.
1913-14, Actual Expenditure	92,232
1921-22, Revised Estimate	1,22,304
1922-23, Budget Estimate	1,22,304

The increased expenditure since 1913-14 is due to the higher rental paid to the Indian Post and Telegraph Department for the use of the telegraph line between Nok-Kondi and the Persian Frontier, to higher rental paid to the Persian Government for the Central Persia Line and to an increase in the estimated balance of the Jask Roy ^(B) to be paid to the Persian Government. We understand that these payments are not susceptible of reduction.

13. *Contingencies and Miscellaneous—*

	Rs.
1913-14, Actual Expenditure	1,14,963
1921-22, Revised Estimate	4,63,616
1922-23, Budget Estimate	4,78,074

Included under this head is the provision of Rs. 1,12,000 in 1921-22 and Rs. 1,22,000 in 1922-23 for the maintenance and working of the Meshed-Seistan-Duzdap telegraph line. The Meshed-Seistan section is a Persian Crown line and normally is maintained and worked by the Persian Telegraph Administration. The Seistan-Duzdap section is an Indo-European Telegraph Department line. Both these sections were taken over by the British military authorities during the war and until November 1920, when the Indian Posts and Telegraphs Department took control. It was at one time proposed that the working should be transferred to the Indo-European Department, and provision for the expenditure was therefore made in their 1921-22 and 1922-23 Budget Estimates. We are informed that it has now been decided that the charges will in future be debited to the Indian Posts and Telegraphs Department who have administered the line since it was taken over from the military authorities.

A further charge of Rs. 1,00,000 is included under this heading for the amortization of the capital cost of certain telegraph lines and buildings which revert to Persia at the expiration of our concessions.

Apart from these two items the increase in the expenditure is from Rs. 1,14,963 in 1913-14 to Rs. 2,56,074 required for 1922-23. We have examined in detail the various items making up these amounts and find the increase is mainly due to increased cost of labour and transport, to the provision of uniforms to line staff as in the Indian Posts and Telegraphs Department, to the provision of electric lights and fans at Karachi and Bushire, to provision for additional offices, including 4 new Radio offices, and to other miscellaneous expenditure.

We consider that a substantial saving should be possible under this head and recommend that the total provision for 1923-24 should be limited to Rs. 3,00,000, a reduction of Rs. 1,78,074, including Rs. 1,22,000 transferred to the Indian Posts and Telegraphs Department.

14. *Cable Repairs—*

	Rs.
1913-14, Actual Expenditure	8,586
1921-22, Revised Estimate	3,83,020
1922-23, Budget Estimate	1,75,912

We are informed that it is difficult to forecast the requirements under this head as the expenditure necessary depends upon the number and extent of the interruptions which occur. Since 1913-14 the cable mileage has increased from 1,944 nautical miles to 2,273, but in view of the heavy expenditure which has been incurred during recent years and the fall in prices which has taken place, we think that the provisions for 1923-24 might be limited to Rs. 1,00,000, a reduction of Rs. 75,912.

15. *Cable Factory—*

	Rs.
1913-14, Actual Expenditure	36,384
1921-22, Revised Estimate	1,29,280
1922-23, Budget Estimate	79,840

The factory is used for renewing the armour of cable recovered from the sea and for the manufacture into armoured cable of cable core imported from England. The expenditure in 1921-22 included provision for the replacement of the cable making machine which had become unserviceable. In view of the fall in prices which has taken place we consider the estimate for 1923-24 should be limited to not more than Rs. 70,000, a reduction of Rs. 9,840.

16. *Cable Steamer—*

	Rs.
1913-14, Actual Expenditure	1,28,276
1921-22, Revised Estimate	2,88,700
1922-23, Budget Estimate	2,57,000

The Cable Steamer "Patrick Stewart" is 1,100 tons gross and originally cost £27,362. She is now 43 years old and is expected to last another two years.

A comparison of the expenditure is 1913-14 and estimated for 1922-23 is as follows :—

	1913-14, Actuals.	1922-23, Budget Estimate.
	Rs	Rs
Salaries, wages and allowances	60,370	1,06,164
Provisions	17,376	28,000
Moving fees and Pilotage	2,392	6,000
Coal	8,604	54,500
Stores	17,381	40,000
Repairs	21,864	14,000
Apparatus and Plant . . . . .	...	6,000
Miscellaneous	839	2,584
TOTAL	1,28,276	2,57,248

We ascertained that the budget provision for coal and stores was based upon the average of the last 3 years and that, whereas Rs. 55,000 was provided for the purchase of coal in 1921-22, the actual book value of the coal used was only Rs. 27,745. Similarly with stores the provision for 1921-22 was Rs. 40,000 and the book value of the stores issued only Rs. 31,590. Although the actual consumption of coal and stores was far less than the Budget Estimate the provision made for 1922-23 was coal Rs. 54,500 and stores Rs. 40,000. The total value of coal and stores purchased and issued in 1913-14 and in 1921-22 and the stock in hand at the end of each of these years is given in Appendix A. In view of the stocks held, the large difference between the value of the stores issued and the budget provision, and the fall in prices which has taken place we consider the estimate for coal and stores for 1923-24 should be curtailed. Reductions should be made in salaries, wages, allowances and in the cost of provisions on account of falling prices and we recommend that the total provision for 1923-24 should be limited to Rs. 1,57,000, a reduction of Rs. 1,00,000.

We have also examined the log of the "Patrick Stewart" for the period from September 1918 to July 1922 inclusive, and find that during these 47 months the vessel was lying at her moorings in Karachi harbour for no less than 968 days, and that, apart from the time spent going to and from the various places where repairs were required, the actual time spent on repairs was only 113 days.

We consider that the possibility of coming to a favourable arrangement with some commercial cable company which has a steamer near at hand, for the repair of the Department's cables should be explored before any steps are taken to replace the existing steamer. This suggestion is subject to the decision which may be arrived at on the larger question raised in paragraph 18.

17. *Expenditure in England* (sterling converted at £1=Rs. 15)—

	Rs.
1913-14, Actual Expenditure	12,19,000
1921-22, Revised Estimate	8,61,000
1922-23, Budget Estimate	7,33,000

The expenditure in England in 1922-23 consists of Rs. 52,500 for General Superintendence in the London Office, the staff of which has not increased since 1913-14, and Rs. 6,82,500 for payments to the Eastern Telegraph Company for their share of through traffic collected by the Department.

18. *General*—

We are informed that the Government of India have proposed the immediate transfer of control of the Department from the Secretary of State to the High Commissioner and an inquiry into the question whether the work of the

Department cannot be carried on by the Indo-European or some other British Company. Considerable difficulty must inevitably be experienced in the administration and control of this undertaking by a Government Department either in England or India, and if it can be disposed of on favourable terms, we are of the opinion that the proceeds could be more usefully employed in meeting the many urgent needs for productive capital expenditure in India. We recommend that until a decision has been arrived at on this proposal, no expenditure of a capital nature should be incurred.

19. We also think that a proper system of commercial accounts should be introduced. The form in which the accounts of this Department are now prepared is difficult to follow, expenditure in many cases being shown in reduction of receipts and *vice versa* and various items being included under inappropriate headings.

CONCLUSIONS.

Having reviewed the expenditure of this Department, we recommend that—

- (1) steps be taken to maintain a strict relation between the telegraph staff employed and the volume of work performed and to improve the present output per operator;
- (2) the necessity for the various existing allowances be examined with a view to curtailment;
- (3) the arrangements for purchase and control of stationery and stores be examined and placed on a proper footing, and the stocks held reduced to essential requirements;
- (4) the question of disposing of the Government lines to a commercial concern be explored, and if the undertaking is not disposed of, endeavour be made to come to a favourable arrangement with some commercial cable company for the repair of the Department's cables and so admit of the sale of the "Patrick Stewart"; and
- (5) the Budget estimate for 1923-24 for the Indo-European Telegraph Department be limited to Rs. 36,01,000, a reduction of Rs. 7,34,000, including Rs. 1,22,000 to be transferred to the Indian Posts and Telegraph Department, giving a net saving of Rs. 6,12,000.

APPENDIX A.

Statement showing Stores purchased and issued during the year 1921-22 and Stock on hand at the end of 31st March 1922.

Nature of Stores.	Value of purchases during the year.	Value of issues during the year.	Stock on hand at the end of March 1922.	Departmental Note.
	Rs	Ra.	Rs	
Construction Stores	71,372	86,829	4,81,966*	*Includes Rs 1,62,300 on account of wire and Rs 70,500 on account of insulators, both of which articles are unprocureable in India and therefore it was essential to keep a good reserve during the war. Of the Rs 2,00,113 in hand at the end of March 1921, Rs 1,62,000 represents the value of paper tape, and articles essential for working the telegraph system and unprocureable in India. A large stock was therefore kept in hand during the war when the consumption was very large (Rs 46,000 represents oiled tape, sent out from England when the supply of tape from Belgium failed at the outbreak of war. This has now been condemned.) †Includes Rs 1,28,200 wire and Rs. 33,600 cable core, both of which articles are unprocureable in India and of which it was essential to keep a good supply in hand. These were sent to Naiband for the construction of a line from Bunderabbas to Kerman, the work was stopped at the Peace and the stores are kept at Naiband in anticipation of the construction of lines from Bunderabbas to Langa and Jask.
Miscellaneous Stores	77,113	52,690	2,00,113	
Tools	4,250	1,998	8,245	
Battery Materials	4,402	36,980	71,353	
Oils and Paints	3,699	6,366	11,575	
Lamps	595	1,029	1,590	
Drugs and Chemicals	3,296	1,059	3,584	
Metals and Marine Stores	2,777	2,792	6,256	
Instrumente	27,539	62,368	31,099	
Furniture	3,551	3,282	2,959	
Surplus Stores	2,11,676	5,41,083	2,60,004†	
Wireless Stores	10,460	11,584	12,793	
Stores lying at Bushire. Returned from line as surplus stores	36,700	11,570	87,605	
Stores lying at Naiband. Returned from line as surplus stores	7,554	20,629	1,12,804	
Ship Stores	30,214	31,490	5,876	
Coal	42,896	27,745	15,150	

MINUTE OF DISSSENT BY THE HON'BLE MR. PURSHOTAMDAS
THAKURDAS ON INDO-EUROPEAN TELEGRAPH
DEPARTMENT.

This is a commercial Department and the figures from 1913-14 submitted to the Committee show that it has been remunerative to the Government of India, having yielded, on the capital sunk, a return varying from 4.46 per cent. in 1913-14 to 14.58 per cent. in 1919-20 after allowing for a sinking fund of 1 per cent. for depreciation of plant. The capital sunk in this Department is shown to be Rs. 1,78 lakhs in 1920-21 and yielded in that year a net return of 9.76 per cent. after allowing depreciation as above, and debiting to the revenue account Rs. 1,00,000, which is to be written off the capital account annually by way of amortization of assets valued at Rs. 20,57,784, which latter will revert to the Persian Government on the termination of the present Agreements. However no commercial accounts are kept by this Department

2. The headquarters of the Department are in London under the direct control of the Secretary of State. This is considered necessary because questions arising under the agreements with the Persian Government coming through His Majesty's Minister at Teheran involve discussion and decision through the Foreign Office with the Treasury, and such questions are regarded as most conveniently conducted by means of the India Office machinery. Questions arising on Joint Purse matters are also regarded as capable of being more conveniently settled by discussion with Telegraph Companies in London than by correspondence to and from India. In 1888 efforts were made to control the Department from India, but the Committee was informed that this was not found successful. In 1893 the control was retransferred to the Secretary of State. The Government of India have desired by a Despatch dated the 20th July 1922 that the control should be transferred to the High Commissioner for India in London.

3. My observations on this Department are based chiefly on the statement submitted to the Committee by the Director-in-Chief of the Indo-European Telegraph Department, who is stationed in London, with the India Office. The Committee were unable to go into the expenditure of this Department in detail as no one in the Secretariat at Delhi could give further information in connection with this Department; and the Director, Persian Gulf Section, who interviewed the Committee could not give detailed information regarding the Persian Section of the Department.

4. The difficulty in retaining the control of the Department in India appears to be in two directions:—

(i) *Questions arising under agreements with the Persian Government.*

These can be dealt with either by the Persian Consul in India or by one of the Consuls of the Government of India in Persia as long as they have one. Control of the Department necessary in India. If these questions involve the interests of the British Treasury, and necessitate discussion with the Treasury in London, they can be handled by the High Commissioner for India in London under instructions from the Government of India.

(ii) *Questions concerning the Joint Purse and involving discussion with Telegraph Companies in London.*

These can be handled by the High Commissioner on behalf of the Government of India in London.

An important reason for the headquarters of the Department being in India is that the main expenditure of the Department is in India and the staff

is recruited in India. The following figures give the distribution of the expenditure between England and India:—

	Expenditure in India	Expenditure in England (at Rs. 15=£1)	Total
1913-14 (Accounts)	Rs. 10,98,782	*Rs. *59,132	Rs. 11,57,914
1921-22 (Revised Estimate)	29,91,000	39,000	30,30,000
1922-23 (Budget)	29,82,000	(10=£1) 35,000 (10=£1)	30,17,000

It will be seen that a little more than 1 per cent. of the total is being spent in England. I therefore recommend that in the interests of efficient management and better control over expenditure, the headquarters of the Department be with the Government of India at Delhi, and I am not aware of any valid reasons why this should not be feasible now.

5. Regarding what my colleagues mention in paragraph 13 of the Report I have not been able to understand the reasons why the Indian Post and Telegraph Department should have taken over the Meshed-Seistan-Duzdap Telegraph Line, entailing a cost of upkeep amounting to Rs. 1,12,000 in 1921-22 and Rs. 1,22,000 in 1922-23. The Meshed-Seistan section of this line belonged to the Persian Government line normally till the war and was controlled by the military authorities during the period of the war. About 1919 it was made over to the Indian Post and Telegraph Department and it appears to be a section that is unremunerative.

Further, the Department shares half the cost of the three wireless stations at Bahrein, Bushire and Henjam with the British Government. This amounted to Rs. 80,000 in 1921-22 and Rs. 1,09,000 in 1922-23. In addition the Department bears the whole cost of the wireless station at Linga, which amounted to Rs. 35,000 in 1921-22 and Rs. 8,660 in 1922-23. These wireless stations, the Committee are informed, were used for communicating with ships and with Bahrein, where there is no cable. A complete examination of the liabilities which are at present incurred by the Government of India in connection with this Department, and particularly in connection with the Meshed-Seistan line and the Wireless Stations in Persia, appears to be necessary.

6. The details regarding the Joint Purse agreement and the advisability of extending or restricting the activities of this Department in Persia require to be thoroughly examined and reviewed. A searching enquiry into all the details connected with this Department by a Committee of the Legislature in India should prove quite useful.

7. My colleagues recommend an examination of the possibility of selling this concern to a British Company. I cannot agree with them. I am not aware if the circumstances, under which the telegraph lines under this Department were laid at the expense of the Government of India, have changed so as to warrant the idea of selling same or of leasing them to a British Company. The Standing Finance Committee of the Legislature in India would be the proper party to examine the circumstances and find out whether it is advisable or necessary to sell or lease a Department, which is remunerative to the Government of India. This question further involves various agreements with the Persian Government. Until they are completely clear and until other relevant points are gone into with considerable thoroughness, I hesitate to agree with my colleagues in their recommendation to sell this concern.

Agreement with Committee regarding retrenchment proposals.

8. I agree with my colleagues regarding their proposals for retrenchment.

PURSHOTAMDAS THAKURDAS.

DELHI;

The 6th February 1923.

IRRIGATION.

The estimates for expenditure and receipts in 1922-23 compare with the revised estimates for 1921-22 and the actual expenditure and receipts in 1913-14 as follows.—

	Expenditure.	Receipts.
	Rs.	Rs.
1913-14, Actuals	14,70,000	10,14,000
1921-22, Revised Estimate	27,11,000	19,96,000
1922-23, Budget Estimate	24,06,000	20,09,000

2. The expenditure is subdivided under the main heads shown below :—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
Working expenses	4,23,000	12,97,000	13,02,000
Interest on debt for which capital accounts are kept	6,51,000	9,39,000	9,51,000
Other revenue expenditure	83,000	1,37,000	1,18,000
Construction of irrigation works from revenue	3,13,000	3,38,000	35,000
TOTAL	14,70,000	27,11,000	24,06,000

3. Irrigation is a provincial subject and the above figures relate solely to irrigation works in areas under the jurisdiction of the Central Government. The more important of these are the irrigation canals situated in the North-West Frontier Province, the particulars of which are given in the following table :—

Name of Canal.	ESTIMATES FOR 1922-23.		
	Capital outlay to end of year.	Gross receipts.	Working expenses.
	Rs.	Rs.	Rs.
Upper Swat Canal	2,19,53,000	9,92,000	7,38,000
Lower Swat Canal	42,91,000	7,93,000	1,89,000
Kabul River Canal	12,82,000	2,70,000	88,000
Paharpur Canal	9,21,000	31,000	71,000
TOTAL	2,84,47,000	20,86,000	10,86,000

4. The large increase under the head of working expenses from Rs. 4,23,000 in 1913-14 to Rs. 13,02,000 estimated for 1922-23 (*vide* the table in paragraph 2) is mainly due to the fact that the Upper Swat Canal was only opened for irrigation in an incomplete state in 1913-14. This project has failed as a productive work, the net receipts being insufficient to cover the interest charges, but it is said to have had a valuable civilising influence on the tribes of the Upper Swat. The Lower Swat and Kabul River Canals are both useful and remunerative works, but the results of the Paharpur Canal have been disappointing, and the average annual loss on the working of this canal has been Rs. 27,000. It has now been decided to abandon about 20 miles of the lower part of the canal, the control of the remainder being transferred to the district authorities, and it is expected that maintenance charges will be reduced and the canal will pay its way. We are informed that, as the result of the establishment of irrigation on the Upper Swat and the transfer of the Paharpur Canal, it will shortly be possible to close down one out of three irrigation divisions and to effect a reduction of about Rs. 40,000 in establishment charges.

5. The balance of the outlay under "Working expenses" and under "Other revenue expenditure" is incurred on minor works in Baluchistan, Ajmer and elsewhere.

6. It is anticipated that the receipts from Irrigation in 1923-24 will amount to Rs. 21,94,000, and the expenditure to Rs. 22,28,000, the deficit under this head being thus reduced to Rs. 34,000.

7. *Capital expenditure not charged to revenue.*—It is anticipated that Rs. 1,30,000 only will be required for 1923-24 compared with a provision of Rs. 2,69,000 in the budget for 1922-23. This expenditure is required for small improvements and extension of existing works and we make no recommendation.

CONCLUSION.

A reduction of Rs. 1,78,000 is anticipated in 1923-24 in the expenditure on irrigation and we recommend that the closing down of one irrigation division be expedited, and a further saving of Rs. 40,000 effected, giving a total reduction of Rs. 2,18,000.

PART IV.**GENERAL ADMINISTRATION.**

The estimate for 1922-23, including a supplementary estimate for Rs 2,76,000, compares with the revised estimate for 1921-22 and the actual expenditure for 1913-14 as follows :—

	Rs.
1913-14, Actual Expenditure	1,05,22,000
1921-22, Revised Estimate	1,90,22,000
1922-23, Budget Estimate	1,98,57,000

2. This expenditure is subdivided under the main heads shown below :—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
GOVERNOR-GENERAL AND STAFF	10,63,000	12,25,000	12,82,800
EXECUTIVE COUNCIL	5,50,000	5,40,000	5,33,000
LEGISLATIVE BODIES	1,71,000	7,00,000	8,50,000
SECRETARIAT	34,05,000	64,52,000	70,31,400
ATTACHED OFFICES	5,04,000	10,51,000	11,34,800
PAYMENTS TO LOCAL GOVERNMENTS		50,000	44,000
EXPENDITURE IN MINOR ADMINISTRATIONS	9,02,000	21,13,000	22,12,000
DEDUCT LUMP CUT MADE BY ASSEMBLY . . . . .		...	5,44,000
ADD SUPPLEMENTARY GRANT . . . . .		..	2,76,000
	65,95,000	1,21,31,000	1,28,20,000
EXPENDITURE IN ENGLAND AT Rs 15 = £1	39,27,000	68,91,000	70,37,000
	1,05,22,000	1,90,22,000	1,98,57,000

We now deal with the various main heads under which the account is divided.

GOVERNOR-GENERAL AND STAFF.

	Rs.
1913-14, Actual Expenditure	10,63,000
1921-22, Revised Estimate	12,25,000
1922-23, Budget Estimate	12,82,000

3 In addition to expenditure included in the civil estimates the following expenditure in connection with His Excellency the Viceroy's establishments was borne on the military estimates for 1922-23 :—

	Rs.
Band establishments	1,22,000
Bodyguard	2,24,000
Personal staff (including Military Secretary)	90,000

His Excellency the Viceroy has informed us that, in view of the present financial situation, he has given instructions to reduce the estimate for his bodyguard by Rs. 40,000 and for his band by Rs. 42,000, thus saving Rs. 82,000, compared with the budget grants for 1922-23.

EXECUTIVE COUNCIL.

	Rs.
1913-14, Actual Expenditure	5,50,000
1921-22, Revised Estimate	5,40,000
1922-23, Budget Estimate	5,33,000

4. This expenditure includes the salaries of Members of the Executive Council and their actual travelling expenses. The Bengal Retrenchment Committee, of which our colleague Sir Rajendra Nath Mukerjee was Chairman,

has suggested that Indian Members of the Bengal Executive Council might well receive a third less salary than the European Members as the latter have greater expenses to meet, being away from their homes.

Our colleague thinks the recommendation of the Bengal Committee might be equally applied to the Executive Council of the Governor-General and at his request we draw attention to the subject.

We are informed that, in the case of the residences allotted to the members of the Executive Council in Simla, the uniform fixed rent charged is not in all cases on an economic basis and that there is a loss also incurred in respect of houses occupied by them in Delhi. We understand that the question of revising these rents is under consideration.

LEGISLATIVE BODIES.

	Rs.
1913-14, Actual Expenditure	1,71,000
1921-22, Revised Estimate	7,00,000
1922-23, Budget Estimate	8,50,000

5. The large increase which has taken place in expenditure since 1913-14 is due to the appointment of full-time Presidents, the expansion of the Councils, the longer sittings held under the reformed constitution, and the grant of more liberal allowances to members present in Delhi and Simla. The bulk of the increase is inevitable, but we feel that the matter of reduction or otherwise in travelling and other allowances is one that should be left to the Legislature, whose Members for the most part, it must be borne in mind, are unpaid.

SECRETARIAT.

	Rs.
1913-14, Actual Expenditure	34,05,000
1921-22, Revised Estimate	64,52,000
1922-23, Budget Estimate	70,31,000

6. This expenditure is sub-divided among the various departments as follows :—

	1913-14.	1921-22.	1922-23
	Rs.	Rs.	Rs.
Foreign and Political	7,16,900	10,40,500	10,42,900
Home	3,24,400	6,61,400	6,41,800
Legislative	2,27,100	6,56,200	8,07,900
Education and Health	2,78,900	4,36,200	4,70,700
Finance (Ordinary)	4,10,200	6,74,500	6,91,200
Finance (Military)	1,55,900	6,05,800	6,44,100
Revenue and Agriculture	2,44,800	3,31,900	4,35,800
Commerce	3,46,100	4,98,600	4,89,300
Industries	3,46,100	5,10,000	5,90,400
Army	3,34,600	6,19,900	7,34,600
Public Works	3,21,100	4,17,000	4,82,700
TOTAL	34,05,000	64,52,000	70,31,400

An endeavour was made to meet the lump cut of Rs. 5,44,000 made by the Legislative Assembly under the head of "General Administration" by savings in the individual Secretariat departments and the attached offices, and these departments and offices in consequence have reduced their estimated expenditure for the current year to about Rs. 4,31,000 below their original budget demand as set out above and in the subsequent table for attached offices. The nature of the reductions effected will be referred to under the head of the department concerned. A supplementary grant of Rs. 2,76,000 was however

necessary as the reductions made were less than the cut required, and moreover, additional staff was necessary for preliminary work done in India for the Retrenchment Committee and some expenditure was required for publicity propaganda work undertaken in the provinces on behalf of the Central Government.

7 Attention has been drawn both in the Legislature and the press to the fact that the allocation of business among departments has not been modified to meet the altered relations between the Central Government and the Provinces as a result of the Reforms and that in many cases the Secretariat of the Central Government is being maintained at its pre-reform standard and, in the case of some departments, augmented. Education, medical administration, agriculture, veterinary services and industries are now transferred subjects under the Devolution Rules, and in consequence, the occasions for the exercise by the Central Government of its powers of superintendence, direction and control in respect of such subjects, except in so far as they affect the minor administrations, that is to say the administrations which still remain directly under the control of the Central Government, have now been greatly reduced. We are chiefly concerned with the matter from the point of view of the economies which could be effected by a re-grouping of the departments and a redistribution of work consistently with the principles underlying the Reforms scheme and we shall revert to this question shortly, after we have considered the expenditure of the individual departments as at present constituted. We shall first, however, refer briefly to a few general matters which affect all departments.

8. The question of pay of establishments generally including those of the superior staff is dealt with under Pay and Allowances. As regards the superior clerical establishment, we think that the pay, though liberal, is not excessive in view of the responsible character of the work done and the qualifications required. We are informed, however, that the lower division clerks doing work of a routine character can attain a maximum pay of Rs. 350 per mensem, a very high rate compared with that prevailing in Provincial Secretariats; for example in the Punjab the corresponding maximum is Rs. 150 a month. We recommend that for future recruits the rates should be substantially reduced, and that where present incumbents are not qualified for more responsible work their promotion should be stopped at the existing efficiency bar.

9. We understand that considerable reductions have been made by the various departments during the current year in their expenditure on contingencies, supplies, travelling allowances, telegrams, etc., in order to meet the lump cut made by the Assembly. It would appear, therefore, that there was considerable scope for economy in this direction and we recommend that this class of expenditure should be carefully scrutinised with a view to its further reduction. Thus, we understand that there are at present some 1,200 peons in the Government of India Secretariat and attached offices, a number based on a liberal scale fixed when the cost of peons was much lower and when telephonic and other communications were very limited. It is understood that a reduction of 25 per cent. in numbers has been suggested which would save Rs. 75,000 without serious inconvenience, and we recommend that this reduction should be given effect to and also that the present clothing scale should be examined. We have, in dealing with individual departments, taken into account economies of the kind referred to in this and the two following paragraphs.

10. The cost of the telegrams despatched by the departments during 1921-22 was approximately Rs. 3,33,000, the heaviest expenditure being incurred by the Foreign and Political Department (Rs. 1,35,000), the Army Department (Rs. 60,000), and the Home Department (Rs. 54,000). Part of the increase which has taken place since 1913-14 is due to increased rates, but we are of the opinion that a large curtailment in the number and length of telegrams could be effected without any loss of efficiency. We recommend that the provision for 1923-24 should be materially reduced.

11. We are informed that the present annual cost of the Delhi-Simla move is approximately Rs. 3,87,000, a part from incidental cost on account of Raisina conveyance charges, house rent and separation allowance. We think

a substantial reduction should be effected by restricting the number of officers and the amount of establishment and records moved down from Simla

We now deal individually with the expenditure of the existing departments.

12. *Foreign and Political Department—*

	Rs.
1913-14, Actual Expenditure	7,16,900
1921-22, Revised Estimate	10,40,500
1922-23, Budget Estimate	10,42,900

This department has proposed savings of about Rs 47,000 for 1923-24. The clerical establishment has increased from 102 before the war to 123 at the present time. We have ascertained that the ratio of clerks to receipts and issues is high and we consider that establishment should be reduced to pre-war numbers, saving a further Rs. 50,000. The expenditure in the current year's budget for contingencies, Rs. 1,64,000, includes Rs 1,00,000 for postage and telegrams which we consider excessive; we think the total expenditure on contingencies for 1923-24 should be reduced by about one-third, or, say Rs. 50,000. The total reduction which we recommend together with the saving proposed by the department is therefore Rs. 1,47,000.

13. *Home Department—*

	Rs.
1913-14, Actual Expenditure	3,24,400
1921-22, Revised Estimate	6,61,400
1922-23, Budget Estimate	6,41,800

Savings of about Rs. 42,000 will be effected by reductions proposed by the department. Though no large further savings can be secured, owing to the increase of work as the result of the Reforms, economies saving about Rs. 25,000 can we think be made by reducing the number of pcons and the expenditure on contingencies, travelling allowances, etc.

The appointment of Inspector of Office Procedure, costing Rs. 30,000, was created on the recommendation of the Llewellyn Smith Committee to re-organise office procedure in the Secretariat with a view to greater efficiency and economy. We understand that very little has so far been done in this direction, the officer having been diverted to miscellaneous duties. We have had evidence that the present procedure is in many ways defective and that both economy and expedition could be secured by more businesslike methods of disposal of receipts and in other ways. We consider, however, that this matter should be taken up by the heads of the departments concerned in giving effect to our present recommendations, and that subsequently, after a reasonable period, an officer of the Finance Department should be deputed to examine the arrangements in force and the possibilities of effecting further economies in staff and other office expenditure. If this course is adopted the continuance of the appointment of Inspector of Office Procedure under the Home Department will be unnecessary. Its abolition will secure a saving of Rs. 30,000, and we recommend that the budget for 1923-24 should be fixed at Rs. 5,45,000, saving Rs. 97,000, including Rs. 42,000 proposed by the department.

14. *Legislative Department—*

	Rs.
1913-14, Actual Expenditure	2,27,100
1921-22, Revised Estimate	6,56,000
1922-23, Budget Estimate	8,07,900

The establishment of this department has increased since 1913-14 as follows:—

	1913-14	1922-23.
Administrative staff	3	10
Clerical	32	93
Servants	62	100
TOTAL	97	203

The department attributes to increased work connected with the Reformed Councils no less than Rs. 3,67,000 of the increase in cost which has taken place. We consider, however, that the present staff, especially the superior staff, is excessive, comprising as it does one Secretary, two Joint Secretaries, two Deputy Secretaries, two Officers on Special Duty, one Solicitor and two Assistant Solicitors. We recommend that a Deputy Secretary should be dispensed with, saving Rs. 24,000. The Peace Treaty Branch and Local Clearing Office are temporary organisations arising out of the war, and, though the duties attaching to them are likely to continue for some time, we consider that they should be amalgamated and one of the two officers dispensed with, saving approximately Rs. 20,000. As for the Solicitors' branch, we understand that a vacancy is likely to occur within a year; occasion should then be taken to reduce the appointments to two, saving Rs. 15,000. Allowing for the abolition of these appointments, for a saving of Rs. 41,000 already effected by the department to meet the lump cut made by the Assembly, and for general reductions in peons, temporary establishment and other contingencies, we recommend that the budget for 1923-24 be fixed at Rs. 7,00,000, saving about Rs. 1,08,000.

15. *Department of Education and Health*—

	Rs.
1913-14, Actual Expenditure	2,73,900
1921-22, Revised Estimate	4,36,200
1922-23, Budget Estimate	4,70,700

In view of the essential modification of the position of the Central Government *vis-à-vis* the Provinces under the Reforms Scheme in respect of education and medical administration, which are now transferred subjects over which the Government of India exercise a very limited control, we do not consider that there is any justification for the retention of the Educational Commissioner, the Bureau of Education, or the Central Advisory Board, costing about Rs. 1,00,000 or, indeed, for the continuance of the department as a separate entity. We are informed that savings of Rs. 17,000 have been effected in the current year by the abolition of the Curator of the Bureau of Education and other minor economies, but we feel that the department is overstaffed for the duties which it has to perform. We deal further with the matter in considering the larger economies to be obtained by re-grouping departments.

16. *Finance Department (Ordinary Branch)*—

	Rs.
1913-14, Actual Expenditure	4,10,200
1921-22, Revised Estimate	6,74,500
1922-23, Budget Estimate	6,91,200

This department has already effected reductions of Rs. 35,000 to meet the cut made by the Legislative Assembly and of Rs. 57,600 by the abolition of a post of Joint Secretary, by the amalgamation of two branches and by other economies, or, in all Rs. 92,600. Allowing for further reductions in the number of peons which it may be possible to make, and in the cost of telegrams, etc., we recommend that the budget for 1923-24 should be fixed at Rs. 5,90,000, a saving, including what the department has already effected, of Rs. 1,01,200 compared with the original demand for 1922-23.

17. *Finance Department (Military Finance Branch)*—

	Rs.
1913-14, Actual Expenditure	1,55,900
1921-22, Revised Estimate	6,05,800
1922-23, Budget Estimate	6,44,100

This department has been greatly expanded since 1913-14 with the object of securing effective check over expenditure throughout the intricate organisation of the Army in India. With a contraction of the activities of the various administrative services of the Army it should be possible to effect a material reduction in these Headquarter charges. The Financial Adviser has surrendered Rs. 44,000 to meet the lump cut made by the Assembly, but we

consider that further reductions in clerical and menial-staff and in contingencies, etc., should be made. Ultimately a much larger reduction should be possible and, while we recognise that a considerable amount of temporary work may result if our recommendations in respect of army administration are given effect to, the question of further economies should be kept steadily in view. In these circumstances we recommend that the budget for 1922-23 should not exceed Rs. 5,75,000, a saving of Rs. 69,000 on the original demand for 1922-23.

18. Revenue and Agriculture Department—

	Rs.
1913-14, Actual Expenditure	2,44,800
1921-22, Revised Estimate	3,41,900
1922-23, Budget Estimate	4,35,800

The department has effected a reduction of Rs. 24,000 in its original demand for 1922-23, but in view of the modified relations between the Government of India and the Local Governments under the Reforms Scheme, in respect of land revenue, agriculture, civil veterinary and forests with which this department deals, we consider that there is no justification for its retention as a separate department. We deal with this question later in paragraphs 22—24

19. Commerce and Industries Departments—

	Commerce Department	Industries Department.	Total
	Rs.	Rs.	Rs.
1913-14, Actual Expenditure	3,46,100	—	3,46,100
1921-22, Revised Estimate	4,98,600	5,10,000	10,08,600
1922-23, Budget Estimate	4,89,300	5,90,400	10,79,700

In 1913-14 Commerce and Industries formed a single department. The subjects dealt with included posts and telegraphs and external emigration which have since been transferred to the Public Works and the Revenue and Agriculture Departments respectively. In 1917 to meet war requirements, the Munitions Board was created, which, when the war came to an end, was converted into the Board of Industries and Munitions. In 1921, no Munitions Board being required, the Board of Industries and Munitions was converted into a separate Department of Industries. It is doubtful whether at that time sufficient regard was had to the fact that, under the Reforms Scheme, the development of industries had been classified as a provincial transferred subject, save in cases where such development by central authority is declared, by order of the Governor General in Council made after consultation with the Local Governments concerned, to be expedient in the public interest. We understand that no such declaration has ever been made in respect of any industry. The following table shows the increase in the administrative and clerical staff (including temporary staff) since 1913-14 which has resulted from the separation of the departments :—

	1st APRIL 1914	1st APRIL 1922		
	Commerce and Industry.	Commerce	Industries	Total
Administrative staff	4	4	7	11
Clerical staff	65	70	74	144

The more important subjects now dealt with by the Commerce Department are foreign trade, Merchant Shipping Act, ports and harbours, customs, etc. There is little prospect of diminution of work except by delegation, and we believe that, in present conditions, great advantages could be secured by freeing the Secretariat proper from the functions of detailed administrative control exercised by it in the past. In the United Kingdom and the

United States, Customs are administered by the Treasury, and the Tariff in the former country by the Board of Trade and in the latter by the Tariff Commissioner and the Department of Commerce. We consider that a similar arrangement should be adopted in India and we recommend that the scope of the present Board of Inland Revenue under the Finance Department be enlarged to include Customs, Salt, Opium and also Excise and Stamps so far as the Central Government is concerned with these subjects. Tariffs would be administered by the Department responsible for Commerce as at present. This proposal should make it possible to eliminate a large amount of work in the Secretariat, and, though the saving effected in the Secretariat budget might be less than the cost of the new appointment, the balance will be more than covered by economies in other directions. For example, the fact that the Board will be the appellate authority for all customs matters should make it feasible to abolish the post of the Commissioner of Customs at Bombay costing Rs. 47,000 annually and also obviate claims which are now being put forward by other Local Governments for work done by their Boards of Revenue or Secretariat.

The so-called Industries Department at present administers Geology, Mines, Salt, the Explosives and Petroleum Acts, Stationery and Printing, Patents and Designs, Factory and Labour legislation, Steam boilers, Stores and other minor matters, and any industries which the Governor General in Council may order it to deal with. As mentioned in paragraph 19, no such order has yet been passed. We consider that the work done by the Industrial Intelligence Section and the Labour Bureau could be discontinued without serious inconvenience. It is represented that a certain amount of labour and other legislation is pending in the immediate future, but this could, in our opinion, be more appropriately arranged for by placing an officer temporarily on special duty than by making permanent additions to the establishment.

We revert later to the future organisation and cost of these departments, but it may be noted that the Commerce Department made a reduction of Rs. 15,000 and the Industries Department of Rs. 25,000 in the original demands for 1922-23 to meet the cut made by the Assembly.

20. *Army Department—*

	Rs.
1913-14, Actual Expenditure	3,84,600
1921-22, Revised Estimate	6,19,900
1922-23, Budget Estimate	7,34,600

The establishment entertained by the Army Department has expanded as shewn in the following comparative figures for administrative and clerical staff.—

	1st April 1914	1st April 1922.
Permanent	64	62
Temporary	10	52
	<hr style="width: 50%; margin: 0 auto;"/> 74	<hr style="width: 50%; margin: 0 auto;"/> 114

We are informed that the present strength of the department is only eight less than it was during the climax of the war. Expansion during the war was no doubt inevitable, but we consider that with a return to normal conditions an early reduction of establishments to pre-war level should be effected. This may not be immediately possible in view of the temporary work which will probably result if our recommendations in respect of Army administration are given effect to, but we recommend that the establishments be thereafter reviewed with the object of very largely reducing the annual cost of the department. The department has already effected economies of Rs. 40,000, but we think that further reductions should be possible, e.g., in the marine, establishment and army list sections, as also in the cost of peons and telegrams, the provision for postage and telegrams being Rs. 50,000, and

that the total budget for 1923-24 should not exceed Rs. 6,50,000, saving Rs. 84,000 including Rs 40,000 already surrendered by the department.

21. *Public Works Department—*

	Rs.
1913-14, Actual Expenditure	3,21,100.
1921-22, Revised Estimate	4,17,100
1922-23, Budget Estimate	4,82,700

Public Works in the Major Provinces is a provincial transferred subject, while irrigation, with which this department also deals, is a provincial reserved subject in regard to which the powers of the Provinces have been largely increased. We do not consider that a separate department of the Government of India is, in the circumstances, required to deal with such questions as concern that Government. We understand that a large amount of the work at present transacted by the department consists of "estate" work in connection with the properties of the Government of India in Delhi and Simla, the allotment of houses, etc., which could more appropriately be dealt with by local administrative officers than by a department of the Secretariat. A branch of the department deals with Posts and Telegraphs administration, which we propose should be placed under the Communications Department.

22. *Proposals for re-allocation of business among Departments—*

For the reasons already given we consider that the present number of departments is excessive and that substantial economies will be secured by a redistribution of work. The Acworth Committee recommended that there should be a Member of Council in charge of Communications whose portfolio should comprise Railways, Ports and Inland Navigation, Road Transport, so far as it is under the control of the Government of India, and Posts and Telegraphs. We are informed that no conclusion has so far been reached on this proposal, which will require some slight modification in detail, as under the Reforms Scheme roads are a provincial reserved subject. Assuming, however, that the principle is adopted and that the Railways and Posts and Telegraphs are put under one Member of Council, we recommend that the remaining

Commerce	existing departments, should be concentrated in two departments. In making this recommendation, we have taken into consideration the transfer of the important
Industries.	
Revenue and Agriculture	
Education and Health	
Public Works.	heads of Customs, Salt, etc., to the control of the Board of Revenue under the Finance Department. If this arrangement is adopted, we suggest that the distribution of subjects among the reconstituted departments should be as follows :—

heads of Customs, Salt, etc., to the control of the Board of Revenue under the Finance Department. If this arrangement is adopted, we suggest that the distribution of subjects among the reconstituted departments should be as follows :—

Commerce Department	Communications Department.	General Department.
Shipping and connected subjects.	Railways	Land Revenue.
Trade and commerce including tariffs and merchandise marks.	Posts and Telegraphs.	Civil Veterinary.
Import and export regulations		Agriculture.
Statistics		Forests
Labour legislation		Central Institutes of Research in the above subjects.
Inter-provincial migration		Botanical Survey.
Factories Act.		Famine.
International labour organisation.		Control of foodstuffs.
Petroleum and Explosives Acts.		Public Works.
		Irrigation.
		External emigration.
		Survey of India.
		Medical Services and Public Health

Commerce Department.	Communications Department	General Department
Patents, designs and copyright Legislation in relation to steam boilers and electricity. Life Assurance. Actuarial work Stores Geology and Minerals Printing and Stationery. Civil Aviation, and possibly, Meteorology Development of industries so far as declared central		Zoology Education. Libraries and Records. Census. Archaeology Museums Local Self-Government Ecclesiastical matters.

23. Railways and Posts and Telegraphs would, under our proposal, form separate departments under one Member of Council. We consider that the detailed examination by the Secretariat of the proposals made by the Director-General of Posts and Telegraphs can be eliminated as at present is the case with the Railways, and that the 'Heads' of the two departments should be empowered to submit direct to the Member of Council matters requiring the orders of the Government of India, and to issue orders on behalf of Government on proper sanction being obtained, the present regulations being amended, as may be necessary for the purpose. In view of the fact that the functions of the Member in charge would be limited to two departments only, he would be able to represent both the departments in the Assembly and thus leave the heads of the departments more freedom for the performance of their legitimate administrative duties which we consider extremely desirable.

24. If our proposals are adopted we consider that it should be possible to limit the cost of each of the two reconstituted departments to not more than Rs. 6 or 6½ lakhs a year. Under this arrangement the total cost of the Secretariat would compare as follows with the provision made in the current year (assuming for the purpose of simplifying calculations that the whole of the lump cut and supplementary grant related to the Secretariat) :—

Existing Departments.	Original Estimates for 1922-23.		Suggested Departments.	Proposed Expenditure in 1923-24.	
	Rs.	Rs.		Rs.	Rs.
Foreign and Political		10,42,900	..	..	8,95,000
Home		6,41,800	..	..	5,45,000
Legislative		8,07,900	..	..	7,00,000
Finance (Ordinary)		6,91,200	..	..	5,90,000
Finance (Military)		6,44,100	..	..	5,75,000
Army		7,84,600	..	..	6,50,000
Education and Health	4,70,700		Commerce		} 13,00,000
Revenue and Agriculture	4,35,800		General		
Commerce	4,89,300	} 24,68,900			
Industries	5,90,400				
Public Works	4,82,700					52,55,000
Total original estimate for 1922-23		70,31,400	Expansion of Board of Revenue and staff		1,00,000
Deduct lump cut made by the Assembly		5,44,000	TOTAL		53,55,000
Add supplementary grant		64,87,400	Proposed saving		14,08,400
		2,78,000			
TOTAL		67,63,400			67,63,400

Even allowing for the proposed expansion of the Board of Revenue there will be, under our proposals, an annual saving of Rs. 14,08,400,

and we believe that, by a redistribution of subjects on the lines, which we have indicated, this can be readily secured.

ATTACHED OFFICES.

	Rs.
1913-14, Actual Expenditure	5,04,000
1921-22, Revised Estimate	10,51,000
1922-23, Bpdget Estimate	11,34,890

25. This expenditure is sub-divided as follows :—

	1913-14.	1921-22.	1922-23.
	Rs	Rs	Rs
Staff Selection Board	<i>Nil</i>	22,000	22,800
Information Bureau	<i>Nil</i>	89,000	1,02,300
Central Intelligence Department	3,67,000	7,55,300	8,08,000
Keeper of the Records	73,800	96,400	1,15,200
Translation Department	8,500	8,000	8,100
Inspector-General, Immigration	54,700	80,300	78,400
TOTAL	5,04,000	10,51,000	11,34,800

26 Staff Selection Board—

	Rs.
1913-14	<i>Nil.</i>
1921-22, Revised Estimate	22,000
1922-23, Budget Estimate	22,800

The gross cost of the Board in the current year is now estimated at Rs. 27,000, and receipts from examination fees at Rs. 16,730. Next year there is unlikely to be any examination, but it is proposed to provide Rs. 9,500 in the budget to meet possible requirements, saving Rs. 13,300. It is probably desirable that there should be an institution of this sort to recruit for the Secretariat, but when the Board again fully functions an endeavour should be made to render it entirely self-supporting.

27. Central Bureau of Information—

	Rs.
1913-14	<i>Nil.</i>
1921-22, Revised Estimate	89,000
1922-23, Budget Estimate	1,02,300

Since the budget was passed, extra allotments aggregating Rs. 78,000 over the budget estimates of 1922-23, have been made. The Bureau has only been sanctioned on a temporary footing and we make no recommendation.

28. Central Intelligence Bureau—

	Rs.
1913-14, Actual Expenditure	3,67,000
1921-22, Revised Estimate	7,55,300
1922-23, Budget Estimate	8,08,000

The cost of the main Bureau in the current year was estimated at Rs. 6,65,000. Reductions of Rs. 1,20,000 have already been given effect to and further savings will be made next year, resulting in a total saving of Rs. 1,58,000. The Finger Print Bureau costing Rs. 84,000 and the Questioned Documents Section costing Rs. 59,000 are, we understand, maintained largely in the interests of the Provinces. We are informed that most of the Local

Governments are not willing to contribute towards the cost of these branches and we think that if arrangements cannot be made to recover the full cost of their services they should be abolished, saving a further Rs 1,43,000, or Rs. 3,01,000 in all.

29. *Keeper of the Records of the Government of India—*

	Rs.
1913-14, Actual Expenditure	73,800
1921-22, Revised Estimate	96,400
1922-23, Budget Estimate	1,15,200

A small reduction has been made in the staff, saving Rs. 2,000; we do not recommend further reductions for the present, as it is proposed to employ the staff for the elimination of useless records, which will have the advantage of setting free valuable accommodation in Calcutta. The intention is to move the remaining records to Delhi when accommodation can be provided there, and a considerable further reduction in expenditure should then be possible. In the meantime steps should be taken to see that the work of elimination is speeded up so that the staff may be reduced and the accommodation freed as soon as possible.

30 *Inspector-General of Irrigation—*

	Rs
1913-14, Actual Expenditure	54,700
1921-22, Revised Estimate	80,300
1922-23, Budget Estimate	78,400

We understand that a saving of Rs. 29,000 has already been effected mainly by the abolition of the appointment of Assistant Inspector-General. We do not think, however, that the continuance of a full-time appointment of Inspector-General is justified now that Irrigation is a provincial subject, over which the Local Governments exercise large powers. It is always open to the Government of India, when they require advice on an important irrigation project, either to place an officer temporarily on special duty or to appoint a committee, obtaining the necessary officers on loan from the Provincial Governments. We recommend, therefore, that the appointment should be abolished, making the total saving Rs. 78,400.

PAYMENTS TO LOCAL GOVERNMENTS FOR COST OF WORK DONE IN THEIR SECRETARIATS.

	Bombay	Madras.
	Rs.	Rs.
1913-14, Actual Expenditure	<i>Nil.</i>	<i>Nil.</i>
1921-22, Revised Estimate	20,000	30,000
1922-23, Budget Estimate	14,000	30,000

31. The payments to the Bombay Government are in respect of passport administration and are more than counterbalanced by receipts.

The Madras payments represent remuneration for duties in respect of central subjects performed by the Madras Secretariat. We understand that some reduction may be effected next year owing to the appointment of a full-time Commissioner of Income Tax. Several claims by Local Governments for substantial sums have been brought to our notice, and if these are pressed, it will be advisable for the Central Government to consider whether more economical arrangements cannot be made for carrying out such duties by some agency of its own.

MINOR ADMINISTRATIONS.

	Rs.
1913-14, Actual Expenditure	9,02,000
1921-22, Revised Estimate	21,13,000
1922-23, Budget Estimate	22,12,000

... this expenditure is subdivided as follows :—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
North-West Frontier Province	5,93,000	17,27,000	17,38,000
Delhi	1,85,000	2,61,000	3,16,000
Coorg	51,000*		
Ajmer-Merwara	70,000	1,17,000	1,49,000
Central India	3,000	8,000	9,000
TOTAL	9,02,000	21,13,000	22,12,000

*Rs. 51,000 shown against Coorg in 1913-14 represents expenditure now classified under another head.

North-West Frontier Province.

	Rs.
1913-14, Actual Expenditure	5,93,000
1921-22, Revised Estimate	17,27,000
1922-23, Budget Estimate	17,38,000

33. There has been a re-classification of expenditure since 1913-14 and the above figures are therefore not strictly comparable. So far as we can ascertain, the approximate expenditure in 1913-14 corresponding to the figures shown for later years was Rs. 10,53,000. The estimate for 1922-23 represents the net amount after deduction of Rs 2 lakhs as a portion of the lump cut made by the Legislative Assembly in the estimates of this Administration. We understand that the local Retrenchment Committee appointed to examine the expenditure of the North-West Frontier Province has recommended a reduction of Rs. 2 lakhs including minor reductions already effected. We recommend that the budget for 1923-24 should not exceed the reduced estimate of the current year, namely, Rs. 17,38,000.

Delhi.

	Rs.
1913-14, Actual Expenditure	1,85,000
1921-22, Revised Estimate	2,61,000
1922-23, Budget Estimate	3,16,000

34. We understand that a reduction of Rs. 2,000 has been effected under travelling allowances and contingencies for the Chief Commissioner's establishment and of Rs 24,000 under district charges. We consider that the municipality should be required to pay entirely for the cost of their own Secretary, saving Rs. 6,000, a total reduction on the 1922-23 estimates of Rs. 32,000. The administration is relatively expensive for so small an area, but the constitutional position appears to require the retention of both the Chief Commissioner and the Deputy Commissioner.

Ajmer-Merwara.

	Rs.
1913-14, Actual Expenditure	70,000
1921-22, Revised Estimate	1,17,000
1922-23, Budget Estimate	1,49,000

35. It is proposed to effect economies of Rs. 8,500. We recommend that the budget for 1923-24 should not exceed Rs. 1,40,000, saving Rs. 9,000.

Central India.

	Rs.
1913-14, Actual Expenditure	3,000
1921-22, Revised Estimate	8,000
1922-23, Budget Estimate	9,000

36. This expenditure is mainly incurred on the administration of the Manpur Pargana; this yields a revenue of Rs. 26,000 and no reduction appears to be feasible.

EXPENDITURE IN ENGLAND.

	£
1913-14, Actual Expenditure	261,800
1921-22, Revised Estimate	459,400
1922-23, Budget Estimate	469,100

37. This expenditure may be sub-divided as follows :—

	1913-14.	1921-22.	1922-23.
	£	£	£
INDIA OFFICE (NET EXPENDITURE) .	193,900	150,900	151,300
HIGH COMMISSIONER (NET EXPENDITURE)	<i>Nil</i>	199,000	169,900
MANAGEMENT OF DEBT	61,100	71,200	109,000
LEAVE ALLOWANCES, ETC. (INCURRED IN RESPECT OF INDIAN ESTABLISHMENT UNDER HEAD GENERAL ADMINISTRATION).	6,800	33,300	38,900
TOTAL	261,800	459,400	469,100

The above figures represent *net* expenditure of the India Office and High Commissioner under "General Administration" only. The following table summarises the *gross* expenditure of the two offices under the various account heads :—

	India Office,	High Commissioner.	Total.
	£	£	£
1913-14, Actual Expenditure	206,836	<i>Nil</i>	206,836
1921-21, Revised Estimate	365,800	279,000	644,800
1922-23, Budget Estimate	236,400	272,900	533,300

It will be seen that the appointment of High Commissioner has very materially increased the cost of the Home Administration. It will be convenient, at this point, to refer briefly to the questions of policy which have given rise to the present division of work and which determine the incidence of cost as between the Indian revenues and the British Exchequer.

38. The appointment of a High Commissioner for India was created in 1920-21 under the provisions of section 29-A of the Government of India Act. The Joint Select Committee in their report on the Government of India Bill, when this was before Parliament, observed that the clause providing for this appointment "carried out the recommendation of Lord Crewe's Committee to appoint a High Commissioner for India to be paid out of Indian revenues, who will perform for India functions of agency, as distinguished from political functions, analogous to those now performed in the offices of the High Commissioners of the Dominions".

On the 1st October 1920 all duties undertaken in the India Office connected with the Store Department and the Indian Students' Department and certain minor matters were transferred to the High Commissioner, and further transfers of work were made on the 1st April 1921 and 1st April 1922.

39. Concurrently with the provision for the appointment of a High Commissioner, the Government of India Act as revised provided that "the salary of the Secretary of State shall be paid out of moneys provided by Parliament, and the salaries of his under-secretaries and any other expenses of his Department may be paid out of the revenues of India, or out of moneys provided by Parliament", and similarly; that the salaries and allowances of the members of the Council of India may be paid from either of these sources. A Committee appointed to consider the allocation of the balance of the expenditure

of the India Office, after transfer of certain of its functions to the High Commissioner, recommended that:—

- (i) the salary of the Parliamentary Under-Secretary of State as well as the salary of the Secretary of State be definitely placed on the British Parliamentary vote ;
- (ii) in the case of the remaining expenditure a distinction be drawn between the charges incidental to the political and administrative duties of the Secretary of State, acting as a Minister, and the agency business still conducted by the India Office on behalf of the Indian authorities ; and
- (iii) that under this arrangement the British Treasury be liable for
 - (a) the salaries and expenses (and ultimately pensions) of all officials and other persons engaged in the political and administrative work of the office as distinct from the agency work, and
 - (b) a proportionate share determined with regard to the distinction laid down in (a) of the cost of maintenance of the India Office—the exact sum payable under (a) and (b) respectively to be determined by agreement between the Secretary of State and the Treasury from time to time.

Detailed calculations to give effect to this settlement were worked out by a departmental committee which recommended that for a period of five years from the 1st of April 1920 the Treasury should make to the India Office an annual lump sum contribution which would remain constant for that period. Details of the recommendations of the Committee are given in Appendix A.

40. In pursuance of these recommendations, the salaries of the Secretary of State and Parliamentary Under-Secretary are now charged on the Parliamentary votes and a grant-in-aid in respect of the India Office is made by the Treasury. The grant-in-aid for 1920-21 was, in the first instance, fixed at £72,000 on the basis of the 1920-21 estimates ; but later in the year, on the basis of a revised estimate submitted by the India Office, it was fixed at £136,000 per annum for the period 1920-21 to 1924-25.

Subsequently, in the course of 1921-22 as a result of a reduction in the rate of 'bonus' due to the fall in the cost of living, the Secretary of State in Council offered to relax the agreement to the extent of conceding to the Imperial revenues a proportionate share of any economy that could be effected in the estimates for 1922-23 as compared with the figures on which the subsidy was based. This resulted in the grant-in-aid being reduced to £113,500, which was distributed among the main account heads as follows:—

	Gross expenditure.	Contribution	Net expenditure.
	£	£	£
General Administration	252,700	101,400	151,300
Audit	13,700	5,800	7,900
Stationery and Printing	14,000	6,300	7,700
TOTAL	280,400	113,500	166,900

This reduction did not take fully into account the re-organisation of the establishments then contemplated in the India Office on the lines laid down for the administrative offices of the British Government. We have ascertained that, if allowance were made for this, the grant-in-aid would be fixed at a sum of £122,000, representing a saving of £8,500 to Indian revenues. The Treasury will no doubt agree to the revision in the same way that they accepted the reduced contribution offered by the India Office as stated above.

41. We recommend in this connection that the question of expediting the transfer to the High Commissioner of the remaining agency subjects still administered by the India Office be considered with a view to effecting such

transfer, if practicable, before the termination of the present settlement with the Treasury:

Under section 19-A of the Government of India Act the Secretary of State in Council has power to regulate and restrict the exercise of the powers of superintendence, direction and control vested in the Secretary of State and the Secretary of State in Council. We recommend that the Secretary of State in Council and the Government of India should examine whether any minor references which have now to be made to the Secretary of State in Council cannot be dispensed with so as to reduce work both in England and in India.

INDIA OFFICE.

	1918-14.	1921-22.	1922-23.
<i>India Office.</i>	£	£	£
General Administration	193,900	331,600	252,700
Audit	7,440	16,400	13,700
Stationery and Printing	5,496	17,800	14,000
TOTAL INDIA OFFICE	206,836	365,800	280,400

42. *General Administration*—

The estimate for 1922-23 includes £197,200 for salaries, from which must be deducted £7,000 on account of staff transferred to the High Commissioner on the 1st April 1922.

The cost of salaries includes £61,600 for bonus based on the cost of living index figure of 100. This figure has since fallen. On the other hand, we are informed by the India Office that the re-organisation of establishments previously mentioned, will, after allowing for a fall in the bonus index to 85 at the time when this estimate was made, involve increased expenditure of £12,500 on the basis of the establishments at present authorised.

43. Exclusive of work transferred to the High Commissioner's Office, there has been an increase under salaries, including bonus, of about £86,000 or 74 per cent. of which £67,000 has occurred in the Correspondence Departments and in the Accountant-General's Department as shown by the figures below:—

	CORRESPONDENCE DEPARTMENTS.		ACCOUNTANT-GENERAL'S DEPARTMENT.	
	Numbers of staff.	Cost.	Numbers of staff.	Cost.
1918-14	71	£ 29,968	62	£ 19,833
1922-23	152	70,526	154	46,024
Increase	81	40,558	92	26,191

It might have been expected that the devolution which has accompanied the Reforms would have been reflected in a substantial reduction of work, but this has apparently been set off by a large amount of initial work attendant on the introduction of the Reforms, and, in the Military and Accountant-General's Departments, by an aftermath of questions arising out of the war, including the re-organisation of the Indian Military Services, changes in regulations (in particular, pay, and pension regulations), demobilisation of surplus

officers, increase in the number of pensions, etc. This work should, however, now tend to decline. The Accountant-General expects during the course of 1923-24 to effect reductions in his staff, saving approximately £6,000. We recommend that this reduction should be expedited and that the saving be given effect to in the 1923-24 budget

We are informed that the Military Department, where the numbers have risen from 17 costing £6,378 in 1913-14 to 67 costing £20,000 in 1922-23, expects to be able to reduce its staff substantially in 1923-24. We recommend that these reductions, saving approximately £7,500, should be similarly expedited. Two pre-war departments, namely, 'Judicial and Public' and 'Revenue and Statistics' with a staff of 17 costing £8,757, have since the war been expanded into three departments with a staff of 41 costing £21,655, namely 'Judicial and Public', 'Industries and Overseas', and 'Commerce and Revenue'. We consider that these departments should again be reduced to two in number and economies of not less than £5,000 effected. Considerable reductions of work are also anticipated in the Financial Department, the number of references received having fallen from 3,229 in 1921 to 2,700 estimated for 1922. The department is making a reduction of one officer and one clerk, but we think that, in view of the falling off in work, a reduction of not less than £2,000 on their present year's estimates should be made.

44. As regards other officers, a saving of about £1,000 will be effected by the substitution of an appointment of Assistant Under-Secretary of State for that of Controller of Finance, and we recommend that the appointment of Information Officer be abolished, saving a further £1,000.

The typing staff of the office has increased since 1913-14 from 18 costing £1,366 for a total clerical staff of 278 (excluding 96 in the Store Depot), to 70 costing £10,281 for a staff of 429 in 1922-23. We are informed that it is proposed to reduce the number to 55 which should effect a saving of approximately £2,200. The number of messengers and labourers has increased from 76 costing £7,962 before the war to 86 costing £16,703 at the present time. We consider that some reduction should be made and a further saving of £1,000 effected.

45. There has been a large increase in expenditure on telegrams, contingencies and miscellaneous items as shown by the following figures:—

	Telegrams to India.	Office contin- gencies.	Postage to India and Miscellane- ous.
	£	£	£
1913-14	3,000	14,800	800
1921-22	17,000	40,900	3,700
1922-23	16,000	35,000	4,500

In the case of telegrams we are informed that a large proportion of the increase is due to post-war unsettlement and may be expected to disappear with the return of more stable conditions. Thus the average of the monthly accounts paid for the first six months of the current year shows a falling off as compared with the corresponding period of the previous year from £1,300 to £900. A further saving of 40 per cent. in cost is anticipated from the introduction now taking place of new codes and ciphers. We recommend therefore that the provision should be reduced by £10,000 and the budget for 1923-24 fixed at £6,000. The increase in office contingencies in the current year is partly due to the inclusion of certain special items, e.g., the repairs of the India Office which had been unduly delayed owing to the war, advertisements for the large issues of India stock which have taken place, and the increased cost of telephones. We recommend that the budget for 1923-24 should be limited to £25,000, saving £10,000.

46. If these recommendations are adopted, the total net reduction under General Administration will be £48,700 arrived at as follows:—

Increase in grant-in-aid	£ 8,500
Transfer of staff to office of High Commissioner	7,000
Accountant-General's Department	6,000
Correspondence Departments	14,500
Other establishments	5,200
Telegrams, contingencies and miscellaneous	20,000
	<hr/>
	61,200
Less cost of re-organisation	12,500
	<hr/>
	48,700

We recommend that the net estimate for General Administration should be reduced from £151,300 to £102,600 for 1923-24.

47. *Audit*—

	Gross Expenditure	Contribution from British Treasury	Net Expenditure
	£	£	£
1913-14	7,440		7,440
1921-22	16,400	10,200	6,200
1922-23	18,700	5,800	7,900

This establishment audits the accounts of the High Commissioner as well as those of the India Office and the increase in establishment from 20 in 1913-14 to 31 at the present time is attributed to increase of work both in volume and complexity. While we do not recommend any immediate reduction, the falling off of work in other sections of the office should enable a reduction to be made in the cost of this department, and we recommend that the establishment be further reviewed a year hence.

48. *Stationery and Printing*—

	Gross Expenditure	Contribution from British Treasury	Net Expenditure
	£	£	£
1913-14	5,496		5,496
1921-22	17,800	9,100	8,700
1922-23	14,000	6,300	7,700

There has recently been a considerable fall in prices and steps have been taken to economise both in printing and stationery. We recommend that the net budget for 1923-24 should be fixed at £5,000. This saving will accrue in the "Stationery and Printing" estimates.

HIGH COMMISSIONER.

	1913-14.	1921-22.	1922-23.
	£	£	£
General Administration	<i>Nil</i>	274,000	264,900
Stationery and Printing	<i>Nil</i>	5,000	8,000
TOTAL HIGH COMMISSIONER		279,000	272,900

49. *General Administration—*

The above figures are gross figures. The net estimates for General Administration are arrived at as follows :—

	1921-22.	1922-23.
	£	£
Gross Expenditure	274,000	264,900
<i>Deduct</i> surcharge for departmental expenses on—		
(a) Stores for Posts and Telegraphs and State Railways	65,000	70,000
(b) Stores for Provincial Governments	10,000	25,000
Net Expenditure	199,000	169,900

The High Commissioner has informed us that in his revised estimates for the current year it will be necessary to make an additional provision of £5,300 on account of transferred staff, etc. This will be more than set off by savings of £1,500 in respect of bonus, £500 for supervision of stamps, and £9,500 in the wages of labourers and other Store Department charges, the net saving thus being £6,200. In addition to this, a further reduction of £3,000 is anticipated for 1923-24. We think, however, that some further economies might be effected. In our opinion the Mechanical Transport Department costing £1,788 should be dispensed with. The total charges under supervision of stamps after the reduction of £500 mentioned, are £10,800, which, compared with the total estimated expenditure on stamps of £281,600, is high. Arrangements have now been made for the transfer to the General Post Office of the staff employed in the supervision of manufacture of stamps, and we consider that endeavour should be made under the revised arrangements to secure a further reduction.

The work of the Indian Students' Department, costing £4,400 in salaries and £4,500 for other items apart from overhead charges, is carried out entirely for Local Governments and we consider that if this work is to continue in any form, recoveries of the full amount should be made, saving £8,900.

The cost of the collection of income-tax for the Home Government is estimated at £1,000. We do not consider that this is a proper charge against the Indian Government, and we understand that negotiations are in progress with a view to effecting a recovery from the Home Government.

The expenditure on contingencies and postage and telegrams to India should be curtailed and reductions of at least £1,500 and £500 respectively effected under these heads.

The amounts of £2,000 and £16,000 in respect of the additions to the Indian Store Depot and the equipment and decoration of 46, Grosvenor Gardens, are non-recurring charges and will not appear in the next year's budget.

We understand that a proposal is at present under consideration for charging Local Governments for the work done for them in issuing leave, pay and pensions. The proposed charge of one per cent. on the amounts disbursed appears *prima facie* to be reasonable and would yield about £10,800 per annum.

With these modifications, there would be a reduction of about £52,000 in the estimates for General Administration, and we consider that the net budget for 1923-24 should be limited to £118,000.

50. *Stationery and Printing—*

A saving of £2,000 in the budget estimate of £8,000 is expected in the current year, and a similar saving should be taken under the Stationery and Printing head in 1923-24.

51. *Purchase of Stores—*

Complaints have been made to us by nearly all Departments in India of the delay entailed in complying with their indents for stores obtained from England, and examples have been given to us of the inordinate time taken to place orders after receipt of indents. These delays make it necessary for Departments to hold large stocks in excess of their immediate requirements—in many cases 1½ years' stock—and cause a great loss to Government by deterioration, cost of storage and lock-up of capital. We recommend therefore that the whole position be thoroughly reviewed by the High Commissioner in order to expedite compliance with indents.

52. On the other hand, the High Commissioner has drawn our attention to the fact that indentors frequently tie his hands by restricting him, in spite

of his protests, to a particular manufacturer or source of supply. This inevitably connotes the payment of higher prices than would otherwise be necessary, and the High Commissioner has furnished us with several instances where large sums of money have been lost both to the Central and Provincial Governments as the result of such restrictions and also by indentors conducting initial negotiations with the representatives of particular firms. These practices are greatly to be deprecated and we recommend that orders be passed strictly prohibiting them. Private communications between indentors and suppliers should also not be permitted.

53. At the request of our colleague, Mr. Dalal, we note that he took no part in our discussions regarding the India Office and the High Commissioner for India.

MANAGEMENT OF DEBT.

	£
1913-14, Actual Expenditure	61,100
1921-22, Revised Estimate	71,200
1922-23, Budget Estimate	109,000

54. This expenditure includes, apart from the normal charges for the management of debt, certain charges for the issue of new sterling loans and also an additional charge for the recent introduction of the transfer of India stock by deed. We are informed that it is proposed to transfer expenditure on "management of debt" to the 'interest' head where it will be more appropriately shown; there will, therefore, be a reduction of £109,000 under the General Administration head and a corresponding increase in the estimates for 'Interest.'

LEAVE ALLOWANCES, ETC.

	£
1913-14, Actual Expenditure	6,800
1921-22, Revised Estimate	33,300
1922-23, Budget Estimate	38,000

55. This expenditure is dependent on the number of officers on leave and is not therefore susceptible of reduction. The increase shown under this head is partly due to a re-arrangement of the accounts.

CONCLUSIONS.

Having reviewed the expenditure under the head of General Administration we recommend that—

- (1) the Railway Department and the Posts and Telegraphs Department be grouped in a single portfolio, that the activities of certain departments be curtailed, and the remaining subjects dealt with by them be concentrated in two departments, namely the Commerce Department and the General Department, on the lines set out in the table in paragraph 22, the total cost of the Secretariat being restricted to Rs. 53,55,000, a saving of Rs. 14,08,000;
- (2) the appointment of Inspector-General of Irrigation be abolished, and the functions of the Central Intelligence Bureau curtailed, and a saving of Rs. 3,95,000 effected in the cost of the "Attached Offices";
- (3) a reduction of Rs. 40,500 be made in expenditure in the Minor Administrations;
- (4) the grant-in-aid from the Treasury to the cost of the India Office be reviewed, and the net cost of that office be reduced by £18,700 under the head General Administration and by £2,700 under Stationery and Printing;
- (5) the arrangements for the purchase of stores by the High Commissioner be reviewed as indicated in paragraphs 51 and 52;
- (6) the net cost of the High Commissioner's Office be reduced by £52,000 under General Administration and by £2,000 under Stationery and Printing; and
- (7) the Budget Estimate for 1923-24 for General Administration be limited to Rs. 1,48,68,000, a reduction of Rs. 49,89,000 including £109,000 or Rs. 16,35,000 transferred to the head Interest. This will give a net saving to the country of Rs. 33,54,000.

APPENDIX A.

Recommendations of the Departmental Committee referred to in paragraph 39 regarding the basis of the Treasury grant-in-aid of the salaries and expenses of the India Office.

For a period of five years from 1st April 1920, the Treasury should make to the India Office an annual lump sum contribution, which would remain constant for that period and the amount of which would be equivalent to that part of the total estimated cost of the India Office for 1920-21 (less the salaries of the Secretary of State and the Parliamentary Under Secretary of State) which is attributable to the administrative work of the Office calculated as follows :--

No	Department	Percentage of cost to be borne by Imperial Revenues	Percentage of cost to be borne by India Office	REMARKS.
(i)	Secretary of State and Parliamentary Under Secretary	100	—	To appear directly on the vote submitted to Parliament
(ii)	Permanent Under Secretary, Assistant Under Secretaries.	100	—	
(iii)	Members of Council	100	—	See para 32 of Crews Committee Report.
(iv)	Private Secretaries	100	—	
(v)	Resident Clerks	100	—	
(vi)	Finance Department	61 7	38 3	Includes Inspector of Equipment.
(vii)	Military Department	57 1	42 9	
(viii)	Judicial and Public Department	83 8 (4-7ths)	16 7 (3-7ths)	
(ix)	Political Department	100	—	
(x)	Public Works Department	95	5	
(xi)	Revenue Department	75	25	
(xii)	Indo-European Telegraph Department	—	100	
(xiii)	Government Director of Indian Railway Companies and his staff	100	—	
(xiv)	Students' Department	—	—	Borne out of funds in the hands of the High Commissioner for India.
(xv)	Accounts Department	8 3 (1-12th)	91 7 (11-12ths)	
(xvi)	Stores Department (excluding Depot)	—	—	Borne out of funds in the hands of the High Commissioner for India.
(xvii)	Records Department	60	40	
(xviii)	Library	—	100	
(xix)	Legal Adviser's Department	25	75	
(xx)	Medical Adviser	100	—	
(xxi)	Members of Medical Board and Clerk	—	100	
(xxii)	Surveyor's Department	—	100	
(xxiii)	Auditor's Department	50	50	
(xxiv)	Store Depot	—	—	Borne out of funds in the hands of the High Commissioner for India.
(xxv)	India Office office keepers, messengers, charwomen, etc	To be divided in proportion "A" defined in the margin		The proportion "A" is that of the total cost of items (i) to (xxiii) inclusive falling on the Treasury to the total cost of those items falling on the India Office
(xxvi)	Indian Students' miscellaneous payments	—	—	Borne out of funds in the hands of the High Commissioner for India.
(xxvii)	Law charges	—	100	
(xxviii)	Postage and telegrams to India and stationery	—	Proportion "A"	
(xxix)	India Office rates	—	Proportion "A"	
(xxx)	Depot rates	—	—	Borne out of funds in the hands of the High Commissioner for India.
(xxxi)	Miscellaneous charges (India Office)	—	Proportion "A"	
(xxxii)	Miscellaneous charges (Depot)	—	—	Borne out of funds in the hands of the High Commissioner for India.
(xxxiii)	Building repairs, etc. . . .	—	100	

SUPPLEMENTARY NOTE BY THE HON'BLE MR. PURSHOTAMDAS
THAKURDAS ON INDIA OFFICE EXPENDITURE.

1. The Welby Commission reporting in 1900 recommended a contribution

The constitutional position of the India Office of £50,000 a year by the British Treasury expenditure since the Reforms towards the cost of the India Office, when the total cost of the India Office (including all agency charges) amounted in the year 1897-98 to £240,000. The change in the status of India as brought about by the Government of India Act of 1919 necessitated a direct contribution by the British Treasury to the cost of the India Office, and a vote for same by Parliament. The Committee appointed to consider the Home Administration of Indian affairs in relation to the Indian Constitutional Reforms Scheme (1919) said —

“ Our main principles have already led us to distinguish the political and administrative duties of the Secretary of State, acting as a Minister, from the Agency business conducted by the India Office on behalf of the Indian authorities. It appears to follow as a general conclusion that the charges incidental to the former should be met from British revenues. They form a normal part of the cost of Imperial administration, and should in equity be treated similarly to other charges of the same nature. We include under this head the charges on account of the Advisory Committee which is constituted to assist the Secretary of State in the performance of his Ministerial responsibilities. Charges on account of agency work would naturally continue to be borne by India, in whose interests they are incurred.”

2. After the acceptance of the above main principle a Committee on

Appointment of the India Office charges which the Treasury was represented went into the details of the apportionment of the India Office charges. They recommended that, for a period of five years from 1st April 1920, the Treasury should make to the India Office an annual lump sum contribution, which would remain constant for that period and the amount of which would be equivalent to that part of the total estimated cost of the India Office for 1920-21 (less the salaries of the Secretary of State and the Parliamentary Under-Secretary of State) which is attributable to the administrative and political work of the India Office. The percentage of the cost of each Department to be borne by Imperial Revenues and by the India Office was determined for the purpose of arriving at the amount of this contribution. At the end of five years the question was to be reconsidered on the lines of this settlement.

This recommendation was accepted by the Treasury and provision for 1920-21 was made for a grant-in-aid of £72,000, the latter figure being the agreed proportion of the actual expenditure shown in the Home Accounts of the Government of India (1919-20).

In December 1920 a revised estimate was submitted by the India Office and the grant-in-aid based on that estimate was fixed at £136,000 per annum for the period 1920-21 to 1924-25.

After this for 1922-23 and the following two years the Secretary of State for India in Council agreed to a reduced grant of £113,500 for the purpose of conceding to the Treasury a proportionate share of certain economies that he anticipated in the 1922-23 and subsequent estimates.

The Committee have been informed that the actual charges payable by the Treasury on the basis of the percentages agreed upon amount to £122,000 (for 1922-23) thus entailing an excess debit of £8,500 to the Government of India for that year. My colleagues have expressed a hope that the British Treasury may see their way not to take advantage of this excessive concession, which may be said to be the result of a mis-calculation by the India Office authorities. They correctly point out that the Treasury should not object to revise the agreement of December 1920 now, in the light of the actual figures,

since they readily revised the previous agreement for £136,000 for a share in the benefits of anticipated economies in the India Office estimates for 1922-23 and the next two years to the British Exchequer.

3. I wish to mention one serious financial necessity, from the financial point of view, of the India Office avoiding any such lump sum settlements without previous reference to the Indian Legislature.

Lump sum settlements with the British Treasury undesirable on financial grounds

The expenditure of the India Office not debitabie to the British Treasury is a charge on the Government of India. Being still subject to the superintendence, direction and control of the Secretary of State for India, the Government of India can hardly be expected to have any effective control in the expenditure of the India Office, although such expenditure may be for work of an agency nature. If the British Treasury have to bear every year a definite proportion of the actual expenditure of the India Office they would—and indeed they could—control the expenditure of the India Office; and the Government of India would share the benefit of such control. As long as any agency work is left with the India Office the division of the expenses of various departments between the Indian Exchequer and the British Treasury would necessarily entail the effective voice of the British Treasury in the expenditure of each such department. But the interest of the British Treasury in the economical working of the India Office practically ceases with the fixing of a grant-in-aid payable by them for a number of years. Thus the India Office are left without any controlling authority at all. Government departments all over the world show tendencies to expand rapidly and to contract much too reluctantly; and the Secretary of State for India can hardly be expected to personally look into such details with any minuteness or thoroughness.

4. The main principle accepted by the British Treasury and Parliament

Delay in the transfer of agency work of all kinds to the High Commissioner—unnecessary and uneconomical.

would warrant no charge for the India (Secretary of State for India's) Office in London being debited to the Government of India as soon as all agency work performed by the India Office before 1919 is transferred to the High Commissioner for India in London. Not only has all work of an agency nature not still been transferred by the India Office to the High Commissioner, but the information submitted to the Committee compels me to conclude that the India Office is not likely to complete the transfer of such work for a considerable time to come. I propose to mention a few of the reasons given by the India Office for the delay that has occurred till now and is likely to continue for a long time hereafter, and to offer my observations on these reasons, and to consider how far the delay in the transfer of Agency work is avoidable. I am convinced that the distribution of work of essentially a similar nature between two offices under two distinct heads is against the best interests of the Indian Treasury.

I should here make it clear that, as the Committee had no opportunity of personally interviewing any representatives of the India Office, my remarks are based on such written material as was available—particularly on the reply of the India Office to the questionnaire submitted by the Chairman to them on behalf of the Retrenchment Committee.

5. The Committee have been informed that till November 1922 the India Office transferred functions and staff to the High Commissioner for some of the Agency work done by them till then, but that recruitment for 29 subjects is still with the India Office. Further the India Office say that—

“The establishment of the High Commissioner and the division of certain Departments entailed thereby rendered necessary a certain amount of duplication in the higher posts and that therefore it has not been and could not be expected to have been possible to reduce the staff of the India Office by an amount of staff equal to that transferred to the High Commissioner.”

The India Office have not given to the Committee any of the reasons that necessitated the delay in transferring the work of recruitment of these 29 subjects to the High Commissioner till now. They, however, propose to

Duplication of posts, due to incomplete transfer of work, should cease.

transfer this work shortly and I think they should easily be able to complete this by the 1st May next at the latest. When all agency work is transferred, the division of work referred to above would substantially cease and with it the duplication of posts should end.

6. The aftermath of the war and certain questions under discussion in connection with the war accounts between the India Office and the War Office, when settled, are expected to result in the reduction of staff paid for by India to a certain extent. But the India Office say that some of the increased charges since 1914 threaten to be permanent on India as a result of "fresh work and fresh problems connected with the establishment of a new normality in the financial, economic and administrative world". The India Office have not specified definitely the fresh work and fresh problems connected with the establishment of "a new normality since the war." If the fresh work entailed is of the nature of agency work it would be looked after by the High Commissioner under the instructions of the Government of India. If, as is more likely, the fresh work is of a political nature, it would form a normal part of the work of Imperial administration, and, as such it should be a charge on the British Exchequer, as correctly contemplated by the Parliamentary Committee quoted in paragraph 1. In either case it is difficult to see how the cost of the India Office to India should increase for such work.

7. The Finance Department of the India Office was split up into two Branches since 1914. The necessity for this increased expenditure is said to have been perceived before 1914. The continuation of the two branches is said to be necessary in spite of the devolution of greater powers of sanctioning expenditure to the Government of India and local Governments, and it is contended that no reduction can be made in the expansion of this Department. Perhaps the devolution of financial powers sanctioned by the Government of India Act, 1919, is not likely to materialise so long as the necessary staff is available in the India Office to enforce the same detailed and meticulous control as existed before the Reforms.

8. The supply of currency notes to India used to be a part of the work of the Financial Department at the India Office. The work of receiving and shipping currency notes to India has now been transferred to the High Commissioner, but the questions of alteration of material and pattern of notes are regarded as questions of principle too important to be entrusted to the High Commissioner. The further question of the possibility of manufacture of currency notes in India is suggested by the India Office as again being too important to make it advisable to transfer this work to the High Commissioner's staff; and this agency work is proposed to be continued for retention by the India Office.

With an experienced and capable financial authority of the high standing of the late Sir William Meyer as High Commissioner till October 1922 it is difficult to share the opinion of the India Office that questions of alteration of material and pattern of notes were such important questions of principle as could not be safely transferred to the High Commissioner between 1920 and 1922. I recommend that the whole question of the printing of currency notes whether in England or in India be forthwith examined by the Finance Department of the Government of India who would naturally utilise the services of the High Commissioner for such work as would have to be done on their behalf outside India. Until a decision is arrived at to print currency notes in India, the Finance Department of the Government of India might usefully examine not only the charges paid for printing currency notes, to the Bank of England, but also the freight charges on the same from London to India. The Committee was not able to get details of these freight charges, but I believe useful savings are possible in this direction.

9. It would seem that a very large part of the work of the India Office is connected with the pay, pensions, allowances, etc., of the members of the various Military and Imperial Services of the Government of India. The retention of a greatly increased staff is considered necessary by the India Office authorities on the ground that rules and regulations relating to Military pay, leave pay, and pension scales which have been modified during the war, or as a result of war experience are much more complicated and are certain to give rise to very numerous difficult questions. It is also asserted that the amount of work that has been necessitated by the revision of salaries and conditions of employment in the various Imperial Services is capable of realization only by those in daily touch with such work.

In the Military Department the number of staff has increased from 17 in 1913 to 67 in 1922. It is said to be very doubtful whether a reduction of more than 20 is probable before March 1924 and more than 40 ultimately. The strongest reason for the retention of the extra staff from 1913 is said to be the reorganization of the Indian Military services, in special connection with pay and pension regulations after the war.

Regarding the Accountant General's Branch of the India Office the staff has gone up from 62 in 1913-14 to 154 at the India Office and 69 with the High Commissioner in 1922-23. The India Office consider it impossible to reduce the staff below 127 in the near future. Although a greater desire on the part of India for detailed information since the Reforms Scheme was introduced is said to be one of the reasons, the main reason is said to be the effects of war. One of these effects, the increase in the number of pensioners, is said to endure for a generation. But no time is considered by the India Office safe to be assigned to the indirect effects of the war, such as the general disturbance of currency and exchange conditions, services reorganization and the increased complexity of pay and pensions. It is said that there will be no return to the settled routine of 1913-14 for years to come.

In 1913-14 the furlough pay of Indian Army Officers was issued only at sterling rates, pay due at rupee rates being advanced in India, and questions as to rates of exchange did not arise. Furlough pay has now to be issued at rupee rates as well as sterling rates. In certain circumstances the rupee rates change within the period of an officer's leave, and the sterling rates are said to be less simple than in 1913-14.

The British War Office have arrangements with reputable Bankers for payment of Military pay, etc. I would recommend that all work regarding payment of salaries, allowances, pensions, etc., for the Government of India in London should be offered to the Imperial Bank of India's Branch in London. There is no justification for the Secretary of State being burdened with this more or less routine clerical work. The complications in rules and regulations referred to so often by the India Office should not be beyond the grasp of a staff under the Imperial Bank, and, in all probability, transference of the work would take the necessary staff with it to the Imperial Bank from the India Office and might even lead to ultimate simplification of the rules.

10. The India Office seek to justify the splitting up of the work of the 'Judicial and Public' Department and the 'Revenue and Statistics' Department into three Departments, viz., 'Judicial and Public,' 'Industries and Overseas,' and 'Commerce and Revenue' Departments. One should have thought that the extra Departments would have ceased as soon as special circumstances arising after the war or the initial work of the Reforms Scheme was finished. But the India Office say that "in fact it (the creation of the three Departments) took place two years after the war was over and when most of the initial work of the Reforms Scheme had been done". They justify the retention of the three Departments owing to the changed conditions following the conclusion of the war and to new subjects which have risen within the sphere of the old Departments. These subjects are said to be associated with India's membership of

Increased cost to India due to the expansion of the "Judicial and Public" and "Revenue and Statistics" Departments into three Departments not justified

the League of Nations and the International Labour Organization, with her enhanced status in the British Empire (marked by her representation in the Imperial Cabinet and other meetings) and the increased interest consequently taken in the position of Indians overseas. The effect of the Reforms on the work of these Departments is also said to be very marked.

If the two Departments, 'Judicial and Public' and 'Revenue and Statistics,' suggested for retention by my colleagues are necessary for the political and administrative duties of the Secretary of State, they are a charge on the British vote. I fail to see how these Departments are necessary for the Agency work of the Government of India, for which work alone the revenues of India are liable.

11. The management of Debt in London is another item that engages

The management of Debt is Agency work which should be transferred to the High Commissioner.

the attention of the India Office. The details of the charges in the three years are as follows:--

	1913-14, Actuals	1921-22, Revised Estimate.	1922-23, Budget.
	£	£	£
Management of sterling debt	52,848	52,550	58,900
Additional charges for stock transferable by Deed, with arrears from 1920			22,200
Charges for issue of sterling debt		10,550	19,750
Management of Rupee Debt	8,000	8,000	8,000
Miscellaneous	243	100	150
TOTAL	61,091	71,200	109,000

The charge of the Bank of England for management of sterling Debt still stands at the figure of £300 per million fixed before the war, this charge being the same as for management of the British Debt. The Committee understand that negotiations for the revision of this figure will shortly be opened between the Bank of England and the India Office since the Bank now want to charge more for Indian Debt than for British Debt, which is now much bigger than pre-war. Since the management charges were fixed, a procedure has been introduced for the transfer of India stock by deed, and an additional charge is said to be due to be accepted in view of the extra cost entailed by the opening of new ledgers and the undertaking of extra work by the Bank. The charge for transfer by deed registers will be settled at the same time as the general question of management charges.

This is agency work pure and simple and should have been transferred to the High Commissioner's Office as soon as it was established. There is no reason to delay the transfer now. Should the Bank of England demand increased management charges I would recommend the Imperial Bank of India in London being asked to take up this work. The Committee were not able to ascertain the terms the Imperial Bank may want for this. But the Standing Finance Committee of the Legislature would be able to examine these details and decide upon the most economical course for India.

12. The different functions of Agency work referred to above should all, in

Transfer of all Agency work to the High Commissioner necessary in the interests of the economy. When this is accomplished the India Office charges would be entirely payable out of British Revenue.

my opinion, be transferred to the High Commissioner within the next twelve months at the most. I see no reason why pay and pensions due by the Government of India should not be paid by the Imperial Bank of India, or failing it, the High Commissioner on behalf of the Government of India. A single control of agency work by servants of the Government of India, acting under the Government of India's orders, and responsible to them, can alone conduce to the maximum economy, and not a duplication of work in London as happens to go on at present. These changes should be brought about forthwith and then the India

Office should cost nothing to the Indian Exchequer, on the principle laid down by the Committee quoted in paragraph 1, since the India Office would then be left with only political work, which has been approved as a fair charge on the British Revenues.

13. The Committee quoted in paragraph 1 said "The India Office building and site and other similar property paid for in the past by Indian revenues would continue to be Indian property". In the calculation of the basis for the grant to be paid by the British Treasury towards the India Office expenses, the Government of India was debited with 100 per cent. of the cost of repairs, etc., and a fixed proportion* of the India Office rates. On the one hand the Government of India have to pay the rent, rates, etc., of a building, which they have had to lease specially for the High Commissioner who sits in London on their behalf. On the other, the India Office building which has been built and maintained out of the revenues of India is occupied by the Secretary of State who does not pay any rent for it, although the Government of India have to pay for its repairs, etc. Thus the Budget Estimate of the India Office chargeable to Indian Revenues for 1922-23 under "repairs, furniture, etc." was £3,400 as compared with an expenditure of £1,665 in 1913-14, a part of the increased cost of repairs being attributed to the expenses of redecoration, which had been unduly delayed owing to the war. The revenues of India have also been debited with £16,000 for purchase on lease of "46, Grosvenor Gardens" and cost of alteration and office furniture for the High Commissioner, who could not be accommodated in the India Office building. On the broad principle accepted by the Committee of 1919 the British Exchequer should pay rent for the India Office building. The rent of a substantial and commodious building like the India Office situated in Whitehall may be a very high figure; the least that the British Treasury could do would be to pay the rent for the premises occupied by the High Commissioner as a compensation for the proportion of space occupied in the Whitehall building by the Secretary of State for India and his establishment, for his political and administrative duties. When all agency work is transferred to the High Commissioner the India Office building would, if it were still occupied by the Secretary of State, be utilised for his Parliamentary responsibilities, and so the whole charge of the building,—*viz.*, maintenance, repairs, rates, etc., with a reasonable interest on the capital value of same—should be borne by the British Exchequer.

PURSHOTAMDAS THAKURDAS.

DELHI;

The 1st February 1923.

*NOTE.—India Office rates are divided in proportion "A" between the British Treasury and the Government of India, the proportion "A" being that of the total cost of 23 items falling on the Treasury, to the total cost of those items falling on the India Office.

†NOTE.—Between 1861 and 1870 £588,000 were spent from the Indian Revenues on the construction of the present India Office building.

PART V

POLITICAL EXPENDITURE.

The estimate for 1922-23 compares with the revised estimate for 1921-22 and the actual expenditure for 1913-14 as follows:—

	Rs.
1913-14, Actual Expenditure	1,72,80,000
1921-22, Revised Estimate	2,14,95,000
1922-23, Budget Estimate	2,93,14,000

2. The expenditure classified as Political is of a heterogeneous character, including diplomatic and consular charges in Persia, at Kabul and elsewhere, expenditure on the upkeep of Residencies and Political Agencies in Indian States, the cost of forces of a *quasi*-military or police character engaged on watch and ward on the frontiers, and, in some of the frontier areas, expenditure which in Indian Provinces would be classified under General Administration; also charges in respect of subsidies, trade agencies, refugees and State prisoners, and on the lighting and buoying of the Persian Gulf. For present purposes the expenditure under the main heads can most conveniently be classified as follows:—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
NORTH-WEST FRONTIER PROVINCE	31,60,000	49,08,000	1,18,51,000
BALUCHISTAN	24,15,000	36,55,000	42,25,000
KABUL	49,000		5,26,000
ADEN AND ARABIA	3,73,000	3,52,000	4,42,000
PERSIA AND PERSIAN GULF	16,96,000	18,01,000	22,40,140
NEPAL	76,000	11,01,000	11,07,790
TIBET FRONTIER	3,47,000	4,84,520	4,21,300
RESIDENCIES AND AGENCIES DIRECTLY UNDER THE CENTRAL GOVERNMENT AGENCIES AND OTHER POLITICAL CHARGES IN MAJOR LOCAL ADMINISTRATIONS	22,16,000	25,23,480	26,15,070
MISCELLANEOUS	39,36,000	36,22,000	36,30,000
	27,86,000	14,40,000	10,10,700
	1,70,54,000	1,98,87,000	2,80,69,000
EXPENDITURE IN ENGLAND (Rs. 15=£1)	2,26,000	16,08,000	12,45,000
TOTAL	1,72,80,000	2,14,95,000	2,93,14,000

NORTH-WEST FRONTIER PROVINCE.

	Rs.
1913-14, Actual Expenditure	31,60,000
1921-22, Revised Estimate	49,08,000
1922-23, Budget Estimate	1,18,51,000

3. The bulk of the expenditure is incurred in respect of the trans-border area and may be sub-divided as follows:—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
Political Agents	5,10,000	6,74,000	7,91,000
Militias and Scouts	17,18,000	18,93,000	21,35,000
Tribal and district levies	1,58,000	6,72,000	5,95,000
Khassadars . . . . .	...	3,30,000	8,67,000
Allowances to Frontier tribes	3,50,000	6,85,000	7,17,000
Political subsidies	12,000	12,000	12,000
Entertainment of Envoys and Chiefs	2,23,000	3,95,000	3,96,000
Refugees and State prisoners	10,000	12,000	9,000
Special political expenditure in Waziristan . . . . .	...	...	60,40,000
Miscellaneous	1,17,000	2,35,000	2,89,000
TOTAL	31,60,000	49,08,000	1,18,51,000

The Chief Commissioner is already effecting economies of Rs. 5,37,000 under the various heads including "miscellaneous." These economies give effect to most of the reductions recommended by the local Retrenchment Committee. We deal below with further possible economies.

4. *Political Agents*.—These officers are concerned with the administration and control of the tribal areas outside the administered districts of British India. They include a Resident for Waziristan, and Political Agents at Wano and in the Tochi, Dir-Swat-Chitral, Kurram and Khyber areas. Some reduction in establishments is included in the economies which are already being effected, but we do not consider that, when conditions in Waziristan have settled down, it should be necessary to maintain a Resident in Waziristan as well as a separate Political Agent for Wano, and we recommend that the question of the abolition of one of these appointments should then be taken up and a reduction of at least Rs. 50,000 effected.

5. *Irregular Forces*.—These forces, which include militia or scout formations, tribal and district levies and khassadars, have increased greatly, both in number and cost, since 1913-14, mainly owing to the policy adopted in Waziristan. We append a statement to show the comparative strength and cost of these forces in the years selected and also of the various classes of police employed in the province (Appendix A). The functions of the forces mentioned above, which, with the exception of the district levies are employed in the tribal areas, are briefly as follows:—

Scouts.—These formations which are officered by British officers deputed from the Indian Army are synonymous with militia; they are recruited in a proportion of one-third tribesmen to two-thirds cis-frontier men, whereas the pre-war militia consisted almost entirely of tribesmen. Their special duties are the policing of the tribal areas in which they are located, including the holding open of the more important roads which traverse them and the breaking up and intercepting of gangs of raiders and marauders *en route* to and from British territory.

Tribal Levies.—These have been in existence for many years in the Malakand Agency, where the Dir, Swat and Chitral levies carry out duties somewhat similar to militia and scouts, though without British officers.

District Levies.—These are a new experiment which is said to be turning out well. The levies are formed by arming a certain number of villagers who are paid Rs. 12 per mensem, without pension, a man of the type of retired Jemadar being placed in charge. They are under the control of the Deputy Commissioner, but are linked up with the frontier constabulary by whose officers they are inspected from time to time.

Khassadars.—These are essentially a tribal force first introduced after the Afghan War of 1919, and are used within their tribal limits for the policing of tribal country and the ultimate protection of the British districts. They furnish their own rifles and ammunition and build their own block houses.

6. The figures set out in the statement in paragraph 3 do not represent the full sanctioned cost of the irregular forces since, as indicated in Appendix A, further increases in the Tochi and South Waziristan scouts have been sanctioned, estimated to cost Rs. 15 lakhs in 1922-23, and we are informed that it is proposed ultimately to raise the number of additional scouts to 5,000, the total cost of this measure being Rs. 23 lakhs per annum. Large increases are also being effected in the khassadars involving additional annual expenditure of Rs. 14 lakhs. In arriving at the total cost of the defence of the frontier borne on the civil estimates, it is further necessary to take into account the considerable force of special police, also described as frontier constabulary, which is maintained at an estimated annual cost of about Rs. 24 lakhs. We deal with this force in our report on Police expenditure.

7. Though these forces are of a semi-military character, we understand that the large increases already effected and proposed will not make it possible to effect any immediate reduction in the number of fighting units of the Army. It has been represented to us, however, that the employment of these forces obviates additional military expenditure that would otherwise be required, and that it may in future enable further economies to be effected in the military estimates. In view of all the circumstances we recommend that no further

increases beyond those specified above be made in the strength of these irregular formations and that the whole question be reviewed as soon as the position on the frontier is stabilised with a view to effecting substantial progressive reductions in the cost of frontier defence. Meanwhile we consider that, in view of the fall in prices, savings to the extent of at least Rs. 1 lakh should be effected in the cost of clothing, ration allowances, etc.

8. *Allowances to Frontier tribes.*—We are informed that these allowances in some cases merely represent small payments in the way of travelling, allowances for tribesmen called for discussion, and in others are on a more or less contractual footing, for example the Afridis are paid Rs. 2½ lakhs in return for the Khyber tolls which they used to collect, whereas the Government now take the tolls amounting to about Rs. 1½ lakhs. In the circumstances we make no recommendation.

9. *Entertainment of Envoys and Chiefs.*—The increase from Rs. 2,23,000 in 1913-14 to Rs. 3,96,000 estimated for 1922-23 is said to be due to the enhanced cost of entertainment. The reductions effected by the Chief Commissioner include a saving of Rs. 8,000; prices are, however, now falling and we recommend that expenditure under this head be limited to 50 per cent. over the pre-war figure, saving a further Rs. 40,000.

10. *Special political expenditure in Waziristan.*—Of the budget grant of Rs. 60,40,000 under this head Rs. 15,00,000 was for additional scouts, Rs. 14,00,000 for additional khassadars and the balance for construction of roads, cost of housing and transport for scouts, etc. We understand that the provision proposed under this head in 1923-24 will be limited to Rs. 40,87,000, involving a reduction of Rs. 19½ lakhs in the political estimates.

11. *Summary.*—We recommend that the provision for political expenditure in the North-West Frontier Province in 1923-24 be limited to Rs. 92,24,000, a reduction of Rs. 26,27,000.

BALUCHISTAN.

12. The estimate for 1922-23 compares with the revised estimate for 1921-22 and the actual expenditure for 1913-14 as follows.—

	Rs.
1913-14, Actual Expenditure	24,15,000
1921-22, Revised Estimate	36,55,000
1922-23, Budget Estimate	42,25,000

13. This expenditure is subdivided under the main heads shown below :—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
Political Agents	8,59,000	13,82,000	15,37,000
Levy Corps	6,85,000	9,63,000	12,07,000
Levies and other irregular formations.	6,98,000	11,56,000	13,03,000
Political subsidy	1,04,000	1,00,000	1,00,000
Miscellaneous	69,000	54,000	78,000
TOTAL	24,15,000	36,55,000	42,25,000

We deal below with the more important of these heads.

14. *Political Agents.*—The expenditure classified under this head in Baluchistan is on account of the ordinary administrative organisation which is elsewhere classified under General Administration. We have examined this expenditure in consultation with the Agent to the Governor General and he has proposed to effect economies amounting to Rs. 1,45,000 in 1923-24 and to take steps to reduce clerical establishments gradually to pre-war numbers.

15. *Levy Corps.*—We append a comparative statement giving, for the years specified, particulars of the strength and cost of the police and of the various irregular forces maintained in Baluchistan (Appendix R). The formations classified as levy corps include the Mekran Levy Corps and the

Zhob Militia which are of the same standard of discipline as the formations of militia and scouts in the tribal areas of the North-West Frontier Province.

16 *Levies and other irregular formations—Scouts.*—Scouts, of which a limited number is maintained in Zhob, differ in class from the North-West Frontier Province scouts and the levy corps just mentioned, and consist of tribesmen serving in their own country armed with Government rifles.

Tribal or district levies.—There are no police or other similar officials in the rural areas, and district levies perform the duties of police, process servers, messengers, etc. In Chagai the system of tribal responsibility has been substituted for the ordinary levy service as an experimental measure and lump sum payments are made to the tribal sardars who are responsible for keeping peace and order.

Auxiliaries.—We are informed that formations bearing this title now being enlisted in Zhob are similar to the khassadars in the North-West Frontier Province but do not provide their own rifles.

Temporary levies.—These mainly consist of the Sarhad levies who are employed for the protection of the Mirjawah-Duzdap railway. It is hoped that conditions in the early future will make it possible to dispense with this force, saving Rs. 96,000.

17. Apart from the Sarhad levies, we are not in a position to recommend any substantial reduction in the strength of the various irregular forces in Baluchistan, which, having regard to the length of frontier involved, constitute a relatively economical form of protection. We recommend, however, that no further additions be made to their existing strength. We are informed, for example, that proposals have been put forward for adding 4 companies to the Zhob Levy Corps, at an initial cost of Rs. 1,45,000 and a recurring annual cost of Rs. 5,27,000, and additional khassadars costing Rs. 1½ lakhs annually with the object of making it possible to withdraw a regular battalion from Fort Sandeman. These proposals are apparently due to the great cost of hired transport involved in supplying the troops at Fort Sandeman, *vide* paragraph 19 of our Report on Army expenditure. The position will, however, be changed if a light railway from Hindubagh to Fort Sandeman is constructed; and as these additions to the irregular forces would not result in any reduction in the strength of the Army we recommend that they be abandoned.

18 Both the Zhob and the Mekran Levy Corps were formerly organised on the Silladar system, but after the war this system was modified, Government animals being substituted for privately owned animals. Owing to the high prices of foodstuffs there has been a large increase in the cost of feeding these animals, the present contract for which runs to July 1923. With the fall in prices which has taken place it should be possible to effect substantial economies when the contract is renewed, and we consider that a reduction of at least Rs 50,000 should be made in the estimates for 1923-24

19. *Summary.*—We recommend that the provision for political expenditure in Baluchistan in 1923-24 be limited to Rs. 39,34,000, a reduction of Rs. 2,91,000.

KABUL LEGATION.

	Rs.
1913-14, Actual Expenditure	40,000
1922-23, Budget Estimate	5,26,000

20. We understand that the provision proposed for 1923-24 is Rs. 4,80,000, a saving of Rs. 46,000. It is proposed to build a Legation in Kabul at a cost of Rs. 16 lakhs. We understand the land has already been acquired at a cost of Rs. 80,000 but the building has not yet been commenced. We think it is well worth consideration whether a less expensive building than that contemplated should not suffice in the present financial conditions, and we recommend that, before the building is commenced, the plans be reconsidered with a view to restricting the cost, if possible, to a smaller figure.

ADEN AND ARABIA.

21. The expenditure under these heads is distributed as follows.—

	1913-14	1921-22.	1922-23.
	Rs	Rs	Rs
Aden	2,48,300	3,48,000	4,12,000
Jeddah Vice-Consulate	13,000	1,000	16,500
Hodeida Vice-Consulate	15,700	3,000	18,500
Baghdad Residency	96,000		
TOTAL	3,73,000	3,52,000	4,42,000

22. *Aden.*—The above expenditure includes only expenditure borne on the political estimates. The total net cost of the civil and military administration of Aden in 1913-14 and 1921-22 was as follows.—

	1913-14.	1921-22.
	Rs	Rs.
Civil Revenue	4,64,000	10,11,000
Civil Expenditure	7,39,000	11,22,000
Deficit	2,75,000	1,11,000
Military expenditure	28,13,000	70,00,000
Less contribution from His Majesty's Government	10,80,000	20,80,000
Net military expenditure	17,33,000	49,20,000
TOTAL NET COST	20,08,000	50,31,000

An annual payment of £100,000 by His Majesty's Government is credited as a contribution towards the cost of Aden, but only £72,000 of this amount really relates to Aden. The balance of £28,000 represents part of a contribution towards the cost of the India Office recommended by the Welby Commission, which was for purposes of convenience included in the same vote. In 1917 all military responsibility for Aden was taken over by the War Office and the political responsibility, in so far as external relations are concerned, by the Foreign Office, these responsibilities being at a later date transferred to the Colonial Office, while the responsibility for internal administration has remained with India up to the present time.

During the war the cost of Aden increased considerably and the arrangement followed as to the incidence of the increased cost has been that India should meet the cost of the pre-war strength of the garrison subject to the contribution of £72,000 and that the cost of any additional forces maintained should be met in equal shares by India and His Majesty's Government. In paragraph 17 of our Report on Army Expenditure we recommend that the garrison at Aden should now be reduced to the pre-war strength representing a saving of Rs. 10 lakhs on the estimates of 1922-23. We consider that the present arrangement should be reviewed, as it does not seem to us that India's share is strictly in accordance with the Welby Report which recommended that half the Military expenditure in Aden should be borne by His Majesty's Government.

23. We are informed that the question of the future administration of Aden has been raised in the Indian Legislature and elsewhere and it has been suggested to us as a possible solution that the Aden Settlement, town and port, should remain part of India, all civil and military administration resting with the officers of the Indian Government, but that the Aden Protectorate and political arrangements should be taken over by the British Government

which could obtain on payment from India such Indian troops as were necessary for the purpose. Under the suggested arrangement Great Britain would also accept responsibility for the protection of Aden, India making a reduced contribution towards its defence. This solution would, in our opinion, have several advantages and we recommend that it be examined with a view to its adoption.

24. Provision of Rs. 21,000 was included in the estimates for 1922-23 for the purchase of a launch for the administration of Kamaran. We are informed that this will not be charged against Indian revenues and that there will also be a saving of Rs. 3,600 owing to the abolition of a post of Assistant to the Resident. We further consider that Rs. 8,700, representing a portion of the pay of the Chairman of the Port Trust at present charged to Government, should be transferred to Port Trust Funds, and that the estimates for political expenditure in Aden in 1923-24 should be limited to Rs. 3,79,000, a reduction of Rs. 33,000.

25. *Jeddah and Hodeida*.—We are informed that it has been decided not to reopen the Vice-Consulate at Hodeida and that the provision of Rs. 13,000 under this head will not be required.

PERSIA AND THE PERSIAN GULF.

	Rs.
1913-14, Actual Expenditure	16,96,000
1921-22, Revised Estimate	18,01,000
1922-23, Budget Estimate	22,40,140

26. We are informed that, apart from the political expenditure shown above, the only other expenditure incurred in Persia from Indian revenues at the present time is Rs. 3½ lakhs, representing half the cost of an Indian battalion employed in the Persian Gulf, and the cost of maintaining the 'Lawrence' (see paragraph 27). We have examined in detail the expenditure of the various diplomatic establishments in Persia and the Persian Gulf with which India is concerned, and we are informed that the Foreign Department proposes to effect economies to the extent of Rs. 1,44,000 in the charges for diplomatic and consular services, of Rs. 62,000 in the cost of post and telegraph charges and escort at Tehran and of Rs. 15,000 at Muscat, a total saving of Rs. 2,21,000.

27. The budget estimates for 1922-23 included provision of Rs. 6,01,000 for the cost of lighting and buoying the Persian Gulf, but this figure has been reduced in the revised estimates to Rs. 4,34,000. The bulk of this expenditure represents the cost of the Royal Indian Marine vessel 'Nearchus' which is at present employed on these duties, the cost of stores for lighting and buoying the Gulf being included under expenditure in England. In paragraph 4 of our report on the Royal Indian Marine we have recommended that the cost of maintaining the 'Lawrence', which is at present utilised as a despatch vessel in the Persian Gulf, should be transferred to the political estimates and that she should be fitted up to perform the work at present carried out by the 'Nearchus' in addition to her own duties. This will make it possible to dispense with the 'Nearchus' and, allowing for the transfer of the 'Lawrence', there should be a saving of approximately Rs. 1 lakh on the budget estimates of 1922-23.

28. At present political expenditure in Persia is divided in moieties between the Indian and Imperial Exchequers, this arrangement being based on the recommendations of the Welby Commission. We are informed, however, that, owing to the lack of sufficiently strict definition, the question has arisen from time to time whether important individual items of expenditure are properly governed by this principle of division. We are impressed by the heavy liabilities imposed upon India during the war and we are strongly of opinion that the present arrangement should be revised without delay and that the Government of India should take over the whole cost of certain consulates, etc., which abut on India, and leave the others to the Home Government, possibly paying some share in one or two cases in which the two Governments have a mutual interest. It is, in our

opinion, very desirable to ensure that India's liabilities in Persia should be strictly limited and defined. We recommend, therefore, that a revision of the existing arrangements be considered, and also that the possibility be examined of making a charge to shipping for lighting and buoys in the Persian Gulf the cost of which is at present shared by India and the United Kingdom on the half and half basis.

29. The bulk of the expenditure in respect of which we have indicated savings of Rs. 3,21,000 in paragraphs 27 and 28 is divisible between the British and Indian exchequers and the net savings to Indian revenues will thus be about Rs. 1,60,000.

NEPAL.

	Rs.
1913-14, Actual Expenditure	76,000
1921-22, Revised Estimate	11,01,000
1922-23, Budget Estimate	1,07,790

30. The expenditure includes an annual present of Rs. 10,00,000 to the Nepal Government in recognition of the services rendered by Nepal during the war. Of the Rs. 1,08,000 for the cost of the Legation, we are informed that Rs. 10,000 represented abnormal expenditure on the renewal of tents and furniture, and that the British Envoy has proposed reductions of Rs. 4,700 in establishment, a total saving of Rs. 14,700.

TIBET FRONTIER.

	Rs.
1913-14, Actual Expenditure	3,47,000
1921-22, Revised Estimate	4,84,520
1922-23, Budget Estimate	4,21,300

31. This expenditure represents charges in Sikkim, Bhutan and in the Gyantse and Yatung Trade Agencies. We are informed that the department is effecting a reduction of Rs. 42,000 in the cost of the Trade Agencies.

RESIDENCIES AND AGENCIES UNDER THE CENTRAL GOVERNMENT.

	Rs.
1913-14, Actual Expenditure	22,16,000
1921-22, Revised Estimate	25,23,450
1922-23, Budget Estimate	26,15,070

32. This expenditure is distributed as follows.—

	1913-14	1921-22.	1922-23.
	Rs	Rs.	Rs.
Delhi		750	750
Rajputana	5,50,000	6,40,590	6,76,150
Central India	5,09,000	5,98,330	5,83,170
Gwalior	52,000	89,080	85,690
Hyderabad	1,91,000	2,48,480	2,45,740
Bangalore		1,600	1,560
Mysore	1,33,000	1,34,730	1,69,650
Baroda	86,000	1,00,920	1,17,360
Kashmir and Punjab Agencies	6,93,000	6,59,000	7,30,000
	22,16,000	25,23,450	26,15,070

33. *Rajputana*.—In Rajputana there are 6 Agencies and Residencies, one having been recently abolished, saving Rs. 53,000, and also 2 Assistant Agencies held by officers of the Mewar Bhil Corps (see paragraph 43). These Agencies are subordinate to the Agent to the Governor-General who has his headquarters in Ajmer, the cost of the Rajputana Agency being Rs. 2,26,000 and of the subordinate Agencies Rs. 4,50,000. The Foreign and Political Department have proposed economies in political expenditure in Rajputana amounting to Rs. 91,000, including the Rs. 53,000 just mentioned.

34. *Central India*.—We understand that one of the appointments of Medical Officer at Indore will be dispensed with at the end of the current year, saving Rs. 21,000, and we recommend that it be considered whether it is necessary to maintain all the present subordinate Agencies

35. *Gwalior*.—We are informed that savings of Rs. 3,400 have been effected and that a proposal to abolish the appointment of Residency Surgeon, costing Rs. 23,000, and to place the Residency in visiting medical charge of the Civil Surgeon at Jhansi has been provisionally accepted saving Rs. 26,000.

36. *Mysore*.—A small saving of Rs. 1,600 is proposed. We understand that the Resident, in addition to his strictly political duties, administers the Civil and Military station of Bangalore, and that for these services one-third of the cost of the Residency is recovered from the revenues of the assigned tract. We are informed that it is doubtful whether in present circumstances this proportion represents a sufficient payment for the charges actually arising from the administration of the station and we recommend that the question be further examined.

37. *Baroda*.—We are informed that reductions in expenditure amounting to Rs. 6,000 have been effected.

38. *Kashmir and Punjab Agencies*.—We understand that the Kashmir Durbar proposes to take over its own medical arrangements, which are at present carried out by the Residency Surgeon, and that it will then be possible to employ a Residency Surgeon for only half the year, saving Rs. 11,000. Other savings of Rs. 8,750 and Rs. 16,000 are proposed by the Department in the case of the Kashmir Residency and the Gilgit Agency respectively.

POLITICAL CHARGES IN THE MAJOR PROVINCES.

	Rs.
1913-14, Actual Expenditure	39,36,000
1921-22, Revised Estimate	36,22,000
1922-23, Budget Estimate	36,30,000

39. *Bombay (excluding Aden)*.—The political expenditure incurred in this Presidency is distributed as follows:—

	1913-14	1921-22	1922-23.
	Rs	Rs	Rs
Kathuwar	1,77,360	4,18,000	4,09,249
Cutch	43,052	55,640	83,090
Mahikantha	66,703	509,368	83,228
Palanpur	44,905	97,490	1,04,378
Southern Mahratta Country	45,580	91,085	71,885
Minor Agencies and Miscellaneous	30,000	46,137	78,658
Envoys, State Refugees, etc.	2,07,400	1,67,280	1,46,512
TOTAL	6,15,000	9,85,000	9,76,000

40. The expenditure shown in the table represents the net cost of the various groups of States after allowing for contributions and other receipts. We are informed that various economies have been suggested, but we are of opinion that there is no justification for the heavy charges borne by public revenues in connection with these States. We understand that at present the Bombay Government maintains a separate political department which deals with 377 States and estates and that, in Kathuwar and the small areas of Mahikantha and Palanpur, the political officers are to a great extent responsible for the actual administration of the States and estates, their duties being analogous to those of a district officer. We also understand that, in pursuance of the Reforms Scheme, it has been proposed that all the major States and the whole of Kathiawar should be brought into direct relations with the Government of India but that the matter is still under consideration.

We are informed that the final proposals of the Government of Bombay have not yet been received, but we are of opinion that an arrangement under which the Local Government is responsible for administration while the cost is borne by the Central Government is unsuitable, and that, if it be decided that the Government of Bombay should continue to deal with the States, it should be considered whether the expenditure involved should not be reclassified under the appropriate heads such as general administration, land revenue, police, etc., and transferred to the Local Government together with any receipts arising in the States. On the other hand, if the States are transferred to the Government of India, we recommend that the possibility of uniting Baroda, Kathiawar, Cutch, Mahikantha and Palanpur under an Agent to the Governor General be explored with a view to effecting economies in establishment sufficient to reduce the expenditure to pre-war level; and that, meanwhile, a reduction of at least Rs. 1,75,000 should be effected in the net estimates of these States in 1923-24

41. *Burma.*—The political expenditure in Burma is distributed as follows.—

	1913-14.	1921-22	1922-23.
	Rs.	Rs	Rs.
Political officers in Shan States and Chin Hills	3,61,000	5,58,000	5,94,000
Charges on North-East Frontier	9,65,000	10,50,000	11,00,000
Miscellaneous	2,000	99,000	7,000
TOTAL	13,28,000	17,07,000	17,01,000

The expenditure on Political Agents is incurred in the administration of the Shan States and Chin Hills, while charges on the North-East Frontier represent the cost of the occupation of the Hpimaw and Putao tracts. We are informed that there will be a saving under the former head of approximately Rs. 40,000, as provision of this amount was made in 1922-23 budget for an adviser on Chinese affairs who has not been appointed. Of the provision of Rs. 11 lakhs for charges on the North-East Frontier, about Rs. 6 lakhs represents the cost of police and Rs. 1,73,000 expenditure on public works. There should be a considerable saving in the cost of supplies and rations as a result of the fall in prices and it should also be possible to reduce the expenditure on public works, and we therefore recommend that a reduction of Rs. 1,50,000 should be made in the estimates for 1923-24.

We are informed that a proposal has been made that the Central Government should make a fixed contribution for these charges and we recommend that this proposal be adopted, as we consider it undesirable that, though the Local Government is responsible for the administration, the Central Government should be liable for any increase in expenditure involved.

42 We are informed that savings of Rs. 21,000 have been effected in Bengal and of Rs. 1,000 in Madras.

MISCELLANEOUS EXPENDITURE.

	Rs
1913-14, Actual Expenditure	27,86,000
1921-22, Revised Estimate	14,40,000
1922-23, Budget Estimate	10,10,700

43. The more important items included under this head are Rs. 5,09,000 for Indian State Forces, Rs. 1,93,000 for the Mewar Bhil Corps and Rs. 2,11,000 for the Malwa Bhil Corps. We are informed that it is proposed to effect reductions in the strength of these Corps, saving Rs. 18,000 in the case of the former and Rs. 1 lakh in the case of the latter. The cost of the Mewar Corps is to some extent set off by revenue of Rs. 60,000 from certain assigned lands and that of the Malwa Corps by contributions amounting to Rs. 54,000.

We make no recommendation with regard to the Indian State Forces, as we are informed that they are of much value and have been taken into account in determining the strength of the regular forces.

EXPENDITURE IN ENGLAND.

	Rs
1913-14, Actual Expenditure	2,26,000
1921-22, Revised Estimate	16,08,000
1922-23, Budget Estimate	12,45,000

44. The bulk of the expenditure represents leave and deputation allowances. Some provision for stores for lighting and buoying the Persian Gulf is also included. We are informed that the estimate of expenditure in England in 1923-24 is Rs. 7,08,000, a reduction of Rs. 5,37,000.

GENERAL.

45. The recommendations which we have made, together with the reductions proposed by the Department, should result in an annual saving of Rs. 45,70,000. They have been discussed with the Foreign and Political Department and in general have their approval.

CONCLUSIONS.

Having reviewed the Political expenditure we recommend that :—

- (1) no further increase be made in the strength of the Scouts and other irregular forces on the North-West Frontier and that existing establishments be reviewed as soon as the position on the frontier is stabilised, with a view to effecting progressive reductions in the cost of frontier defence ;
- (2) the present arrangements for the administration of Aden and the incidence of charges be reviewed on the lines which we propose ;
- (3) the present principles governing the incidence of expenditure in Persia be revised without delay and that India's liabilities in Persia be strictly defined and limited ;
- (4) if the groups of States and estates in the Bombay Presidency remain with the Local Government, it be considered whether the charges cannot be transferred to provincial revenues, or, in the alternative, whether the bulk of the States and estates cannot be grouped under a single Agent to the Governor General and the expenditure reduced to pre-war level ;
- (5) the charges for political expenditure in Burma be provincialised ;
and
- (6) Political expenditure for 1923-24 be limited to Rs. 2,47,44,000, a saving of Rs. 45,70,000.

APPENDIX A.

Comparative statement showing numbers and cost of irregular Civil Forces in the North-West Frontier Province

Serial No.	Name of Force	|| SANCTIONED STRENGTH ON ||						Cost			
		1st April 1914		1st April 1921		1st April 1922.		Actuals; 1913-14	Actuals; 1921-22	Estimated expenditure, 1922-23	
		Permanent	Temporary	Permanent	Temporary	Permanent	Temporary				
1	Ordinary Police (includes armed Police)	4,144		5,405		5,405		Rs 11,02,461	Rs *27,79,100	Rs *30,77,100	* Please see remarks in attached note.
	Railway Police	...		190		190	..		82,628	94,800	
	Total Police	4,144		5,595		5,595		11,02,461	28,70,728	31,71,700	
2	Khyber Rifles	1,609						4,88,942	1,888		† This temporary establishment, sanctioned for the duration of the war and one year thereafter, has now been disbanded.
3	Kurram Militia	1,407		1,407	253	1,407	†225	3,27,971	8,48,859	8,50,114	
4	Tochi Scouts (Northern Waziristan Militia)	1,803		895		872		9,38,571	4,76,696	112,38,581	
5	Southern Waziristan Scouts (Southern Waziristan Militia)	1,595		498		964			5,58,099	B	
6	Mohmand Militia	...		1,857					40,244		
7	Chitral Scouts	990		990		990		49,378		51,056	
	Total Militias and Scouts.	6,984		5,147	253	4,253	225	17,79,862	19,20,286	21,34,701	
8	Frontier Constabulary (i.e. Border Police)	2,456		2,445	1,565	3,226	1,565	5,99,287	22,42,117	23,95,332	
	<i>Tribal and District Levies.</i>										
9	Chitral Levies	111		111		111		} 1,11,829 }	22,761	24,810	
10	Swat Levies	181		206		208			50,907	55,152	
11	Dir Levies	376		370		385		82,086	91,410	1,06,185	
12	Upper Swat River Canal Khassadars	293		149		149		2,810	5,915	128,617	‡ Charge since transferred to Irrigation Budget.
13	Shilman Levies	18		18		18			2,520	2,520	
14	Khassadar for Mohmand Blockade Line			300		400			60,000	72,000	
15	Kohat Levies				1,391		476		2,81,707	D2,21,640	
16	Banna Levies	74		85		85	383		4,726	72,384	
17	Bhittani Levies									13,460	
	Total	1,058		1,159	1,391	1,306	809	1,53,263	6,89,946	5,94,768	
	<i>Khassadars</i>										
18	Khyber Khassadars				687	1,021			3,65,138	4,84,400	
19	Tochi Khassadars					572				2,33,000	
20	Wana Khassadars					775				2,00,000	
21	Additional Khassadars (Tochi and South Waziristan)					2,244				\$14,00,000	§ Debitable to special Waziristan allotment.
	Total				637	4,612			3,65,138	2,67,400	
	GRAND TOTAL	14,587		14,376	4,046	18,972	2,599	36,39,663	79,88,210	1,05,63,901	

|| The actual strengths are in many cases less than those shown as the Corps have not yet been recruited to full strength.

A. Subsequent increases have been sanctioned as follows --

Tochi Scouts—6 British officers, 1,315 Indian rank and file
 South Waziristan Scouts—8 British officers, 1,760 Indian rank and file
 Total annual expenditure on full strength according to sanctioned scale --

	Rs
Tochi Scouts	13,08,787
South Waziristan Scouts	14,24,744
	<u>27,33,531</u>

B. The Mohmand Militia were converted into constabulary with effect from the spring of 1922. Their strength is 6 companies infantry and 1 company mounted infantry.

C. The original strength of 20 companies infantry and 2 companies mounted infantry was increased in 1916 by 4 companies infantry and 1 company mounted infantry and in 1917 by the same number of companies. The final increase took place in 1920 when 4 more companies of infantry were sanctioned thus making a total of 32 companies infantry and 4 companies mounted infantry. Since 1st April 1922, 2 companies infantry have been disbanded and the question regarding retention or disbandment of the remaining 10 additional companies infantry and 2 companies mounted infantry is still under consideration.

APPENDIX B.

Comparative Statement showing numbers and cost of irregular Civil Forces in Baluchistan.

Serial No.	Name of force.	SANCTIONED STRENGTH ON			Cost			REMARKS
		1st April 1914.	1st April 1921.	1st April 1922.	(Actuals) 1921-22.	(Estimates) 1921-22	(Estimates) 1922-23.	
					Rs.	Rs.	Rs.	
1	Ordinary Police	1,226	1,852	1,853	4,55,657	10,66,800	10,97,590	The whole police force in Baluchistan is armed.
2	Railway Police	191	217	217	51,093	96,200	98,780	
	TOTAL POLICE—ACCOUNTS HEAD "26.—POLICE"	1,417	2,069	2,070	5,06,750	11,63,000	11,96,370	
3	Zhob Levy Corps	1,305	1,495*	1,136	5,06,939	8,24,500	3,41,820	*Reduction to 1,139 was effected on the revision of 1920-21 but did not come into accounts until after March 1921, so that the old 1920 strength was included in budget of 1921-22, but was not entertained in that year.
4	Mekran Levy Corps	482	633	652	1,77,708	2,73,200	3,65,800	
5	Zhob Scouts . . . . .	...	150	332	..	24,284	66,180
6	District Levies	2,476	2,035†	2,035†	6,98,177	11,12,626	11,19,760	†In Chagai the system of tribal responsibility has been substituted for ordinary levy service as an experimental measure and levies reduced accordingly.
7	Temporary Levies . . . . .	...	...	313	...	.	1,17,500
	TOTAL LEVIES—ACCOUNTS HEAD "29.—POLITICAL"	4,263	4,313	4,468	13,82,324	22,39,600	25,11,060	
	GRAND TOTAL—POLICE AND LEVIES	5,680	6,382	6,538	18,89,574	34,02,600	37,07,430	

PART VI.
CIVIL ADMINISTRATIVE DEPARTMENTS.

AUDIT.

The estimate for 1922-23 compares with the revised estimate for 1921-22 and the actual expenditure in 1913-14 as follows :—

	Rs.
1913-14, Actual Expenditure	39,59,000
1921-22, Revised Estimate	72,59,000
1922-23, Budget Estimate	83,16,000

This expenditure may be subdivided as follows :—

Expenditure in	1913-14.	1921-22.	1922-23
	Rs.	Rs.	Rs.
INDIA	88,48,000	68,00,000	78,96,000
ENGLAND	1,11,000	4,59,000	4,20,000
TOTAL	89,59,000	72,59,000	83,16,000

2. *Expenditure in India.*—We have ascertained that the preliminary estimate for expenditure in India in 1923-24 is Rs. 76,08,000, a reduction of Rs. 2,88,000.

We have discussed the expenditure on audit with the Auditor General. He informed us that he was prepared to convert certain posts of Assistant Accountants-General into posts of Assistant Accounts Officers and to fill a certain number of the latter class of appointments by members of the Subordinate Accounts Service, saving Rs. 62,000 per annum. We also consider that the appointment of the Auditor, Government of India Sanctions, estimated to cost Rs. 26,000 in 1923-24 should be dispensed with making a total additional saving of Rs. 88,000.

3. It has been represented to us that much work is thrown on the audit department by the requisitions of local Governments. We are informed that the Auditor General is empowered to determine the form of the accounts to be rendered to his department and of the initial accounts on which the former are based, and that he is only required to furnish the various local Governments with information which can be derived from the accounts maintained in the offices under his control. In practice, the Auditor General appears to accede to the demands of the administrations in regard to the details to be shown in the accounts, with the result that many of the 14,000 detailed heads which were abolished a few years ago have been reintroduced. It is no doubt reasonable that the accounts should be moulded to fit administrative requirements, but the position is unsatisfactory in that the demands from Provincial Governments entail extra expenditure for which they have no responsibility.

4. A similar difficulty is said to arise from the rule under which the Auditor General is bound to furnish local authorities with such assistance as may be required in the preparation of their annual budget estimates. It appears that the local Governments decide what assistance they or their subordinates may require, though under the Devolution Rules the duty of preparing the budget is laid upon the financial department of the local Government. For example, in some cases the audit department has undertaken the printing of the budget estimates, for the preparation of which the local Governments are legally responsible.

5. The Auditor General informed us that an attempt had previously been made to separate audit and accounts, but that the experiment broke down as

a result of the present system under which payments are audited before they are brought to account. In our opinion, in view of the constitutional difficulties arising under the Reforms Scheme from the fact that a Provincial Government can require the audit and accounts department to maintain an account for which the Central Government pay, it is desirable to reopen the question of the separation of the audit and accounts. The Auditor General informed us that if such separation were recommended, it would be necessary to abandon the existing system of audit before account, but that he would acquiesce in this.

6. We are impressed by the voluminous rules against which audit is conducted. The Auditor General informed us that he had in fact been working for several years on the simplification of the rules, but we recommend that the question of further simplification be explored.

Expenditure in England.—This includes £7,900 on account of the net cost of the audit establishment at the India Office, the balance being mainly for leave allowances.

CONCLUSIONS.

Having reviewed the expenditure on audit, we recommend that—

- (a) the possibility of separating accounts and audit be considered;
- (b) the question of the further simplification of existing rules be explored; and
- (c) the budget estimate for audit in 1923-24 be limited to Rs. 79,40,000, saving Rs. 3,76,000.

ADMINISTRATION OF JUSTICE

The estimates of expenditure and receipts for 1922-23 compare with the revised estimates for 1921-22 and the actual expenditure and receipts for 1913-14 as follows:—

	Expenditure.	Receipts.
	Rs.	Rs.
1913-14, Actuals	8,87,000	2,60,000
1921-22, Revised Estimates	9,29,000	3,42,000
1922-23, Budget Estimates	10,29,000	3,49,000

2. This expenditure is for the maintenance of Civil and Criminal Courts in the minor administrations and is distributed as follows:—

	1913-14	1921-22	1922-23
	Rs.	Rs.	Rs.
NORTH-WEST FRONTIER PROVINCE	4,70,000	4,31,000	4,58,000
DELHI	1,14,000	1,24,000	1,45,900
AJMER	59,000	87,300	93,060
BANGALORE	47,000	89,000	1,02,800
OTHER MINOR ADMINISTRATIONS	73,000	1,25,300	1,49,240
MISCELLANEOUS	1,21,000		
	8,84,000	8,57,000	9,49,000
EXPENDITURE IN ENGLAND Rs 15= £1	3,000	72,000	80,000
TOTAL	8,87,000	9,29,000	10,29,000

We deal seriatim with the principal items shown above.

NORTH-WEST FRONTIER PROVINCE.

3. The expenditure shewn for 1913-14 includes amounts since transferred to other heads. Allowing for these transfers, the comparative figure for 1913-14 would be Rs. 2,57,000.

4. We understand that it is proposed to effect economies of about Rs. 12,000 and that provision of Rs. 11,000 for gram compensation allowance will not be required. We think that some saving should also be possible in clerical establishments, which have increased from 42 in 1913-14 to 73 at the present time, and in contingencies, and that the estimates for 1923-24 should be limited to Rs. 4,28,000, a reduction of Rs. 30,000.

We are informed that it is proposed to apply in this area the revised rates of court fees which have been adopted in the Punjab and that the revenue from judicial stamps and process fees will be increased by Rs. 3½ lakhs to a total of over Rs. 10 lakhs.

DELHI.

5. There has been a considerable increase in the number of original civil suits from 1,924 in 1913-14 to 3,316 in 1921, and three temporary Sub-Judges are said to be required to dispose of accumulated work. In view of the desirability of the rapid disposal of cases we make no recommendation. We understand that the new Punjab scale of court fees is being adopted in Delhi and that an increase in the revenue from judicial stamps from Rs. 4,57,000 to Rs. 6,72,000 is anticipated in 1923-24.

AJMER-MERWARA.

6. This expenditure includes provision for an additional District and Sessions Judge (the Commissioner exercising the powers of an appellate court), two Sub-judges and a Judge of a Court of Small Causes, the latter having been constituted since 1913-14. We have been furnished with details shewing the establishment maintained in Gurgaon, the nearest British district. Gurgaon, though smaller in area, contains a population of 800,000 compared with 500,000 in Ajmer, but its establishment is limited to a Sub-judge and a Munsiff's Court and it possesses no separate District and Sessions Judge. In our opinion the establishment in Ajmer is excessive and we recommend that the separate Court of Small Causes should be abolished, saving Rs. 16,000.

We are informed that no steps are being taken, as in other minor administrations, to increase the revenue from judicial stamps, on the ground that proposals have been under consideration for merging Ajmer in the United Provinces and that the scale of court fees has not been raised in the latter administration. We consider it unnecessary to wait until a decision has been reached in this matter, and recommend that the scale of fees prescribed in the Punjab should be adopted, which, it is estimated, would increase the present revenue of Rs. 2,00,000 from judicial stamps by Rs. 1,00,000.

7. *Other Minor Administrations.*—We understand that a reduction of expenditure of Rs. 15,000 is contemplated under this head in Coorg by the abolition of a post of District Magistrate and that the application of the revised Madras scale of court fees will raise the revenue by Rs. 11,000. We make no recommendation with regard to the remaining areas.

CONCLUSION.

Having reviewed the estimates for Administration of Justice, we recommend that the estimates for 1923-24 be limited to Rs. 9,63,000, saving Rs. 61,000.

JAILS AND CONVICT SETTLEMENTS.

The estimates of expenditure and receipts for 1922-23 compare with the revised estimates for 1921-22 and the actual expenditure and receipts for 1913-14 as follows :—

	Expenditure.	Receipts
	Rs.	Rs.
1913-14, Actuals	19,78,000	4,67,000
1921-22, Revised Estimates	45,28,000	10,07,000
1922-23, Budget Estimates	44,35,000	11,11,000

This expenditure, which is incurred on the penal settlement in the Andamans and on jails in the minor administrations, is distributed as shown below :—

	1913-14	1921-22	1922-23.
	Rs	Rs	Rs.
ANDAMANS	16,12,000	36,00,000	35,18,000
OTHER MINOR ADMINISTRATIONS	3,59,000	8,95,000	8,31,000
MISCELLANEOUS	5,000		
EXPENDITURE IN ENGLAND	19,78,000	44,95,000	43,99,000
(Rs. 15 = £1)	2,000	33,000	36,000
TOTAL	19,78,000	45,28,000	44,35,000

We deal with these heads seriatim.

ANDAMANS.

	Expenditure.	Receipts
	Rs	Rs
1913-14, Actuals	16,12,000	3,89,000
1921-22, Revised Estimate	36,00,000	9,10,000
1922-23, Budget Estimate	35,18,000	10,18,000

2. We are informed that, mainly as a result of a recent local investigation into the expenditure of this settlement, the budget estimate for 1923-24 has been reduced to Rs. 30,75,000, saving Rs. 4,43,000. Proposals have been under consideration for closing the penal settlement and developing the Andamans as a free settlement but we are informed that the adoption of this scheme is dependent upon the provision of more jail accommodation in the Major Provinces. We understand that they find it difficult to provide the necessary funds in the present condition of their finances, and also that the jail population in the penal settlement has largely increased recently owing to the transportation of large numbers of Moplah prisoners. The bulk of the prisoners come from the Major Provinces where insufficient jail accommodation is available, and the question arises whether a charge should be made to Provincial Governments for their prisoners maintained in the Andamans.

3. The main cause of the increase in the cost of the settlement since 1913-14 is the heavy expenditure, estimated at Rs. 11,48,000 for 1922-23, incurred in connection with the S. S. Maharaja, which has been chartered by Government for the carriage of passengers, timber, stores and mails to and from the Andamans. We understand that in pre-war years Government paid directly for services rendered in the transport of convicts and stores, and that the actual expenditure for passage money, freight and carriage of stores in 1913-14 amounted to about Rs. 2 lakhs. From 1916 to 1919 the steamer was impressed and run by Government, payment being made to the owners at the blue book rate of Rs. 14 per gross ton which was then below the market rate. In September 1919, a temporary contract was entered into at the rate of Rs. 30 per ton of dead weight, and the contract was renewed at the same rate for a period of 5 years in September 1920. The contract was made in sterling and the fall in exchange has resulted

in a heavy increase in the rupee payment under the contract. The total earnings which accrued to Government by the charter of the steamer for the year ended August 1922 amounted to Rs. 5,72,000. The net loss from the charter of the steamer in that year was therefore Rs. 5,76,000.

MINOR ADMINISTRATIONS.

4. The increased expenditure under Minor Administrations is due to revised scales of pay, and a large increase in the number of prisoners. Some reduction should be possible in 1923-24 owing to the fall in cost of food-stuffs and we recommend that a saving of at least 10 per cent. should be effected in the cost of diet and clothing in 1923-24, which would give the following savings :—

	Rs.
North-West Frontier Province	25,000
Baluchistan	5,000
Delhi	4,000
Ajmer	3,000
TOTAL	<u>37,000</u>

5. The expenditure in England is mainly for leave allowances.

CONCLUSIONS.

Having reviewed the expenditure on Jails, we recommend that—

- (1) when the contract for the S.S. Maharaja comes to an end, more favourable terms be secured for the service, if it is considered necessary to maintain it; and
- (2) the budget estimate for 1923-24 be limited to Rs. 39,35,000, saving Rs. 4,80,000.

POLICE.

The estimates for 1922-23 compare with the revised estimate for 1921-22 and the actual expenditure for 1913-14 as follows :—

	Rs.
1913-14, Actual Expenditure	33,04,000
1921-22, Revised Estimate	87,24,000
1922-23, Budget Estimate	81,90,000

The expenditure is incurred almost entirely in the minor administrations over which it is distributed as follows :—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
NORTH-WEST FRONTIER PROVINCE	17,05,000	53,10,000	47,73,000
BALUCHISTAN	5,11,000	11,63,000	12,16,000
DELHI	3,92,000	7,81,000	7,92,000
COORG	62,000	1,12,000	1,21,000
AJMER-MERWARA	2,08,000	3,32,000	3,28,000
RAJPUTANA	1,16,000	3,43,000	3,19,000
CENTRAL INDIA	1,46,000	2,22,000	1,56,000
HYDERABAD	37,000	24,000	42,000
BANGALORE	99,000	2,08,000	2,38,000
MISCELLANEOUS	4,000	11,000	7,000
	32,80,000	85,61,000	79,97,000
EXPENDITURE IN ENGLAND (Rs. 15=£1)	24,000	1,63,000	1,93,000
TOTAL	33,04,000	87,24,000	*81,90,000

* The estimate for 1922-23 takes into account deductions to the extent of Rs. 9,51,000 provisionally made under this head to meet cuts made by the Assembly on the total estimates for the minor administrations, the police estimates originally presented having amounted to Rs. 91,41,000. The bulk of these deductions was, however, subsequently taken under other heads and the provision of Rs. 81,90,000 does not therefore represent the actual total expenditure on police.

We deal with the above items seriatim.

NORTH-WEST FRONTIER PROVINCE.

	Rs.
1913-14, Actual Expenditure	17,05,000
1921-22, Revised Estimate	53,10,000
1922-23, Budget Estimate	47,78,000

2. The original estimate for expenditure on police was Rs. 55,69,000, but a sum of Rs. 7,91,000 was provisionally deducted under this head to meet part of the lump cut made by the Assembly in the estimate for this administration. The actual reduction effected under this head amounted to Rs. 1,74,000, leaving the estimate of expenditure for the current year at Rs. 53,95,000.

3. The police in this administration fall into two main classes, the ordinary police who are primarily concerned with the prevention and detection of internal crime and the maintenance of law and order and the frontier constabulary, whose duties are of a semi-military nature, namely, the repelling of attacks by and the pursuit and interception of raiding gangs from independent territory. The following statement shows the distribution of the expenditure.—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
Superintendence	65,000	91,000	1,00,000
District Executive Force	9,91,000	26,26,900	23,51,000
Special Police	5,99,000	23,79,300	23,95,000
Railway Police . . . .	...	99,500	1,01,000
Criminal Investigation Department	45,000	1,08,000	1,17,000
Miscellaneous	5,000	5,300	5,000
	17,05,000	53,10,000	55,69,000
Reductions made towards meeting the cut made by the Assembly . . . .	.	...	1,74,000
TOTAL . . . .	.	..	53,95,000

4. *Superintendence*—

We understand that a reduction of Rs. 10,000 will be effected in this expenditure owing to the appointment of more junior officers, and we consider that further economy should be effected by abolishing the appointment of the Personal Assistant, saving a further Rs. 16,000.

5. *District Executive Force*—

	Rs.
1913-14, Actual Expenditure	9,91,000
1921-22, Revised Expenditure	26,26,000
1922-23, Budget Expenditure	28,51,000

The numbers have increased from 4,144 in 1914 to 5,405 in 1922. We are informed that, largely as result of the recommendations of the local Retrenchment Committee, a reduction of Rs. 3,57,000 is proposed in this expenditure for 1923-24. Of this Rs. 72,000 is due to the replacement of additional police in Bannu by levies, the cost of which is borne on the political estimates. The balance will be made up by reduction in the strength of the force by 251 men and two Deputy Superintendents and by savings of Rs. 1,25,000 in the provision for contingencies and grain compensation. With this reduction the strength of the district police will remain at 5,150 men or 2.3 police per thousand of the population compared with one per thousand maintained in the Punjab. We recognise that conditions in the frontier districts are more troubled than in the Punjab, but we are not convinced that it is essential to maintain under the more settled conditions which now exist, a force which is based largely upon war conditions and which costs, even with the reductions

proposed, over $2\frac{1}{2}$ times the pre-war cost. A proportion double that of the Punjab would necessitate a force of about 4,500 men, and we consider that a further substantial reduction should be effected and the provision for 1922-23 reduced by Rs. 6 lakhs or about Rs. $2\frac{1}{2}$ lakhs over and above the saving proposed by the local administration.

6. We observe that the cost of allowances to the police has increased from Rs. 1,11,000 in 1913-14 to Rs. 7,32,000 in the current year's estimates. A reduction of Rs. 1 lakh is proposed in the provision for grain compensation owing to the fall in prices. Special frontier allowances of Rs 4 per month are granted to the police in addition to their regular pay which is fixed on the Punjab scales. We are informed that there is no scarcity of recruits for the force and we recommend that the necessity for the continued payment of this allowance be reconsidered in view of the present substantial reduction in the cost of living. The cost of clothing for the police amounts to Rs. 1,00,000 and we recommend that enquiry should be made whether economies could not be effected by a system of central supply for this and other local forces.

7. *Special Police (Frontier Constabulary)*—

	Rs.
1913-14, Actual Expenditure	5,99,000
1921-22, Revised Estimate	23,79,300
1922-23, Budget Estimate	23,95,000

The strength of this force has increased from 2,456 in 1914 to 4,790 at the present day. The original strength of the force was 22 companies of infantry. Five companies were added in 1916 and a similar number in 1917. A further increase took place in 1920 when four more companies were added. We are informed that savings of Rs. 1,54,000 have been effected in the current year and that a reduction of Rs. 2,18,000 is proposed in the estimates for 1923-24, thus reducing the provision for "Special Police" to Rs 21,77,000. This reduction is being effected by the amalgamation of the post of Commandant, Frontier Constabulary, with that of the District Officer, Frontier Constabulary, Peshawar, by the abolition of two companies of constabulary and by smaller provision for grain compensation. It has been represented to us, however, that it is undesirable to effect further reduction in the strength of the frontier constabulary as this force constitutes the most economical form of protection against raids from independent territory which, we are informed, are still numerous. We, therefore, make no recommendation for further reduction until more settled conditions prevail.

8 *Summary*—We are informed that the budget estimate for expenditure on police in the province in 1923-24 is Rs. 50,25,000. The specific reductions which we have proposed in addition to those taken into account by the Chief Commissioner, amount to Rs. 2,66,000 and we recommend that the estimate for 1923-24 be limited to Rs. 47,59,000, a saving of Rs. 19,000 on the estimate for 1922-23 shown in the table in paragraph 2.

BALUCHISTAN.

	Rs.
1913-14, Actual Expenditure	5,11,000
1921-22, Revised Estimate	11,63,000
1922-23, Budget Estimate	12,16,000

9. This expenditure is incurred on armed police employed in the towns of Quetta, Loralai, Sibi and Fort Sandeman, in the minor townships and on the railways, and the total number employed has increased from 1,417 in 1914 to 2,070 in 1922. Part of this increase in numbers has been due to the policing of the Nushki-Duzdap Railway and to temporary additions made to the C. I. D. staff. As the population of the administered areas is 121,000, this represents an average of 5 policemen per thousand of the population compared with 23 per thousand in the North-West Frontier Province and one per thousand in the Punjab. Apart from the increase in numbers, we understand that the greater part of the increased cost of the force is due to the raising of the pay of constables from Rs. 11-14 to Rs. 23-26 and to an increase from Rs. 17 to

Rs 40 in the horse allowance granted to mounted men who now number 269. We are informed that the greater part of the force is recruited from the Punjab, which fact, together with the higher cost of living in Baluchistan, made it necessary to pay these high rates. We recommend, however, that, in view of the general fall in prices, the possibility be considered of introducing a lower scale of pay in the case of new recruits.

10. We are informed that the question of police organization in Baluchistan was recently examined by a local committee which, so far from recommending a reduction in expenditure, has come to the conclusion that additions to the force costing Rs 30,000 a year are required. We are further informed that the budget estimate for 1923-24 for expenditure on police in Baluchistan is estimated at Rs. 13,32,000, or Rs. 1,16,000 in excess of the estimate for the current year.

11. We understand that the armed police in Baluchistan are required not only for ordinary police duties but also in a semi-military capacity for the protection of bazars and railways against raids by turbulent elements in the population. It would appear, however, that much of the increase in numbers and cost is due to the unsettled conditions which prevailed during and after the war, and we do not consider that present financial conditions justify any increase on the provision made in the budget for 1922-23, this being more than double the expenditure in 1913-14 and Rs 2 lakhs in excess of the expenditure in 1920-21. With the fall in prices it should be possible to effect considerable savings in the expenditure on horse and clothing allowances and other supplies, and we recommend that the estimate for 1923-24 should not exceed the amount of Rs. 12,16,000 provided in the current year's budget.

DELHI.

	Rs.
1913-14, Actual Expenditure	3,92,000
1921-22, Revised Estimate	7,81,000
1922-23, Budget Estimate	7,92,000

12. The total number of permanent police is stated to be 1,426 and, in addition, there existed on April 1st, 1922, a temporary force of 202 men, representing a reserve created during a period of acute political disturbances. This temporary force has now been reduced to 92, though we understand that proposals have been made for a permanent addition of 125 men to the force. The population of the Delhi Province is 488,000, of whom 304,000 live in the city. Allowing an average of one policeman per thousand for the rural area, the proportion for the city area is one policeman for 244 persons which is high compared with the proportion in cities such as Bombay and Madras where, we understand, the proportions are one policeman to 267 and 318 respectively. We recognise that conditions in Delhi are special, but we consider that some reduction should be possible in this expenditure and that, when temporary additional police are required, they should be obtained from the Punjab. We recommend that the estimate for 1923-24 be reduced to Rs. 7,00,000, a saving of Rs. 92,000.

COORG.

	Rs.
1913-14, Actual Expenditure	62,000
1921-22, Revised Estimate	1,12,000
1922-23, Budget Estimate	1,21,000

13. The strength of the force has increased from 253 in 1913-14 to 273 provided for in the budget of 1922-23. We are informed that as a result of the enquiry made by the officer appointed to investigate the expenditure in Coorg, reductions of about Rs. 16,000 are proposed in the police estimates, that further reductions of about Rs. 3,500 are under consideration, the strength of the force being thus reduced to 225 men, and that it may be possible to secure further savings of about Rs. 2,500, on the pay of an Assistant Superintendent. We recommend that the budget for 1923-24 be fixed at Rs. 1,00,000, a saving of Rs. 21,000.

AJMER-MERWARA.

	Rs.
1913-14, Actual Expenditure	2,08,000
1921-22, Revised Estimate	3,82,000
1922-23, Budget Estimate	3,28,000

14. The estimates for 1922-23 allow for a deduction of Rs. 50,000 made provisionally under this head to meet the cut made by the Assembly in the total demand for this province. Savings in contingent and other expenditure to the extent of Rs. 21,000 have been effected in the current year. The strength of the force is one Superintendent, a Deputy Superintendent and 941 other ranks which works out to an average of one policeman per 526 of the population of the province (495,000). *Primâ facie* this is a high proportion compared with the Punjab but it has been represented that the circumstances of Ajmer are special owing to the isolation of the province and the high incidence of crime. We consider, however, that with the fall in prices some reduction should be possible in the cost of the police under such items as allowances, clothing, etc., and we recommend that the provision for 1923-24 should not exceed the curtailed estimate of Rs. 3,28,000 for 1922-23

We observe that in the Rajputana budget provision is made for an Inspector General (costing with a Personal Assistant Rs. 36,000) who, we are informed, is the administrative and controlling officer for the Ajmer-Merwara police and also controls the Rajputana-Malwa Railway police numbering some 550 men under a Superintendent. It should, in our opinion, be possible to amalgamate the three appointments of the Inspector General, the Superintendent, Ajmer, and the Superintendent, Railway Police, but we take the probable saving into account in dealing with the Rajputana Police.

RAJPUTANA.

	Rs.
1913-14, Actual Expenditure	1,16,000
1921-22, Revised Estimate	3,48,000
1922-23, Budget Estimate	3,19,000

15. The estimates for 1922-23 represent the original demand of Rs. 3,85,000 less the deduction of Rs. 66,000 made by the Assembly in the total demand for this administration, which deduction was provisionally taken under this head. We understand, however, that economies of only Rs. 18,000 have been effected or proposed. We are informed that a contribution of Rs. 15,000 is received from the Durbars towards the cost of criminal investigations carried on by the Rajputana Agency Police, but that its remission has been suggested on the ground that the Durbars no longer require assistance in police investigation. We consider that, in this case, steps should be taken to reduce the expenditure on the Agency police; and that, in the alternative, if assistance continues to be furnished to the Durbars, the amount of the contribution which was fixed in 1911 should be raised in view of the increase in the cost of the police since that date.

16. The greater part of the expenditure is on account of the police on the Rajputana-Malwa Railway, the gross expenditure on which is Rs. 2,89,400. This estimate provides for a Superintendent and 550 police. The Railway, we are informed, makes an annual contribution of Rs. 1,52,000 under an arrangement arrived at in 1918 under which Government meet the entire cost of "crime and order" police while the Railway pay the cost of the "watch and ward" police and pay to Government a lump sum contribution which represents the difference between the cost of watch and ward police and the sum which the Railway used to pay to Government. Apparently the effect of this arrangement is that the Railway do not bear a share of the increasing cost of the police, and we consider that the arrangement should be revised in order to secure from the Railway administration a proper charge for the cost of services rendered.

As we have observed in our remarks upon the Ajmer police, we see no justification for the maintenance of three administrative officers in this area

for a police force which numbers less than 1,550 men, including the District, Agency and Railway police. We consider that the appointment of Inspector General and his separate establishment could be abolished without serious inconvenience, saving at least Rs. 50,000, and that further economies should be effected in supplies and contingencies. Allowing for the savings already offered by the administration we recommend that the provision for 1923-24 should be limited to Rs. 3,00,000, which was the actual expenditure of 1920-21. This represents a reduction of Rs. 85,000 in the original demand for the current year and of Rs. 19,000 on the budget allotment made after deduction of the cut of Rs. 66,000 effected by the Assembly.

CENTRAL INDIA.

	Rs.
1913-14, Actual Expenditure	1,46,000
1921-22, Revised Estimate	2,22,000
1922-23, Budget Estimate	1,56,000

17. The original net estimate for 1922-23 was Rs. 1,95,370 (after deduction of Rs. 32,700 for Moghia contributions from the Durbars). From this net estimate Rs. 39,000 were provisionally deducted to meet part of the cut made by the Assembly in the total budget of this administration. It was not, however, found possible to give effect to the cut made, and the receipts from contributions from the Durbars are now expected to amount to only Rs. 13,000 with the result that the actual expenditure during 1922-23 is estimated at Rs. 2,44,000. The proportion of police to population is five per 1,000 which is very high even allowing for the fact that most of the population is urban. We understand that a part of the staff is maintained for work performed for the States, a contribution being made by the States towards the expenditure involved. We are informed that the abolition of this contribution is under consideration, but we consider that any services should be fully paid for or the additional police abolished. Some additions to the force are said to have been proposed on account of the reduction of the Malwa Bhil Corps referred to in our report on the Political estimates, but we think that the police force in Central India should be capable of taking over the guard duties performed by the Bhil Corps without substantial addition to their numbers. Making some allowance for this we recommend that police expenditure in Central India should be limited to Rs. 2,00,000.

EXPENDITURE IN OTHER MINOR ADMINISTRATIONS AND IN ENGLAND.

18. We make no recommendations as regards other areas. The expenditure in England is on account of leave allowances.

CONCLUSION.

Having reviewed the expenditure on Police, we recommend that the budget estimates for 1923-24 be limited to Rs. 80,83,000. This represents a reduction of Rs. 1,07,000 on the estimates for 1922-23, after deduction of the cuts made by the Assembly, but the real saving compared with the expenditure now estimated for 1922-23 is over Rs. 9 lakhs.

PORTS AND PILOTAGE

The estimates for expenditure and receipts in 1922-23 compare with the revised estimates for 1921-22 and the actual expenditure and receipts in 1913-14 as follows :—

	Expenditure.	Receipts.
	Rs.	Rs.
1913-14, Actuals	16,72,000	22,04,000
1921-22, Revised Estimates	21,89,000	22,87,000
1922-23, Budget Estimates	26,32,000	24,21,000

2. The expenditure is incurred in the following provinces, etc :—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
Bombay	1,60,000	1,04,000	1,30,000
Bengal	13,43,000	17,43,000	18,66,000
Burma	1,66,000	3,63,000	3,78,000
Bihar and Orissa		7,000	7,000
Deduct lump reduction made by the Assembly			- 1,20,000
TOTAL	16,69,000	22,17,000	22,61,000
Expenditure in England at Rs 15 = £1	3,000	2,72,000	3,71,000
TOTAL	16,72,000	24,89,000	26,32,000

3. "Ports and Pilotage" includes expenditure on various services connected with shipping which may be grouped under the following heads. —

Bengal pilot service.

Light houses and light ships.

Port establishments.

Survey of vessels

Shipping offices.

There has in the past been little uniformity as to the authority by which these services are administered or as to the basis on which charges are levied on shipping for the duties performed. We are informed, however, that the main questions involved are under special enquiry. We have consequently considered it unnecessary to examine them in great detail.

4. Bengal pilot service—

	Expenditure	Receipts.
	Rs.	Rs.
1913-14, Actuals	10,54,000	14,64,000
1921-22, Revised Estimate	15,17,000	12,20,000
1922-23, Budget Estimate	16,18,000	14,00,000

We understand that this service was formerly self-supporting, but it appears from the foregoing figures that during the last two years a loss has occurred on its working even without taking into account charges for interest on capital, depreciation, cost of leave and pensions and other miscellaneous expenditure. We are informed, that the subject is at present under examination by a Committee with the object of reducing the cost of this service and of investigating the advisability of its transfer to the Port Commissioners.

5. *Light houses and light ships.*—This expenditure relates to certain lights on the Burma and Sind coasts and at Aden. We understand that there is a great diversity of practice with regard to the incidence of charges for the maintenance of lights, but in this matter also the Government of India have instituted a comprehensive enquiry.

6. *Port Officers.*—The estimates include provision for port-officers in Calcutta and Rangoon, and we understand that the Government of India are enquiring into the question whether these offices should not be placed under the Port Commissioners at these ports.

7. *Expenditure in England.*—Apart from a small amount for the purchase of stores, this expenditure is on account of leave allowances.

8. *General.*—The budget estimate for 1922-23 showed an excess of expenditure over receipts of Rs. 2,11,000. We consider that steps should be taken to

make the various services under this head entirely self-supporting, after taking into account pensionary charges, depreciation, interest on capital, etc., and that expenditure in 1923-24 should be limited to the amount of receipts estimated for 1922-23, saving Rs. 2,11,000

CONCLUSIONS

Having reviewed the expenditure on Ports and Pilotage, we recommend that—

- (1) steps be taken at an early date to make the various services included under this head self-supporting; and
- (2) the expenditure under this head in 1923-24 be limited to Rs. 24,21,000, saving Rs. 2,11,000.

ECCLESIASTICAL EXPENDITURE.

The estimate for 1922-23 compares with the revised estimate for 1921-22 and the actual expenditure for 1913-14 as follows:—

	Rs.
1913-14, Actual Expenditure	19,15,000
1921-22, Revised Estimate	31,11,000
1922-23, Budget Estimate	33,83,000

The increased expenditure since 1913-14 is almost entirely due to the revision of pay and allowances and to the inclusion of leave allowances not previously shown under this heading; there has been no increase in the number of chaplains employed. The major portion of the expenditure is for spiritual ministrations to the British Troops in India but in addition the Bishops of Calcutta, Madras and Bombay and their Archdeacons are maintained under statute.

So far as we can ascertain there is no definite basis for the distribution of ecclesiastical expenditure between the civil and military estimates, but we are informed that a proposal is now under consideration for the formation of an Army Chaplains' Department, the cost of which would be borne entirely in the Army estimates. It should be laid down, however, that, if this proposal is proceeded with, no additional expenditure should be involved. We also understand that the Metropolitan and many of the leading Bishops in India are in favour of having an autonomous Church in India like the Churches in the Dominions and we recommend that early decisions be arrived at on these important questions.

The necessity for curtailing expenditure during the present period of financial stringency has been recognised and five chaplaincies have been abolished. We think, however, that further economy should be effected and, as we have ascertained that 16 chaplains are due to retire next year, we recommend that these vacancies should not be filled until the future policy in regard to ecclesiastical matters is definitely settled. We think that some minor economies should also be possible and that the provision for 1923-24 should be limited to Rs. 31,83,000, a reduction of Rs. 2,00,000.

SUPPLEMENTARY NOTE BY THE HON'BLE MR. PURSHOTAMDAS THAKURDAS ON ECCLESIASTICAL EXPENDITURE.

1. The justification for the continuously growing expenditure by the

The policy underlying ecclesiastical expenditure has frequently been the subject of discussion during the past fifty years. State on ecclesiastical affairs has frequently been the subject of discussion during the past fifty years, both from the point of view of finance and other points of view, such as the disparity of treatment, which, it is contended, gives the lion's share of State assistance to one Church or the alleged inequity of taxing the Muslim and Hindu communities to support Christian religions, or the vexed question of the scope of such State assistance.

2. In 1846 the Court of Directors of the East India Company defined their obligations as then recognised, to be
Short resume of the policy—1846 “our duty to provide the means of spiritual instruction according to the principles of our National Church for the Christian servants of the State and their families”

In 1876 Lord Northbrook's Government limited the obligations of Government to “providing within reasonable limits, the ministrations of religion for British-born European servants of the Crown, and specially for soldiers and their families.”
1876

In 1883 the question was again discussed by Lord Ripon and his Council. Lord Ripon and his colleagues who agreed with him confined the area of State obligation to European British-born soldiers with their families, and the same class of State Railway servants, in each case within reasonable limits. In laying down their policy, they held that the obligation to provide for Christian servants born in India would admit the obligation to provide equally for the religious wants of non-Christian servants of the Crown, and this could not be done. Regarding the spiritual needs of civil servants they maintained that they would be too few and too scattered outside military cantonments to justify any provision, and moreover they were able to pay for the services they required.

The majority of Lord Ripon's Council, however, did not agree with him and extended the range of State obligation beyond the primary duty of providing for British soldiers within reasonable limits, to all Christian servants of Government and their families wherever born. But they proposed to cease appointing chaplains to any non-military stations except the seats of Government and cathedral towns, and elsewhere only to give grants-in-aid to sufficient congregations of all Christian denominations.

The Finance Committee of 1886 based their recommendations for certain economies on the general principles of agreement expressed in the Despatch of 1883 that the employment of chaplains should be confined to military stations where there were European troops, to cathedral towns, and the headquarters of Government, and that some form of grant-in-aid should be given to clergy at other stations than these.
1886

3. These principles have been reiterated by the Government of India in dealing with proposals for increase in ecclesiastical establishments and may be said to be their present policy in ecclesiastical matters as regards new expenditure.
The present policy.

There is at present before Government a proposal for the disestablishment of the Church of England, and for the introduction in India of an autonomous church like the churches in the Dominions. This is said to be essentially a religious rather than a financial question. The Draft Indian Church Measure which is before Government at present, will, after going through certain stages of approval by various parties concerned, require examination by the Government of India and the Secretary of State, and finally will have to be introduced into the Houses of Parliament by the National Assembly of the Church of England under the Church of England Assembly (Powers) Act. This measure in its present form contemplates some State assistance.

4. In view of the grave financial situation of the Government of India it is necessary to consider, at this stage, whether it is incumbent upon Government, as a matter of vital importance, to continue to incur growing expenditure on the present scale. It would appear to be necessary that the policy, which has dictated expenditure on ecclesiastical matters in the past, should be re-examined. I consider it my duty therefore to make a few observations on this question although I realise that it is a delicate question for a non-Christian to handle.
Grave financial situation necessitates reconsideration of policy.

5. I understand that in hardly any Dominion or Crown Colony is a system such as the Indian system in force. The conditions prevailing at present in India are substantially different from those prevailing in India in 1846 or 1883. In 1846 practically all Europeans in India
Altered conditions and the example of the Dominions and of non-Christian communities in India warrant change of policy.

came as servants of the East India Company. Since then and even since 1883 the number of European Christians in India has materially increased on the side of non-official population. I do not believe that they are not capable of paying for their religious ministrations. There is no reason why European Christians, who, I understand, pay to a large extent, for their own religious ministrations in all European countries, and, in the Dominions and Crown Colonies of the British Empire, should feel hurt by being asked to spend for their own religious ministrations in India, as indeed the rest of the population of India, Hindus, Mohammedans, Parsees, Jews, etc., have been doing.

6. The foregoing considerations lead to the conclusion that no State aid is in principle necessary in India for the religious ministrations of any community, although the policy and custom followed till now may warrant the exception of British troops and of European Christian servants of the Crown.

7. On this principle the existing expenditure of the Government of India under the head "Ecclesiastical" is capable of further substantial reduction than that recommended by my colleagues. The number of chaplains should be steadily reduced by not filling up vacancies as they occur, till the minimum necessary for purely military stations, at which British troops are placed in sufficiently large numbers, is attained.

At present Government maintain 166 chaplains of the Church of England (including one staff chaplain at Army Headquarters). The Committee are informed that the Government of India have ordered a reduction of five already. My colleagues have recommended a reduction of further sixteen, since at present twenty-one chaplains are maintained at places which are neither military stations nor headquarters of Government, nor cathedral towns. But if the policy recommended herein is adopted there would be no necessity to maintain chaplains at headquarters of Government or at cathedral towns, and their reduction could be carried on till Government chaplains remain only at military stations. At places where there is a mixed congregation of (1) European officials and/or British troops in numbers smaller than the minimum required for one chaplain, and (2) non-official Europeans and Anglo-Indians, a grant-in-aid for the clergy might be substituted for Government chaplains, the amount of the grant depending upon the proportion of the two. Such grants-in-aid are, I understand, already being given to clergymen of the Additional Clergy Society at several places and I would recommend an extension of this system.

The approximate further saving that is possible from the Church of England Estimates may be estimated. The Committee are informed that about 100 chaplains are engaged in ministering to British troops, either exclusively or in addition to the civil duties of the stations, to which they are posted. It may therefore be assumed that a strength of approximately 100 would suffice for the purely military stations, including a leave reserve. As my colleagues have recommended a reduction to 145 chaplains, this further reduction would save the cost of 45 chaplains and their establishment to the Indian revenues. The average cost of a chaplain—pay, allowances and contingencies—is Rs. 13,653 excluding pensionary charges, and Rs. 20,853 including same. If a grant-in-aid of Rs. 300* per month is assumed to take the place of a chaplain at each of the 45 places, the annual saving recommended would amount to Rs. 10,053 per chaplain rising ultimately to Rs. 17,253 or to Rs. 4,52,385 rising ultimately to Rs. 7,76,385.

The Government of India at present maintain 18 chaplains of the Church of Scotland, six of whom are stationed at Madras, Bombay and Calcutta under section 122 of the Government of India Act, 7 are attached to Scotch regiments, one is stationed at Karachi and four are on leave. On the general principle of this minute, this leaves room for reduction by seven chaplains at

* NOTE.—The allowance at present paid to Roman Catholic and Wesleyan chaplains varies from Rs. 250 to Rs. 375 plus an additional allowance of Rs. 30. The assumption of grant-in-aid of Rs. 300 is based on this. It may be added that the assumption of a total grant-in-aid of Rs. 45 x 300 per month errs on the side of liberality as it implies that a grant-in-aid would be required at each of the 45 places.

Bombay, Madras, Calcutta and Karachi, *plus*, say, one on leave. As Church of Scotland chaplains are paid like the Church of England chaplains, the saving effected by a reduction of eight would be Rs. 10,033 × 8 = Rs. 80,424, rising ultimately to Rs. 17,253 × 8 = Rs. 1,38,024.

The maintenance of the Church of Scotland chaplains of Bombay, Madras and Calcutta is necessitated by the Government of India Act. The reasons necessitating this provision in the Government of India Act do not hold now, but a change in this requires Parliamentary sanction.

The same considerations apply to the three statutory bishops of Calcutta, Madras and Bombay who are required to be maintained by the Government of India Act. The expenditure on these bishops and their establishments excluding the chaplains and archdeacons* under them, is at present, approximately Rs. 1,50,000. The pension charges incurred on statutory bishops who retire amount to roughly Rs. 45,000. Hence Rs. 1,95,000 may be taken as the possible ultimate saving after the necessary Parliamentary sanction is obtained. I understand that the statutory bishops are remunerated at higher rates than non-statutory bishops. The reasons for this may well be examined and if possible the remuneration be reduced, pending the sanction of Parliament for the abolition of these bishoprics.

The total ultimate saving recommended in this minute thus amounts to:—

	Rs.
	7,76,385 Church of England estimates.
	1,38,024 Church of Scotland estimates.
Total saving.	- 1,95,000 Statutory Bishoprics.
	Total 11,09,409

If the principle underlying this Note be accepted the total saving should in round numbers come to Rs. 11,09,000 in addition to the saving of Rs. 2,00,000 recommended by my colleagues.

8. I think it equally necessary to draw attention to the increasing expenditure on Indian religious teachers for Indian Units, in the Army Estimates. The amount spent under this head in 1913-14 was Rs. 34,000. The corresponding budget estimate for 1922-23 shows an expenditure of Rs. 2,23,000. Religious teachers, *i.e.*, *Grauthis*, Pundits and Moulvies, were allowed on a certain scale to Indian fighting units before the war. The arrangement still continues, but the status and emoluments of these men have now been considerably improved with reference to a recommendation of the Esher Committee. I do not see either the necessity or the advisability of this increase in expenditure, or indeed, of any expenditure, under this head for Indian soldiers in India on the peace establishment. One can understand the reason for maintaining chaplains for British soldiers in India, or for maintaining religious teachers for Indian soldiers on active service at the frontiers or outside India; but when the Indian soldier is stationed in his own country, with mosques or temples available within reasonable distance of his camp, I feel that any expenditure from the Government Treasury on religious teaching for him is uncalled for. The parallel of regimental chaplains attached to British troops in England, or of chaplains for British troops in India, need not be followed in regard to Indian troops in peace time, since neither the tradition and practice till now, nor the finances of the Government of India, warrant such an innovation at this stage.

PURSHOTAMDAS THAKURDAS.

DELHI; }
The 1st February 1923. }

* NOTE.—Among the 186 chaplains of the Church of England referred to in sub-paragraph 2 of this paragraph, are included the three statutory archdeacons of Calcutta, Madras and Bombay, the four diocesan bishops of Lucknow, Lahore, Rangoon and Nagpur, and any chaplains under the statutory bishops. The saving possible by the reduction of these is included in the estimated saving of Rs. 7,76,385 referred to above. The abolition of the statutory archdeacons would require Parliamentary sanction.

SCIENTIFIC DEPARTMENTS.

The total estimates for 1922-23, including a supplementary grant of Rs. 29,000 under Archæology, compare with the revised estimates for 1921-22, and the actual expenditure for 1913-14 as follows :—

	Rs.
1913-14, Actual Expenditure	44,79,000
1921-22, Revised Estimate	1,16,83,000
1922-23, Budget Estimate	1,12,60,000

2. This expenditure is sub-divided under the main heads shown below :—

Head.	1913-14.	1921-22	1922-23
	Rs	Rs.	Rs
SURVEY OF INDIA	25,94,086	37,88,000	35,09,000
METEOROLOGY	4,27,266	6,16,000	7,14,000
GEOLOGICAL SURVEY	3,06,073	4,37,000	6,46,000
BOTANICAL SURVEY	45,082	28,80,000	27,15,000
ZOOLOGICAL SURVEY	*1,28,711	1,56,000	1,77,000
ARCHÆOLOGY	3,57,850	15,10,000	16,29,000
MINES	98,812	1,69,000	2,27,000
OTHER SCIENTIFIC DEPARTMENTS	43,767	3,55,000	4,05,000
	40,01,147	99,20,000	1,00,22,000
EXPENDITURE IN ENGLAND (Rs. 15 = £1)	4,78,000	17,68,000	12,34,000
TOTAL	44,79,147	1,16,83,000	1,12,60,000

*Zoological section of the Calcutta museum.

This table shows that there has been a considerable increase in activity in all the Scientific Departments, and that the total expenditure involved has risen from Rs. 44,79,000 in 1913-14 to Rs. 1,12,60,000 required for 1922-23, an increase of Rs. 67,81,000.

We will now deal seriatim with the main heads under which the account is set out above :—

SURVEY OF INDIA.

	Rs.
1913-14, Actual Expenditure	25,94,000
1921-22, Revised Estimate	37,88,000
1922-23, Budget Estimate	35,09,000

3. Final figures are now available which shew a saving of Rs. 2,10,000 on the revised estimate of 1921-22.

The above figures represent net expenditure after deducting amounts recovered from other Government Departments and from Provincial Governments. The gross expenditure has increased from Rs. 35,30,000 in 1913-14 to Rs. 56,82,000 estimated for 1922-23 and the amount recovered from Rs. 9,86,000 to Rs. 21,73,000. The expenditure may be analysed as follows :—

	1913-14.	1922-23.
	Rs	Rs.
Controlling and Administrative Staff	1,31,047	1,44,570
Headquarters Offices :—		
Correspondence and Drawing Office	2,34,719	3,76,240
Lithographic and Photographic Offices	1,60,745	3,19,470
Engraving Office	61,088	77,500
Trigonometrical Office	1,70,160	3,64,560
Mathematical Instrument Office	1,73,081	4,46,820
Simla Drawing Office	80,378	1,00,500
Bengal Drawing Office . . . . .	. . . . .	19,530
Bihar and Orissa Drawing Office	37,714	12,830
Survey Parties	23,97,653	37,24,310
Miscellaneous	8,483	95,700
Total Expenditure	35,50,065	56,82,120
Less—		
Recovered from other Government Departments, etc.	9,85,982	21,73,120
Net Expenditure	25,94,086	35,09,000

The total establishment employed has increased from 7,453 in 1913-14 to 7,841 required for 1922-23, involving an additional expenditure of about Rs. 5½ lakhs.

4. We are informed that the main functions of the Survey Department are to provide Topographical Surveys and maps of the whole of India, to explore neighbouring countries where possible, to provide survey personnel for any military operations and to carry out any large surveys for the Military authorities, Local Governments or other Departments such as Forest, Geological, etc

The sanctioned cadre of Class I Administrative officers is 62, of whom 51 are Military Officers, three-fourths of whom are Royal Engineer and one-fourth Indian Army Officers. We discussed with the Surveyor General the necessity for retaining such a large proportion of highly paid military personnel in this service and ascertained that the estimated number of officers required for survey work in an Afghan war is 14. It was stated that the main argument for retaining military officers was that they would form an efficient Royal Engineer reserve in case of a great war. This argument, however, does not apply to Indian Army officers and, further, we are of the opinion that the cadre of military officers should be progressively reduced and that any vacancies in class I administrative posts should be filled by cheaper civilian agency recruited from the existing staff if possessing the necessary qualifications. This would effect a substantial ultimate economy and we consider that an immediate saving of at least Rs. 50,000 should be effected by this means and by a reduction in staff in 1923-24.

5. We understand that there is throughout the Indian Empire an enormous aggregate expenditure every year on survey operations of all kinds which are urgently needed for various purposes and which are not paid for from Imperial Revenues. If these surveys were carried out in such a manner that they could be incorporated as part of the department's topographical maps, without the same areas having to be surveyed over again at the cost of Imperial Revenues, considerable economy would be effected. We are of the opinion that close co-operation between the Survey Department, Local Governments and other bodies requiring survey work to be carried out is essential if maps of the whole of India are to be prepared and maintained moderately up to date at a reasonable cost.

We now deal with the main headings under which the expenditure has largely increased since 1913-14.

6. *Lithographic and Photographic Establishments—*

	Rs
1913-14, Actual Expenditure	1,60,745
1921-22, Actual Expenditure	2,84,092
1922-23, Budget Estimate	3,19,000

The large increase since 1913-14 is mainly due to increased rates of pay. Three additional map printing machines have been installed, making a total of 10 machines in use. The number of prints taken off increased from 2,286,845 in 1913-14 to 3,736,999 in 1920-21. The total staff employed has increased from 346 in 1913-14 to 338 at the present time and we are informed that reduction to pre-war numbers would be more than set off by reduced sales of maps.

We think however that a saving of about 20 per cent should be possible in the expenditure of Rs. 42,100 on supplies and services which is mainly for photographic chemicals, the price of which has fallen considerably.

7. *Trigonometrical Survey Office—*

	Rs
1913-14, Actual Expenditure	1,70,160
1921-22, Actual Expenditure	3,10,636
1922-23, Budget Estimate	3,64,560

The total staff employed in this office has increased from 166 in 1913-14, costing Rs. 1,35,000 to 278 in 1922-23, costing Rs. 2,90,000. We are informed that the additional staff was required to cope with increased work which necessitated the number of map printing machines being increased from 2 to 3. Additional pupil draftsmen were also engaged, but in view of the

necessity for retrenchment, the total staff employed has already been reduced by 40, saving Rs. 15,000

The provision for contingencies has increased from Rs. 18,290 in 1913-14 to Rs. 64,900 for 1922-23, mainly due to the purchase of paper. A considerable reduction should be possible in 1923-24 and we think the provision should be limited to Rs. 40,000, a reduction of Rs. 24,900.

8. *Mathematical Instrument Office—*

	Rs.
1913-14, Actual Expenditure	1,73,081
1921-22, Actual Expenditure	3,87,880
1922-23, Budget Estimate	4,46,820

The Mathematical Instrument Office is a depôt for the supply, repair and adjustment of mathematical and other instruments used in various government departments and offices. It also acts as a storage depôt.

The accounts of this office were recently examined by Messrs. Price Waferhouse and Company, who submitted their report in April 1922. They recommended that the present system of accounts should be revised on a commercial basis and in their report they stated that, in their opinion, the Mathematical Instrument Office is not of a size to render necessary the retention of three higher officials in the shape of an Officer-in-charge, a Works Manager and an Accountant. No action has yet been taken on this report and we consider that the matter should be dealt with without further delay.

We are informed that instruments are issued at the book value *plus* 25 per cent. to *quasi*-commercial departments of Government and that repairs are charged for at cost price *plus* 10 per cent. For other Government Departments and offices no percentage additions are made. We consider that the charges should be fixed on a uniform basis for all departments and cover the full cost of all overhead expenses.

We have ascertained that it is the practice to maintain a stock of instruments adequate for meeting any ordinary local emergency without delay and that indents are based upon the average issues of each class of instrument. The total receipts, issues and stock on hand for 1921-22 were as follows :—

	Value. Rs.
Stock on hand 31st March 1921	9,51,480
Total receipts	13,30,189
Total issues	11,08,821
Stock on hand 31st March 1922	11,72,848

During the first 8 months of the current year the value of the receipts was Rs. 5,72,695 and of the issues Rs. 6,90,119 and it would appear probable that at the end of the current year there will still be one year's supply of instruments, etc., on hand. We are of the opinion that these stocks should be reduced to not more than 6 to 9 months' supply of imported stores and 3 months' supply of stores manufactured in India. Further we think that Departments should be required to forward half-yearly indents to the Mathematical Instrument Office and that orders for imported stores should be based on the actual demands of the Departments instead of on their anticipated requirements.

9. *Survey Parties—*

	Rs.
1913-14, Actual Expenditure	23,97,653
1921-22, Actual Expenditure	34,08,933
1922-23, Budget Estimate	37,24,310

There are 12 Survey parties all of which are employed on topographical work but it is proposed that one of these should be diverted to a large scale survey of the Jherriah and Raniganj coal fields though the cost of the party will still fall on central revenues.

We are of the opinion that in the present financial circumstances the country cannot afford to maintain 12 survey parties and we consider that it

should be possible to come to some satisfactory arrangement in the manner already outlined under which where survey work is required by Local Governments or others it should be undertaken by certain of the survey parties on special terms to be agreed, provided that the results can be satisfactorily incorporated in the topographical maps.

10. Unless this can be done, we think that the number of survey parties should be so limited that, after taking into account the economies of Rs 98,000 which we have indicated in other branches, the total net estimate for the Survey of India on its present basis will be reduced to Rs. 26,00,000 for 1923-24 as compared with Rs. 35,09,000 for 1922-23, a saving of Rs. 9,09,000.

11. It has been decided that certain survey expenditure is at present included under other heads, namely, Rs. 1,48,000 under Land Revenue and Rs 1,30,000 under Forests should be transferred to the Survey of India. We understand that the charges shown under Land Revenue represent a book transfer of a portion of the cost of the Surveyor General's office, and that those shown under Forests are largely on account of work done for Local Governments. We consider that all work of the latter nature could best be dealt with in the manner we have just suggested, and we assume that at least one-half of the expenditure transferred from the Forest head should be recoverable. In dealing with the Land Revenue and Forest heads we take credit for the transfer of these items of expenditure to the Survey of India, and there will therefore be an additional charge to be borne by this head. Allowing for this, we suggest that the total net budget of the Department should be fixed for 1923-24 at Rs. 28 lakhs—a total saving of Rs. 9,09,000 of which Rs. 7,09,000 accrues under this head.

12. We consider that the question of retaining the headquarters of the Survey Department on its present valuable site in Calcutta should be again examined. The land and buildings now occupied would realize a very considerable sum probably much in excess of the cost of a new site and buildings elsewhere. This matter was considered by a Committee in 1916 and they made certain recommendations in this direction which, however, so far have not been acted upon.

METEOROLOGY.

	Expenditure. * Receipts.	
	Rs.	Rs.
1913-14, Actual Expenditure	4,27,266	<i>Nil.</i>
1921-22, Revised Estimate	6,16,000	20,500
1922-23, Budget Estimate	7,14,000	18,300

13. Since 1913-14 the expenditure has increased by Rs. 2,87,000 of which Rs. 78,000 is due to revision of pay, Rs. 38,000 to increased establishments and the remainder to contingencies, including the cost of special investigations.

The total staff employed on the 1st April 1922 compared with 1913-14 was as follows :—

	1914.	1922.
Officers	13	14
Clerks	130	153
Menials	89	98

The Department has suggested the abolition of the post of one officer and other economies which will effect an annual saving of Rs. 60,000. In addition, it is proposed to raise the charge for the "Daily Weather Reports" and curtail the free issue which it is anticipated will increase the revenue by Rs. 4,000 per annum.

The main work of the Department consists of obtaining the particulars necessary for the compilation of the daily weather report and for the issue of storm and flood warnings. Information is obtained from 175 observatories daily and also from ships in the Arabian Sea. Storm warnings are issued to 72 Ports and warnings of heavy winds and floods are issued to 232 officers mainly connected with Canals, Railways, and Irrigation works which are

liable to be seriously damaged. We have considered the question of reducing the number of reporting stations but no appreciable economy could be effected without a substantial reduction in the number of inland reporting stations. In Bengal, where the stations are most numerous, there is only one reporting station to every 6,000 square miles, and we were informed that any large reduction would make it impossible for the Department to estimate the position of the rainbearing storms. In these circumstances we are unable to recommend any reduction in the number of stations.

The Agra Aerological Observatory, with its 8 sub-stations costing Rs. 73,650 for 1922-23, is maintained primarily for Upper Air Work observations. India is pledged as a signatory to the Air Convention to obtain a knowledge of the air conditions over India and, although the establishment has only been sanctioned temporarily until March 1923, we consider that information in regard to Upper Air conditions is essential for aviation, and general meteorological purposes and we do not therefore recommend any reduction.

We are of the opinion that the "Monthly Weather Review" should be abolished, and that weather reports should be discontinued in Madras and elsewhere during periods when no important rainfall occurs. These economies would, we understand, effect a further saving of roughly Rs. 12,000 per annum and in addition we think that reductions should be possible in the staff of temporary clerks and menials and also in the expenditure on supplies, services and contingencies. We recommend therefore that the gross estimate for 1923-24 should be reduced to Rs. 6,30,000, a saving of Rs. 84,000.

GEOLOGICAL SURVEY.

	Rs.
1913-14, Actual Expenditure	3,06,000
1921-22, Revised Estimate	4,37,000
1922-23, Budget Estimate	6,46,000

14. Of the total increase of Rs. 3,40,000 in the expenditure for 1922-23 compared with 1913-14 Rs. 1,46,700 is due to revision of pay, Rs. 1,44,300 to increased establishment and the remaining Rs. 49,000 to other causes.

The sanctioned establishment for 1922-23 compared with 1913-14 is as follows:—

	1913-14	1922-23.
Officers	24	37
Subordinate Draftsman, Clerks and Servants	77	77
Total	101	114

The number of Officers actually employed at the present time is only 31 as considerable difficulty has been experienced in obtaining suitable candidates for existing vacancies and no Indian recruits have been forthcoming.

The primary function of the Geological Survey is to investigate and estimate the mineral resources of India which can only be done by a systematic survey of the whole country. During recent years considerable developments have taken place to meet war requirements, wolfram was discovered in large quantities in Burma, chromite in Baluchistan and in Singhbhum and manganese ore in the Central Provinces. The Department also played an important part in increasing the development of the Burma oil fields, the copper smelting industry in Singhbhum, the Bokaro coal fields, etc.

We consider that in view of the importance of geological survey to the development of the mineral resources of the country and the large revenue from royalties which accrues to the country generally, it would be false economy materially to curtail the activities of the Department. We think, however, that the filling of existing vacancies might be postponed until Indian recruits are available, which we understand will effect a saving of Rs. 67,000 in 1923-24; also we are of opinion that, as Provincial Governments are responsible for the development of their mineral resources, the Department should work in close co-operation with them on the lines of the arrangements made with Burma and contemplated with Madras,

BOTANICAL SURVEY.

	Rs.
1913-14, Actual Expenditure	45,000
1921-22, Revised Estimate	28,89,000
1922-23, Budget Estimate	27,15,000

15. The large increase in expenditure compared with 1913-14 is almost entirely due to the purchase and preparation of reserve stocks of quinine, and the development of the recently established cinchona plantation in Burma. The Department has suggested reductions in expenditure for 1923-24 to the extent of Rs. 15,000 in administrative charges and miscellaneous expenses and of Rs. 4,08,000 in the purchase of quinine.

Quinine is purchased by the Secretary of State under contracts with the Java Combine and Messrs Howards and Sons, London. The Java Combine contract, which expires next year, provides for the supply of 20,000 kilos (44,000 lbs) of quinine per annum, the price payable c.i.f. Calcutta at the current rate of rupee exchange, being the official London quotation of the Kina Bureau Amsterdam less 10 per cent. The contract with Messrs. Howards and Sons, provides that the Secretary of State shall purchase, if available, bark sufficient to yield 20,000 kilos (44,000 lbs) of quinine per annum until July 1928 and be entitled to purchase additional supplies if available to the extent of 17,500 kilos (38,500 lbs.).

16. We are informed that in 1912 the Government of India considered it desirable to form a reserve of quinine representing at least five times the annual demand upon Government and that the matter has not been reconsidered since that date. The reserve stock to be maintained has been fixed at 400,000 lbs on an assumed demand on Government sources of 80,000 lbs. per annum which was based upon the anticipation of a large increase in consumption. The actual demand has been small during recent years owing, it is stated, to the absence of adequate propaganda, prejudice against the use of quinine, lack of facilities for purchase by the public and high prices.

The estimated average annual consumption of quinine in India is 150,000 to 160,000 lbs. per annum of which roughly one-half is said to be supplied from Government sources and the other half by private importation. Quinine is produced in Madras and Bengal under the auspices of the Local Governments. In Madras the production amounts to about 30,000 lbs. per annum but the plantations are rapidly becoming exhausted and supplies from this source will probably cease in about five years' time. The Bengal plantations are stated to be capable of producing about 35,000 lbs. per annum and this amount will probably be gradually increased to 50,000 lbs. during the same period. The total amount of quinine purchased or produced during the past three years, the quantities issued during each year and the stocks on hand at the end of the year together with estimates for the current year were as follows :—

Year	IMPERIAL STOCKS			MADRAS			BENGAL		
	Purchased.	Issued	Stock on hand.	Purchased or produced.	Issued	Stock on hand	Produced	Issued.	Stock on hand.
1919-20	lbs 127,639	lbs 13,951	lbs. 118,689	lbs 16,064	lbs 20,108	lbs 19,837	lbs 18,198	lbs 62,434	lbs 50,366
1920-21	655	15,800	98,544	24,578	23,711	15,702	23,984	34,509	30,331
1921-22	74,456	nil	173,300	31,400	23,878	23,524	22,713	34,006	23,538
1922-23	68,000	11,000	230,000	30,000	30,000	23,234	13,500	24,003	13,005

The total issues to the public from Government sources during the year 1921-22 and estimated for 1922-23 amounted to 57,884 lbs. and 65,033 lbs. respectively. The total Government stocks on hand on the 31st March 1921 amounted to 154,077 lbs. which, it is estimated, will be increased to 271,000 lbs. by the 31st March 1923, representing about four years' supply on the basis of the average issues during the past 3 years. We are informed

that, if a big epidemic of malaria were to break out, say, in the Punjab, the consumption from Government supplies might easily be increased by 150,000 lbs but even in this eventuality the present stocks appear ample to meet all requirements. We understand that, under the contract with Messrs. Howards, 46,000 lbs. of quinine in bark are likely to be supplied in 1923-24 at a cost of Rs. 6,90,000 and that under the Java contract 39,600 lbs. will be supplied at a cost of Rs. 8,85,000. We are of the opinion that the amount to be purchased under the contract with Messrs. Howards and Sons can safely be limited to the minimum of 44,000 lbs. for 1923-24 which will effect a further reduction of Rs. 30,000. The total provision for 1923-24 will thus be Rs. 15,45,000, a reduction of Rs. 8 lakhs on the provision for the purchase of quinine in the current year's estimate.

17. With a view to ensuring sufficient supplies of quinine to meet the growing requirements of India, a new plantation has been started in Mergui. The original intention of Government when they decided to start a plantation in Burma, was to supply not merely India but the whole Empire with quinine. This proposal has now been modified and the present programme provides for planting 500 acres annually which will, on a conservative estimate, produce 90,000 lbs. of quinine per annum commencing with the year 1928. In view of the present financial conditions we consider that the acreage to be planted during the next four years should be restricted to 250 acres per annum, saving Rs. 50,000.

18. The savings indicated amount to Rs. 8,65,000 and, allowing for some reduction in freight charges, we are of the opinion that the budget estimate for 1923-24 should be limited to Rs. 18,35,000, a total reduction of Rs. 8,80,000 on the estimates for 1922-23.

ZOOLOGICAL SURVEY.

	Rs.
1913-14, Actual Expenditure	1,28,711*
1921-22, Revised Estimate	1,56,000
1922-23, Budget Estimate	1,77,000

* Zoological section of the Calcutta Museum.

19. The estimate for 1922-23 includes a non-recurring grant of Rs. 22,500 to the Bombay National History Society for the completion of the Mammal Survey of India.

The Zoological Survey was instituted in July 1916, its main functions being to act as guardian of the zoological collection of the Indian Empire, to assist in the identification of zoological specimens and to obtain the fullest possible information about the systematic and geographical zoology of the Indian Empire.

The total staff employed on the 1st April 1922 was 66 compared with 58 on the 1st April 1921, the increase being due to the employment of one additional technical subordinate and 7 additional menials.

We are of the opinion that in the present financial circumstances the establishment should be reduced to the 1921-22 level, that the expenditure on supplies and services and contingencies for which Rs. 46,700 was provided for 1922-23, should be curtailed and that the provision for 1923-24 should be limited to Rs. 1,30,000.

ARCHÆOLOGICAL SURVEY.

20. The estimate for 1922-23, including a supplementary grant of Rs. 29,000, compares with the revised estimate for 1921-22 and the actual expenditure for 1913-14 as follows :—

	Rs.
1913-14, Actual Expenditure	3,57,850
1921-22, Revised Estimate	15,10,000
1922-23, Budget Estimate	16,29,000

The large increase in expenditure since 1913-14 is partly due to the reforms under which all expenditure on Archæology has become a charge on central revenues, whereas formerly the greater part of the cost of conservation

of ancient monuments was paid for from provincial revenues. The total expenditure in 1913-14 including the amount expended from provincial revenues was Rs. 7,69,578.

We are informed that the provision for 1922-23 has been allocated approximately as follows:—

	Rs.	Rs.
Repair and maintenance of monuments—		
Ordinary repairs and maintenance	1,75,000	
Special repairs	3,75,000	
	<hr/>	5,50,000
Upkeep of gardens		1,75,000
Provincial public works overhead charges for conservation work		1,64,000
General Administration		5,00,000
Publications, special charges and contingencies		2,40,000
		<hr/>
TOTAL		16,29,000

The total number of monuments declared "protected" under the Ancient Monuments Preservation Act and accepted as a central charge by the Government of India is 2,521, in addition to which the Department are conserving about 80 monuments in such Indian States as have not sufficient resources to do the work themselves. Sufficient funds have not been forthcoming for the proper maintenance of all the protected monuments and the number actually under annual repair is 811, on 131 of which special conservation work is in progress or new works of special repair have been undertaken.

We appreciate that each of the protected monuments may have a considerable historical or archaeological value, but the cost of maintenance must necessarily increase with the age of the monuments and the liability on the central revenues will ultimately become very great if the whole of the 2,511 monuments are to be properly maintained. We consider therefore that the list of protected monuments should be drastically curtailed and that not more than 500 monuments should be maintained from central revenues, leaving to public liberality the maintenance of other monuments to which public interest may attach.

We recommend that during the present period of financial stringency the provision for the repair and maintenance of monuments should be limited to Rs. 3,00,000, exclusive of overhead charges, saving Rs. 2,50,000.

21. With regard to the provision of Rs. 1,75,000 for upkeep of gardens, we believe that some economies could be made, without materially affecting the appearance of these gardens and we recommend that, until financial conditions improve, the provisions for the upkeep of gardens be limited to Rs. 1,25,000, saving Rs. 50,000, which recommendation the Department is prepared to accept.

22. The Provincial Public Works charges amounting to Rs. 1,64,000 represent a percentage addition averaging 22½ per cent. for overhead charges for conservation work carried out under the supervision of the Local Governments. The proposed reduction in conservation work will therefore automatically effect a corresponding saving in overhead charges of about Rs. 85,000 and we think that some further reduction should be possible in the percentage charged by Local Governments.

23. We consider that the cost of administration, Rs. 5,00,000, should be considerably reduced. The total staff employed in the Archaeology at the present time compared with 1913-14, including the staff taken over from Madras and Burma, is as follows:—

	1913-14.	1922-23.
Officers	15	18
Technical Assistants	95	42
Office Assistants	20	45
Menials	41	76
Temporary staff	15	33
	<hr/>	<hr/>
TOTAL	126	214

We are of the opinion that the reductions we have proposed should enable some economy to be effected in the headquarters staff and that the total provision should be limited to Rs. 3,50,000 which is slightly in excess of the expenditure in 1921-22. This will effect a saving of Rs. 1,50,000.

24. The expenditure for 1922-23 also included a number of special items as follows :—

	Rs.
Furnishing the Central Asian Museum at Delhi	26,850
Expenditure in Central Asia	24,000
Publication and exhibition of Sir Aurel Stein's Central Asian Funds.	38,130
TOTAL	88,980

These items are non-recurring and a corresponding saving will therefore accrue in future years, making, with the reductions previously suggested, a total saving of Rs. 6,25,000. We recommend that the total provision for Archaeology should be limited to Rs. 10,00,000.

MINES.

	Rs.
1913-14, Actual Expenditure	98,000
1921-22, Revised Estimate	1,69,000
1922-23, Budget Estimate	2,27,000

25. The total increase in expenditure since 1913-14 is Rs. 1,29,000 of which Rs. 51,000 is due to revision of pay, Rs. 67,000 to increased establishment and Rs. 11,000 to other causes. The total staff employed has increased from 58 to 70.

The main functions of the department are statutory under the Indian Mines Act, 1901—and the principal duties may be summarised as follows :—

- (1) To inspect all mines and see that the provisions of the Act and the rules made thereunder are observed.
- (2) To examine and enquire into all matters connected with the safety of persons employed in mines.

Since 1913-14 the Indian Mines Act has been extended to the Northern and Southern Shan States, and the number of mines falling under the scope of the Act has increased from 1,426 in 1913 to 1,741 in 1921. The following statistics in regard to the coal mines illustrate the development which has taken place since 1913-14 :—

Year.	No. of Mines.	Coal production	No of persons employed.	No. of DEATHS PER	
				Million tons raised.	1,000 persons employed.
		Tons.			
1913	602	15,486,318	183,042	11 95	1 39
1919	741	21,759,727	190,052	11 95	1 37
1921	884	18,353,000	190,647	13 99	1 35

The total number of inspections carried out by the Department in connection with all mines has increased from 631 in 1913 to 1,233 in 1921 and the increased use of electricity in coal mines has necessitated the employment of an Electrical Inspector costing Rs. 26,000 per annum.

The Mines Surveying staff is mainly employed on surveying mines in connection with the safety of Railways, the number of workings under Railways which were surveyed in 1921 being 38. We are of the opinion that the question of recovering the cost of such surveys from the Railways or Mine owners as the case may be should be considered in connection with any amendment to the Land Acquisition (Mines) Act, 1885.

We also think that some economy could be effected by a curtailment of the free issue of the departmental publications and that additional revenue

might be derived therefrom. In view of the necessity of safeguarding adequately the workers in mines, we do not recommend any reduction in the expenditure for 1923-24 compared with 1922-23.

OTHER SCIENTIFIC DEPARTMENTS.

	Rs.
1913-14, Actual Expenditure	43,767
1921-22, Revised Estimate	3,55,000
1922-23, Budget Estimate	4,05,000

26. The large increase in expenditure since 1913-14 is mainly due to increased contributions to Scientific Societies and Institutes and to some reclassification of expenditure under the Reforms scheme

The expenditure is sub-divided under main heads as follows.—

	1913-14	1921-22	1922-23
	Rs.	Rs.	Rs.
Calcutta Museum	35,027	59,900	73,700
Donations to Scientific Societies and Institutes	5,833	2,35,000	2,57,000
Board of Scientific Advice	2,907	2,600	2,600
Hydro-Electric Surveys . . . . .	...	..	25,700
Expenditure in Minor Administrations . . . . .	..	34,000	46,000
TOTAL	43,767	3,21,000	3,59,000

27. *Calcutta Museum*.—The large increase in the expenditure on the Calcutta Museum is due mainly to the increase in cost of the Archæological Section from Rs. 7,489 in 1913-14 to Rs. 32,400 required for the current year. The staff employed in this section has increased as follows.—

	1913-14.	1922-23.
Administrative and clerical	1	2
Technical	2	6
Servants	4	12

The cost of salaries and wages has increased from Rs. 2,634 in 1913-14 to Rs. 20,020 and we think that a considerable reduction in the number employed should be effected and the cost reduced to about Rs. 10,000. The expenditure on allowances Rs. 6,110 includes Rs. 2,800 for travelling expenses to enable the Superintendent to tour and collect antiquities. We consider that no provision should be allowed for touring in 1923-24 and that the expenditure on allowances should be limited to Rs. 3,000. A reduction of Rs. 1,500 should also be possible in the provision for contingencies and we recommend that the total provision for the Archæological section should be limited to Rs. 17,800, a reduction of Rs. 14,600.

28. *Donations to Scientific Societies and Institutes*.—The main items included under this heading are grants of Rs. 1,50,000 to the Indian Institute of Science and of Rs. 1,00,000 to the Bose Research Institute.

The Indian Institute of Science provides for advance studies and research in organic and applied chemistry and electric technology. Under the Charitable Orders Act, 1890, the Government undertook in 1909 to make a grant equal to one-half the income of the Institute from local sources, including endowments and contributions, subject to a maximum grant of Rs. 1,50,000. In recent years the local assets have risen considerably above Rs. 3,00,000 per annum and the Government of India are therefore liable for the full Rs. 1,50,000 per annum.

The Bose Institute carries out researches connected with plant physiology, animal physiology and other cognate subjects. In this case also the Government grant is based upon the private income of the Institute and is only liable to be discontinued in the event of two unfavourable reports being received in succession.

A grant of Rs. 1,900 is given to the night and elementary School at Bangalore which we consider should be included in the Bangalore Budget as a charge against the revenues of the Assigned Tracts.

29. *Board of Scientific Advice and Hydro-Electric Surveys.*—We are informed that the Board of Scientific Advice will shortly be abolished and that no provision is proposed for this Board or for Hydro-Electric Surveys in 1923-24, thus saving Rs. 28,300

30. *Expenditure in Minor Administrations.*—The provision for 1922-23 includes Rs. 10,000 for Hydro-Surveys in Delhi which will not be required in 1923-24. Other minor economies should also be possible in Delhi and the North-West Frontier Province, and we consider that the provision for expenditure in the Minor Administrations should be limited to Rs. 30,000 for 1923-24.

EXPENDITURE IN ENGLAND.

£

ERRATA.

Page 188, paragraph 26:—

- (1.) In Column 1921-22 insert "23,500" against "Hydro-Electric Surveys," and substitute "3,55,000" for "3,21,000" in the last line.
- (2.) In Column 1922-23 substitute "4,05,000" for "3,59,000" in the last line.

[9900]

The amount included in the Secretary of State's Budget under this heading is only £3,200, including £2,500 for the Fauna Indica, presumably a non-recurring grant, £200 for the Linguistic Survey and £500 for contingencies. We consider the expenditure for 1923-24 should be limited to the £200 required for Linguistic Survey.

The provision of £27,400 for leave and deputation allowances includes a grant of £1,400 to the Imperial Institute which we suggest should be discontinued.

The contribution of £2,200 to the Mineral Resources Bureau expires on January 1st, 1923. The objects of this Bureau are the collection and dissemination of information and advice on the mineral resources of the Empire. It is an Imperial Bureau supported by the Dominions, Colonies and the Home Government, but in view of the present financial situation we think that future contributions should be limited to £1,000.

Of the £47,000 included for stores £12,000 was brought forward from 1921-22. At our request the provision has been analysed as follows:—

	£
Director General of Observatories	6,100
Mathematical Instrument Office	13,025*
Photo-Litho Office	21,546†
Trigonometrical Survey Office and Parties	5,085
Drawing Office	1,820
Engraving Office	265
Geological Survey of India	566
Botanical Survey	14
For rounding	79
TOTAL	47,000

*Includes £2,000 brought forward from 1921-22

†Includes £10,000 brought forward from 1921-22

We have already referred to the large stock of stores held by the Survey Department and, bearing in mind the curtailment in the activities of the various Departments which we have recommended and the fall in prices

might be derived therefrom. In view of the necessity of safeguarding adequately the workers in mines, we do not recommend any reduction in the expenditure for 1923-24 compared with 1922-23

OTHER SCIENTIFIC DEPARTMENTS

	Rs.
1913-14, Actual Expenditure	43,767
1921-22, Revised Estimate	3,55,000
1922-23, Budget Estimate	4,05,000

26. The large increase in expenditure since 1913-14 is mainly due to increased contributions to Scientific Societies and Institutes and to some reclassification of expenditure under the Reforms scheme.

The expenditure is sub-divided under main heads as follows:—

TABLE

27. *Calcutta Museum.*—The large increase in the expenditure on the Calcutta Museum is due mainly to the increase in cost of the Archæological Section from Rs. 7,489 in 1913-14 to Rs. 32,400 required for the current year. The staff employed in this section has increased as follows.—

	1913-14	1922-23.
Administrative and clerical	1	2
Technical	2	6
Servants	4	12

The cost of salaries and wages has increased from Rs. 2,634 in 1913-14 to Rs. 20,020 and we think that a considerable reduction in the number employed should be effected and the cost reduced to about Rs. 10,000. The expenditure on allowances Rs. 6,110 includes Rs. 2,800 for travelling expenses to enable the Superintendent to tour and collect antiquities. We consider that no provision should be allowed for touring in 1923-24 and that the expenditure on allowances should be limited to Rs. 3,000. A reduction of Rs. 1,500 should also be possible in the provision for contingencies and we recommend that the total provision for the Archæological section should be limited to Rs. 17,800, a reduction of Rs. 14,600.

28. *Donations to Scientific Societies and Institutes.*—The main items included under this heading are grants of Rs. 1,50,000 to the Indian Institute of Science and of Rs. 1,00,000 to the Bose Research Institute.

The Indian Institute of Science provides for advance studies and research in organic and applied chemistry and electric technology. Under the Charitable Orders Act, 1890, the Government undertook in 1909 to make a grant equal to one-half the income of the Institute from local sources, including endowments and contributions, subject to a maximum grant of Rs. 1,50,000. In recent years the local assets have risen considerably above Rs. 3,00,000 per annum and the Government of India are therefore liable for the full Rs. 1,50,000 per annum.

The Bose Institute carries out researches connected with plant physiology, animal physiology and other cognate subjects. In this case also the Government grant is based upon the private income of the Institute and is only liable to be discontinued in the event of two unfavourable reports being received in succession.

A grant of Rs. 1,900 is given to the night and elementary School at Bangalore which we consider should be included in the Bangalore Budget as a charge against the revenues of the Assigned Tracts.

29. *Board of Scientific Advice and Hydro-Electric Surveys.*—We are informed that the Board of Scientific Advice will shortly be abolished and that no provision is proposed for this Board or for Hydro-Electric Surveys in 1923-24, thus saving Rs. 28,300

30. *Expenditure in Minor Administrations.*—The provision for 1922-23 includes Rs. 10,000 for Hydro-Surveys in Delhi which will not be required in 1923-24. Other minor economies should also be possible in Delhi and the North-West Frontier Province, and we consider that the provision for expenditure in the Minor Administrations should be limited to Rs. 30,000 for 1923-24.

EXPENDITURE IN ENGLAND.

	£
1913-14, Actual Expenditure	39,100
1921-22, Revised Estimate	117,500
1922-23, Budget Estimate	82,500
31. This expenditure for 1922-23 is subdivided as follows :—	
	£
Expenditure under the control of the Secretary of State—	
Sundry Items	5,900
Expenditure under the control of the High Commissioner for India—	
Leave and deputation allowances	27,400
Contribution to the Mineral Resources Bureau	2,200
Stores for India	47,000
TOTAL	82,500

The amount included in the Secretary of State's Budget under this heading is only £3,200, including £2,500 for the Fauna Indica, presumably a non-recurring grant, £200 for the Linguistic Survey and £500 for contingencies. We consider the expenditure for 1923-24 should be limited to the £200 required for Linguistic Survey.

The provision of £27,400 for leave and deputation allowances includes a grant of £1,400 to the Imperial Institute which we suggest should be discontinued.

The contribution of £2,200 to the Mineral Resources Bureau expires on January 1st, 1923. The objects of this Bureau are the collection and dissemination of information and advice on the mineral resources of the Empire. It is an Imperial Bureau supported by the Dominions, Colonies and the Home Government, but in view of the present financial situation we think that future contributions should be limited to £1,000.

Of the £47,000 included for stores £12,000 was brought forward from 1921-22. At our request the provision has been analysed as follows :—

	£
Director General of Observatories	6,100
Mathematical Instrument Office	13,025*
Photo-Litho Office	21,546†
Trigonometrical Survey Office and Parties	5,085
Drawing Office	1,320
Engraving Office	265
Geological Survey of India	566
Botanical Survey	14
For rounding	79
TOTAL	47,000

*Includes £3,000 brought forward from 1921-22.

†Includes £10,000 brought forward from 1921-22

We have already referred to the large stock of stores held by the Survey Department and, bearing in mind the curtailment in the activities of the various Departments which we have recommended and the fall in prices

which has taken place, we are of the opinion that the total expenditure on stores for 1923-24 should not exceed £20,000.

32. We recommend that the total provision for expenditure in England in 1923-24 should be reduced from £82,500 to £47,500, saving £35,000 or Rs. 5,25,000.

CONCLUSIONS.

Having reviewed the expenditure for Scientific Departments we recommend that:—

- (1) the cadre of military officers in the Survey of India be progressively reduced and vacancies filled by less expensive civil agency;
- (2) survey work required for local Governments and local bodies be undertaken on special terms to be arranged, or the number of survey parties be reduced, securing, with other economies suggested, a reduction of Rs. 7,09,000 in the net expenditure of the Survey of India;
- (3) existing vacancies in the Geological Survey remain unfilled until Indian recruits are available and arrangements be made with other local Governments on the lines adopted for Burma;
- (4) the purchase of quinine be restricted to Rs. 15,45,000 and the area to be planted annually in Mergui be reduced to 250 acres;
- (5) the list of protected monuments and the provision for repair and maintenance of monuments and gardens be reduced and the provision for Archæology restricted to Rs. 10,00,000; and
- (6) the total provision for 1923-24 under the head "Scientific Departments" be limited to Rs. 82,58,000, a saving of Rs. 30,02,000.

SUPPLEMENTARY NOTES BY THE HON'BLE MR PURSHOTAMDAS THAKURDAS ON METEOROLOGICAL DEPARTMENT.

Till now Simla has been the headquarters of the Meteorological Department. Not only is a large part of the information supplied by this Department collected, tabulated and distributed from there, but it is the headquarters where all the administrative work is undertaken, except that of the issue of forms and instruments, which are sent out from Calcutta. The Director General of Observatories did not give any scientific reasons necessitating that the headquarters of his establishment should be at such a naturally expensive and remote place as Simla. I understand that the Government building which his establishment occupies at Simla is only temporary and will require to be rebuilt before long. I recommend that, at the latest, when the time for rebuilding comes, the necessity and advisability of locating the Director General at Agra, which is already the headquarters of the net work of upper air stations, should be seriously considered. I expect that a reduction by one Director of the Department is possible with the transfer of the headquarters of the Department. Further savings will accrue in:—

- (a) The Simla allowance of the clerical staff,
- (b) Lower travelling charges and allowances, and
- (c) Cheaper building cost for the new buildings.

In view of the grave financial stringency, these savings are not to be despised, even though, as urged by the Director General, the transfer from Simla to Agra may entail some diminution in the intellectual output of the superior staff during the hot weather—a general handicap common to the majority of officers working in the plains.

DELHI;

PURSHOTAMDAS THAKURDAS.

The 6th February 1923.

EDUCATION.

The estimates for 1922-23 compare with the revised estimate for 1921-22 and the actual expenditure for 1913-14 as follows:—

	Rs.
1913-14, Actual Expenditure	17,89,000
1921-22, Revised Estimate	31,09,000
1922-23, Budget Estimate	32,96,000

2. Education is a provincial transferred subject and the figures shown above relate only to expenditure on education in the minor administrations and to certain grants-in-aid made by the Central Government. The expenditure is subdivided under the main heads shown below:—

	1913-14.	1921-22	1922-23.
	Rs.	Rs	Rs.
GRANTS-IN-AID BY CENTRAL GOVERNMENT	3,36,000	2,70,000	3,01,000
MINOR ADMINISTRATION	12,97,000	27,03,000	28,57,000
EXPENDITURE IN ENGLAND (Rs. 15 = £1)	16,33,000	29,73,000	31,58,000
	1,56,000	1,36,000	1,38,000
TOTAL	17,89,000	31,09,000	32,96,000

3. GRANTS-IN-AID.

	Rs.
1913-14, Actual Expenditure	3,36,000
1921-22, Revised Estimate	2,70,000
1922-23, Budget Estimate	3,01,000

The grants-in-aid to Universities and Chiefs' Colleges are distributed as follows:—

	Rs.
Calcutta University	13,000
Benares Hindu University	1,00,000
Aligarh Muslim University	1,00,000
Chiefs' Colleges	53,000
Construction of High School at Pusa	30,000
Contingencies and rounding	5,000
TOTAL	3,01,000

The grant to the Calcutta University is for the maintenance of the Chair of Economics created by the Government of India in commemoration of the Jubilee of the University in 1908 and, in the circumstances, we make no recommendation.

The Benares and Aligarh Universities are central subjects under the Devolution Rules. We are informed that the Government of India are definitely committed to the grants now made to these institutions.

The grants to Chiefs' Colleges consist of Rs. 25,000 to the Rajkumar College, Rajkot, and Rs. 28,000 to the Aitchison College, Lahore. Similar grants to the Daly' College, Indore, and the Mayo College, Ajmer, are dealt with in our observations on the expenditure on education in Central India and

Rajputana respectively. We understand that the subvention to these colleges was based on the increased cost of the staff due to the reorganization of 1903, the arrangement being that any subsequent increase in expenditure should be met from fees and contributions from sources other than public funds. As regards the Rajkot College we observe that the receipts in 1922-23, including the grant, are estimated to exceed the expenditure by Rs. 12,000 and we are informed that the college authorities hope to make the institution self-supporting in 1923-24. No provision should therefore be necessary.

The finances of the Aitchison College are in a less satisfactory condition. We are informed that only 16 per cent of the students are from Indian States, the remainder coming from the Punjab and, in these circumstances, the question of discontinuing the grant is now being considered. Expenditure has been restricted, fees have been raised and an endeavour is being made to obtain increased contributions from the Ruling Princes and Chiefs in the Punjab. We consider that, if any grant is made, it should be limited to Rs 15,000.

The High School at Pusa is primarily for the needs of the employees at the Pusa Agricultural Research Institute and we are informed that the proposed grant of Rs. 30,000 has been postponed until the future of the Institute is decided.

MINOR ADMINISTRATIONS.

4. The estimates for expenditure on Education in the Minor Administrations may be analysed under main heads as follows. Details for each administration are given in Appendix A :—

Head.	1913-14, Actual Expenditure.	1921-22, Revised Estimate	1922-23, Budget Estimate
	Rs.	Rs.	Rs.
Universities	1,96,400	4,42,000	4,97,200
Secondary Education	4,94,800	9,15,800	10,38,100
Primary Education	4,62,800	9,01,500	10,46,800
Special Schools	29,800	1,12,400	1,29,000
General	1,12,800	3,30,900	4,00,500
TOTAL	12,96,600	27,02,600	31,11,600

The figures for 1922-23 shown in the above table do not take into account reductions effected to meet the lump cut made by the Legislative Assembly on the total estimate for each minor administration.

Of the additional expenditure of Rs. 18,20,000 in the budget estimate for 1922-23 compared with 1913-14 only Rs. 5,84,000 was devoted to primary education with the result that the percentage of the total Government expenditure allocated to primary education fell from 35.7 per cent. in 1913-14 to 33.6 per cent. for 1922-23. This percentage is very low and in this connection it may be of interest to mention that in England 70 per cent. of the expenditure of the Government on education is spent on elementary education. It is evident that more attention has been given in the areas directly under the Government of India to the development of higher education than to the extension of primary educational facilities to the large mass of the population which is at present illiterate.

5. The average cost to Government funds per child educated in Secondary and Primary Schools in 1920-21 (the latest information available) is given in Appendix B. It will be observed that there are large variations in the cost per child in the different administrations for which particulars are available, but it will be more convenient to deal with the question when considering the

expenditure in the individual administrations. This is distributed as follows, taking into account the lump cuts made by the Assembly :—

	1913-14.	1921-22	1922-23.
	Rs.	Rs.	Rs.
North-West Frontier Province	4,88,000	11,85,000	11,05,000
Baluchistan	1,07,000	1,98,000	2,72,000
Delhi	98,000	4,51,170	5,52,950
Coorg	66,000	1,24,180	1,51,000
Ajmer	1,02,000	2,38,000	2,30,120
Rajputana	82,000	1,11,690	1,09,770
Central India	72,000	85,000	82,940
Hyderabad	58,000	28,320	23,330
Bangalore	2,24,000	2,81,640	3,29,890
	12,97,000	27,03,000	28,57,000

We now deal seriatim with the expenditure in each Minor Administration.

NORTH-WEST FRONTIER PROVINCE.

	Rs.
1913-14, Actual Expenditure	4,88,000
1921-22, Revised Estimate	11,85,000
1922-23, Budget Estimate	11,05,000

6. The estimate for 1922-23 takes into account a reduction of Rs. 2 lakhs as part of the lump cut made by the Assembly on the estimates for this province. The actual reduction effected by the local authorities amounts to Rs. 1,23,277, the revised estimate for the current year being Rs. 11,82,000. Of this reduction Rs. 94,000 was secured from the grants-in-aid to primary and secondary schools.

7. *Universities.*—The total expenditure of Rs. 1,32,000 is made up of Rs. 63,000 for the Training College, Peshawar, and Rs. 67,000 for grants to private colleges. The main function of the Training College, Peshawar, is to train vernacular teachers for primary and middle schools in the Province. The local Retrenchment Committee have reported unfavourably on the institution and we have ascertained that there are 5 teachers employed costing Rs. 41,000 for an average daily attendance of only 33 students. We consider the number of teachers excessive and that the grant should be reduced from Rs. 65,000 to Rs. 40,000 for 1923-24.

The private colleges to which grants are made are the Islamia College, Rs. 50,000, Edward's College, Peshawar, Rs. 12,000 and the second grade college at Dera Ismail Khan Rs. 5,000. We are informed that the finances of the Islamia College are in a precarious condition and that it is possible that the college will close down owing to the recent refusal of the Government to increase its grant. We consider that the contribution now made should not be increased and that any additional funds required should be obtained by raising the fees to students and by increased private contributions from those interested. We also think that the contribution of Rs. 5,000 made to the second grade college at Dera Ismail Khan should be withdrawn. There are 5 teachers, costing Rs. 9,432, employed at this college for an average daily attendance of only 17 students.

8. *Secondary Education*—The cost of secondary education has increased from Rs. 74,900 in 1913-14 to Rs. 3,18,000 required for 1922-23. The average cost to Government per student in the Government schools in 1920-21 (the latest information available) was Rs. 76 compared with Rs. 46 in the Punjab and for India generally (see Appendix B). From particulars which

have been supplied to us it appears that the number of teachers employed in Government Schools is considerably in excess of the pre-war standard as shown below :—

Year.	Number of Government schools.	Number of teachers.	Average daily attendance of students.	Number of students per teacher.
1913-14	6	73	1,583	21.1
1921-22	7	98	1,243	12.7

The cost of teachers' salaries in these schools increased from Rs. 56,805 in 1913-14 to Rs 1,34,102 in 1921-22, whereas, had the ratio of teachers to students remained constant, 40 less teachers would have been employed, saving about Rs. 50,000. We consider that the pre-war standard of staffing was ample and that the grant for 1923-24 should be reduced by Rs. 50,000.

The number of aided High Schools has increased from 8 in 1913-14 to 13 in 1921-22 and the ratio of students to teachers has declined as shown below:—

Year.	Number of schools.	Number of teachers	Average daily attendance of students.	Average number of students per teacher.
1913-14	8	150	3,116	20.7
1921-22	13	248	4,362	17.6

We consider that in this case also the pre-war standard of staffing should suffice, saving 38 teachers. Similarly in the Middle Board Schools the number of students per teacher has fallen from 24.0 in 1913-14 to 19.8 in 1921-22 involving the employment of 73 more teachers than would be necessary under the pre-war standard of staffing.

It is evident from the above figures that the standard of staffing is on an extravagant scale and we think that the provision for secondary education in this administration should be rigorously curtailed and limited to Rs. 1,50,000 for 1923-24, saving Rs. 1,68,000.

9. *Primary Education.*—The cost of primary education has increased from Rs 2,86,700 in 1913-14 to Rs 6,66,000 required for 1922-23. The average cost to Government funds of each child educated in 1920-21 was Rs. 20-11-0 compared with Rs. 13-10-0 the average for India.

The number of Board Schools has increased from 421 in 1913-14 to 616 in 1921-22 and, as in the case of the secondary schools, the average number of students per teacher has declined although not to the same extent. The corresponding figures for the primary Board Schools are as follows :—

Year.	Number of schools.	Number of teachers.	Average daily attendance of children	Number of children per teacher
1913-14	421	637	15,189	23.7
1921-22	616	916	20,616	22.5

The adoption of the pre-war standard of staffing in this case would mean a saving of 51 teachers. We consider, however, that the average of 23.7 pupils per teacher is low for primary education and we think that endeavour should be made to increase the average to about 30 and in this connection we observe that the average number of pupils per teacher in the aided schools is 31.6.

We are informed that the provision of Rs. 6,60,000 for primary education in 1922-23 included Rs. 54,470 for increasing the pay of teachers, but that the Government have decided not to contribute towards the increased pay of

teachers in local Board Schools, saving Rs. 53,000. It is also proposed to reduce grants to Board Schools by Rs. 70,716 in the current year, making a total reduction of Rs. 1,23,716.

The figures which we have quoted indicate that a much larger number of children could receive the benefit of primary education without any increase in the number of teachers employed, but in view of the importance of extending primary education we make no recommendation.

10. *Special Schools*.—These schools costing Rs. 34,000 are for training teachers and we are informed that a saving of Rs. 19,000 is proposed for 1923-24.

11. *General Charges*.—The provision of Rs. 1,55,000 under general charges includes Rs. 27,000 for scholarships, but is mainly for inspection and administrative staff. The Department has proposed a reduction of Rs. 10,000 for 1923-24, but we consider that the expenditure under this head should be limited to Rs. 1,30,000.

BALUCHISTAN.

	Rs.
1913-14, Actual Expenditure	1,07,000*
1921-22, Revised Estimate	1,98,000
1922-23, Budget Estimate	2,72,000

* Includes grants-in-aid distributed over other heads in later years.

12. Although Baluchistan must be regarded as a backward province in regard to education, the grants made from central revenues in 1922-23 for secondary education amount to Rs. 1,00,600 whereas only Rs. 91,000 are provided for primary education. The assistance now given to primary education is, however, relatively much greater than in 1913-14 (see Appendix A). We have been supplied with the following particulars shewing the number of teachers and pupils at the various classes of schools :—

Class of School.	Year.	Number of teachers.	Number of pupils attending daily.	Number of pupils per teacher.
Primary Schools	1913-14	53	877	16.5
	1921-22	78	1,223	15.9
Secondary— Anglo-Vernacular School	1913-14	17	251	14.8
	1921-22	25	319	12.7
High Schools	1913-14	24	429	17.9
	1921-22	34	684	20.1

We consider the average number of pupils per teacher in Primary and Anglo-Vernacular Schools is too low and that the number of teachers should be reduced to an average of not more than one teacher for 20 pupils. With regard to primary schools we think that provision should be made for the extension of primary educational facilities and we therefore recommend no reduction.

We understand that it is proposed to increase the fees for secondary education by 50 per cent. which will yield Rs. 12,500 and we recommend that the grant for secondary education be reduced by Rs. 15,000.

13. *General Charges*.—The provision under this head includes Rs. 42,750 for scholarships compared with Rs. 24,000 in 1921-22 and Rs. 3,900 in 1913-14. We recognise the desirability of making some provision to assist pupils of exceptional ability, but we think that in present circumstances the provision should not exceed the revised estimate of 1921-22, i.e., Rs. 24,000.

DELHI.

	Rs.
1913-14, Actual Expenditure	1,43,000
1921-22, Revised Estimate	4,51,170
1922-23, Budget Estimate	5,52,950

14. In order to meet the reduction of Rs 1,00,000 made by the Assembly in the Delhi estimates Rs. 55,000 was surrendered from the education grant for 1922-23. Even allowing for this reduction however the expenditure has increased by no less than 248 per cent. since 1913-14.

15. *Universities and Arts Colleges.*—The grant to Universities and Arts Colleges has increased from Rs. 14,200 in 1913-14 to Rs. 1,76,000 estimated for 1922-23. The latter figure was subsequently reduced to Rs. 1,41,500 made up as follows :—

Non-Government Arts Colleges	Rs. 91,500.
Delhi University	50,000

The grant to the Arts Colleges increased from Rs. 14,250 in 1913-14 to Rs. 67,725 in 1920-21 and in the latter year the cost to Government of each student was Rs. 117 compared with Rs. 60 per student in the Punjab and Rs. 48 in India generally. The grant was increased to Rs. 94,570 for 1921-22 and the cost per student rose to Rs. 162. These cost figures are based upon the number of students on the rolls which is considerably in excess of the average number attending daily. For example, the number of students on the rolls was 581, but the average daily attendance was only 466 and the cost to Government per student attending daily was therefore Rs. 203. We consider that there is no justification for the large grants given to Delhi colleges and recommend that the grants for 1923-24 be limited to Rs. 60,000. The grant of Rs. 50,000 for Delhi University is intended to provide a nucleus for a new University which, it is estimated, will ultimately involve an initial expenditure of Rs. 34,00,000 and an annual recurring expenditure of Rs. 2 to 4 lakhs. We understand that there is no lack of facilities for University education in Northern India and consider that the present financial conditions do not justify the formation of a new University. We recommend that the scheme be reconsidered.

16. *Secondary and primary education.*—The provision for secondary education has increased from Rs. 53,800 in 1913-14 to Rs. 2,00,500 for 1922-23, and for primary education from Rs. 24,000 to Rs. 91,800.

We have been supplied with the following particulars showing the number of teachers and pupils in the various schools in 1921-22 compared with 1913-14 :—

Class of School.	Year.	Number of teachers.	Number of pupils attending daily.	Number of pupils per teacher
Secondary schools	1913-14	166	2,211	13.3
	1921-22	450	5,905	13.1
Primary schools	1913-14	242	Not available	
	1921-22	280	6,097	23.4

We are of the opinion that the employment of 450 teachers costing Rs. 2,14,000 in secondary schools in 1921-22 is excessive for the number of students attending. We are informed that grants are made in accordance with the Punjab Educational Code, but we consider the system is not conducive to economy and should be revised; we deal with this question later. We recommend that the grant for secondary education in 1923-24 should be limited to Rs. 1,50,000, a reduction of Rs. 50,500, but that no reduction should be made in the provision for primary education.

Costs.

1913-14, Actual Expenditure	Rs. 66,000
1921-22, Revised Estimate	1,24,180
1922-23, Budget Estimate	1,51,000

17. Of the total expenditure of Rs 1,51,000 provided for 1922-23 only Rs. 44,280 are included for primary education whereas Rs. 60,660 are allocated to secondary schools.

The cost per pupil to Government funds in 1920-21 is shown in Appendix B from which it will be observed that the expenditure in Coorg compares favourably with that in the neighbouring Province of Madras except in the case of aided secondary schools.

The following table shows the number of teachers and pupils in secondary and primary schools in 1921-22 compared with 1913-14.—

	Year	Number of teachers	Number of pupils attending daily	Average number of pupils per teacher
Secondary	1913-14	27	481	17.1
	1921-22	47	681	14.5
Primary	1913-14	248	5,739	23.1
	1921-22	282	5,457	19.0

It will be seen that the average number of pupils per teacher is considerably less than in 1913-14. We are informed that it is proposed to raise the fees at secondary schools which will yield an additional revenue of about Rs. 1,000 for 1923-24 and that other economies are proposed, saving Rs 12,000. We consider, however, that larger economies should be effected and recommend that the total provision for education in Coorg in 1923-24 should be reduced to Rs. 1,10,000, saving Rs. 41,000.

AJMER.

	Rs.
1913-14, Actual Expenditure	1,02,000
1921-22, Revised Estimate	2,38,000
1922-23, Budget Estimate	2,30,120

18. The Budget estimate for 1922-23 was originally Rs. 2,80,120, but this was reduced by Rs. 50,000 as part of the cut made by the Legislative Assembly in the estimates of the province. We are informed, however, that the actual reduction made was only Rs. 9,634, the Revised estimate for 1922-23 being Rs. 2,70,486.

The original estimate of Rs. 2,80,120 for 1922-23 provided only Rs. 44,200 for primary education. We consider that relatively too much attention is being given to the development of higher educational facilities and that it would be desirable to devote a much larger proportion of such funds as may be available from central revenues to the extension of primary education.

19. *University*.—The grant to the Government College, Ajmer, has been increased from Rs 28,614 in 1913-14 to Rs. 64,700 in 1922-23. The average daily attendance of students increased from 80 in 1913-14 to 89 in 1921-22, and the cost to Government of each student educated is now over Rs. 700 per annum.

In 1921-22 the teaching staff comprised a principal and 8 professors as against a principal and 6 professors in 1913-14, although the average daily attendance of students had only risen by 9. We consider that there is no justification for the increased staff and that in present financial circumstances the staff should be reduced to at least the pre-war level. We are informed that the question of raising the fees charged for tuition is now under consideration and we recommend that the grant for 1923-24 should be limited to Rs. 45,000.

20. *Secondary Schools*.—The grant for secondary education has increased from Rs. 46,700 in 1913-14 to Rs. 1,15,400 for 1922-23, the latter figure including Rs. 91,000 for Government Schools and Rs. 24,000 for aided schools.

The number of pupils and teachers in Government and aided schools in 1921-22 compared with 1913-14 was as follows:—

Class of School	Year	Number of schools	Number of teachers	Average number of pupils daily	Number of pupils per teacher
Government	1913-14	10	57	1,159	20.8
	1921-22	12*	65	933	14.3
Aided	1913-14	6	69	860	12.5
	1921-22	11	107	1,398	13.1

*One since abolished

This table shows that whereas the average daily attendance at the Government schools has fallen off, there has been an increase in the number of teachers employed. We consider that the number of teachers should be reduced to the pre-war standard, saving 19 teachers, also that the scale of fees which is lower than in the aided schools should be raised and the grant reduced to Rs. 70,000.

The standard of staffing in the aided schools is also excessive and we think the grant to these schools should be reduced to Rs. 10,000.

21. *Primary schools.*—The average number of pupils per teacher in the Government Primary Schools is only 19.4 and in the aided schools 12.7. We consider that these standards should be materially raised, which would set free funds for increasing the number of schools.

RAJPUTANA.

	Rs.
1913-14, Actual Expenditure	82,000
1921-22, Revised Estimate	1,11,690
1922-23, Budget Estimate	1,09,770

22. The estimate for 1922-23 has been reduced by Rs. 5,180 to meet the cut made by the Legislative Assembly in the total budget of the Administration.

23. *University.*—The grant of Rs. 73,980 consists of a recurring grant of Rs. 55,020 made to the Mayo College and Rs. 18,960 for a leave reserve of officers for the Chiefs' Colleges who are attached to the Mayo College for administrative convenience. We are informed that the Government is committed to the assistance given to the Mayo College as long as the conditions under which the grant is made are observed.

24. *Secondary Education.*—We consider the grants-in-aid to secondary schools amounting to Rs. 34,100 should be reduced to Rs. 20,000. The grants are said to be based upon the number of students attending but we observe that in certain schools the number of pupils per teacher is only about 8, whereas in others it is 18.

CENTRAL INDIA.

	Rs.
1913-14, Actual Expenditure	63,000
1921-22, Revised Estimate	85,000
1922-23, Budget Estimate	82,940

25. The main item included is Rs. 50,000 for the Daly College, Indore, which is a Chiefs' College and we are informed that the Government is committed to the grant now given and that no reduction is possible.

HYDERABAD.

	Rs.
1913-14, Actual Expenditure	58,000
1921-22, Revised Estimate	28,320
1922-23, Budget Estimate	23,350

26. We are informed that it has been decided to reduce the grants-in-aid to Hyderabad by Rs. 2,250 to meet the cut made by the Assembly. These

grants include Rs. 18,490 for secondary education the cost of which we think should be met from local bazar funds and by increased fees and we recommend therefore that the provision for 1923-24 be reduced by Rs. 18,490.

BANGALORE.

	Rs.
1913-14, Actual Expenditure	2,24,000
1921-22, Revised Estimate	2,81,640
1922-23, Budget Estimate	3,29,890

27. This expenditure is met from the revenue of the Assigned Tracts and does not call for any special comment.

GENERAL.

28. *System of Grants.*—The basis of Government grants to schools and colleges in the different administrations varies considerably.

In some cases they are based upon the rules in force in neighbouring provinces and in other cases they are assessed on the total expenditure of the individual schools, on the salaries of teachers employed, on a fixed capitation allowance, or on the difference between income and expenditure, etc.

In the North-West Frontier and Delhi Provinces grants are of three kinds:—

- (a) Capital grants for buildings, equipment, etc.
- (b) Direct maintenance grants to (1) colleges and (2) secondary schools.
- (c) Grants to local bodies for the maintenance of vernacular and primary schools.

29. *Capital Grants.*—These grants are made usually on the pound per pound principle to the managers of private institutions for the erection or extension of school buildings and the purchase of school furniture.

30. *Direct maintenance grants to colleges.*—These grants are usually determined in each case after consideration of the special conditions of the college and in some cases Government may subsidise a college to avoid the necessity of opening a Government college.

31. *Direct maintenance grants to secondary schools.*—In the North-West Frontier Province, we are informed that the grants represent the amount necessary to raise the income from fees and other sources to the minimum needed for maintaining efficiency. Supplementary and additional grants are given to encourage the managers to improve their staff and to pay them well. A standard minimum scale of staff and salaries is laid down for each class of schools, and the amount of the grant is based on the difference between what the income of the school would be from fees charged at full Government rates and the cost of the staff if paid in accordance with the standard rates. If the managers pay their teachers more than the standard rates of pay, Government meets half the cost of the additional pay. The cost of maintenance of buildings and any deficit arising from a reduction in the rate of fees below the Government scale have to be met from private or local sources.

In Delhi, maintenance grants to secondary schools are awarded in accordance with the regulations of the Punjab Educational Code. The grants for each school consists of a capitation grant based on the average attendance of students and a staff grant to teachers holding certificates granted by the department. The total grant may not exceed three-fourths of the excess of expenditure on tuition over the income from the fees. The cost of tuition, however, includes not only the cost of the staff but also petty repairs to buildings, contingencies, etc.

32. *Grants to local bodies for maintenance of primary and vernacular schools.*—Primary and vernacular education is financed partly from local funds and partly from Government grants. In the North-West Frontier Province 25 per cent. of each District Board's income is devoted to education, and all additional sums required for opening new schools, the enhancement of

teachers' salaries, the provision of additional teachers, etc., are paid by Government. The grants to municipalities for primary education are said to be fixed in accordance with their needs after consideration of their financial circumstances. In Delhi the basis of assessment for grant-in-aid is the salaries of the teachers. Government pays two-thirds of the salaries of trained or qualified teachers in vernacular middle and primary schools and half the salaries paid to unqualified teachers. It also pays half the expenditure on the upkeep of primary school buildings. These arrangements apply both to municipal and district board schools.

33. We consider that the present system under which grants are made is unsatisfactory, uneconomical, and prejudicial to the best interests of the country. In our opinion the most pressing need is the extension of primary education facilities to the greatest possible number, and it is evident that the present policy does not fulfil this fundamental requirement. We are informed that probably not more than 20 per cent of the children of school-going age in the minor administrations are attending school, and that a large increase in expenditure is inevitable. In these circumstances there is in our opinion no justification for allocating to primary education only 33·6 per cent. of the funds available for education in the minor administrations. We recommend that, in the present financial situation of the country, the grants for higher education should be curtailed and fixed at a lump sum for each administration for the next five years, any additional expenditure incurred being met by fees, increased grants from District Boards and Municipalities and private contributions.

34. We feel strongly the necessity for increasing facilities for primary education and therefore have not recommended any reduction in the amount granted for the purpose, but we recommend that in future grants should be made on a capitation basis for each school, fixed upon the average daily attendance of pupils and the number of teachers necessary to maintain a recognised standard of staffing, which we think should be fixed at not more than one teacher per 25 pupils, rising in five years to one teacher per 30 pupils. We recognise, however, that this is not possible in every case where the number of pupils is not obtainable.

EXPENDITURE IN ENGLAND.

	£
1913-14, Actual Expenditure	10,400
1921-22, Revised Estimate	9,100
1922-23, Budget Estimate	9,200

35 This expenditure represents leave allowances and we make no recommendation.

CONCLUSIONS.

Having reviewed the expenditure on education we recommend that:—

- (1) the whole educational policy be revised, the present system of grants being modified to secure that such funds as are available are applied for the extension of primary education rather than to secondary and higher education;
- (2) grants for secondary and higher education be curtailed and fixed at a lump sum for each administration for the next five years, any additional expenditure required being met from increased fees, increased grants from local bodies and private contributions;
- (3) grants for primary education be fixed as far as possible on the basis of an average of one teacher per 25 pupils rising to one teacher per 30 pupils within five years;
- (4) the scheme for the Delhi University be reconsidered; and
- (5) the budget estimate for 1923-24 for education be limited to Rs. 27,77,000, a saving of Rs. 5,18,000 on the sanctioned estimate for 1922-23 and of Rs. 7,74,000 on the estimate originally presented to the Legislative Assembly.

APPENDIX A.

Statement showing the expenditure from central revenues on the various classes of Education in the Minor Administrations.

	Universities		Secondary Education		Primary Education		Special Schools		General charges		TOTAL	
	1913-14.	1922-23	1913-14.	1922-23	1913-14.	1922-23	1913-14.	1922-23	1913-14.	1922-23.	1913-14	1922-23
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
North-West Frontier .	88,000	1,32,000	79,900	3,18,000	2,86,700	6,66,000	17,000	34,000	65,900	1,55,000	4,87,500	13,05,000
Baluchistan			78,300	1,00,600	19,800	91,000	..	15,800	8,700	64,600	1,06,800	2,72,000
Delhi	14,200	1,78,000	53,800	2,00,500	24,000	91,800	..	22,800	6,300	61,300	98,300	5,52,900
Coorg . . . . .	..	..	26,200	60,600	25,000	44,200	5,500	13,200	9,300	32,600	66,000	1,50,700
Ajmer	28,600	64,700	46,700	1,15,400	12,900	44,200	4,400	20,400	9,800	35,400	1,02,400	2,80,100
Rajputana	65,600	74,000	15,100	34,100	400	1,200	..	..	700	500	81,800	1,09,800
Central India	50,000	50,000	15,300	16,300	6,500	11,400	..	..	..	5,200	71,000	82,900
Hyderabad . . . . .	..	..	29,200	18,500	27,500	7,600	600	400	1,200	1,800	58,500	23,300
Bangalore . . . . .	..	..	1,50,300	1,74,100	60,000	89,300	2,300	22,400	10,900	44,100	2,23,000	3,29,900
TOTAL	1,96,400	4,97,200	4,94,800	10,38,100	4,62,000	10,46,800	23,800	1,29,000	1,12,800	4,00,000	12,96,600	31,11,600*

* The figures for 1922-23 do not take account of the lump cut made by the Assembly in the estimates of the various administrations

APPENDIX B.

Statement showing the average cost to Government funds of each child educated in 1920-21

Administrations.	ARTS COLLEGES		SECONDARY SCHOOLS			PRIMARY SCHOOLS		
	Government.	Aided.	Government.	District Board and Municipality	Aided	Government.	District Board and Municipality.	Aided.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
North-West Frontier . . . .	...	361 11 1	76 7 6	17 7 6	15 6 11	20 11 9	12 4 3	...
Delhi . . . . .	...	116 10 2	68 4 0	5 6 2	15 7 8	20 1 3	18 1 10	2 14 4
Coorg . . . . .	...	..	23 7 7	..	26 8 2	10 9 0	3 0 11	0 4 8
Madras . . . . .	..	...	40 4 10	10 8 4	6 10 1	12 11 4	4 3 2	2 14 10
Punjab	307 14 7	60 4 6	46 3 10	6 9 8	12 7 7	17 11 7	6 9 0	2 6 8
India	251 13 11	47 13 6	46 5 2	6 15 6	10 5 6	13 10 4	6 0 10	1 9 5

MEDICAL SERVICES AND PUBLIC HEALTH.

These two heads of account are closely inter-related, and it will be convenient to deal with them together. The estimate for 1922-23 compares with the revised estimate for 1921-22 and the actual expenditure in 1913-14 as follows :—

	Medical Services	Public Health.	TOTAL
	Rs	Rs	Rs
1913-14, Actual Expenditure	12,72,000	10,46,000	23,18,000
1921-22, Revised Estimate	27,51,000	16,14,000	43,65,000
1922-23, Budget Estimate	32,84,000	16,32,000	49,16,000

2. Under the Reforms Scheme, medical administration, medical education, public health, sanitation and vital statistics are (save for reservations as to legislation in respect of infectious and contagious diseases) provincial transferred subjects over which the Central Government's powers of control are strictly limited.

An analysis of the expenditure of the two departments is as follows :—

	MEDICAL SERVICES		PUBLIC HEALTH.	
	1913-14.	1922-23.	1913-14	1922-23.
	Rs.	Rs.	Rs.	Rs.
ADMINISTRATION	1,35,000	2,74,100	93,916	1,39,000
RESEARCH DEPARTMENT	..	2,26,200	..	..
CENTRAL RESEARCH INSTITUTE	..	..	1,14,516	3,93,100
GRANTS-IN-AID	1,97,000	4,32,300	5,52,569	5,19,000
MEDICAL OFFICES, HOSPITALS AND DISPENSARIES	42,000	56,400	...	..
IMPERIAL SEROLOGIST	...	68,800	...	...
X-RAY INSTITUTE	79,000	1,32,000	...	...
CHARGES IN MINOR ADMINISTRATIONS	7,32,000	15,36,000	2,34,000	4,39,000
MISCELLANEOUS	...	..	6,000	45,000
	11,92,000	26,25,800	11,01,000	15,36,000
EXPENDITURE IN ENGLAND Rs. 15 = £1	80,000	5,58,000	45,000	96,000
	12,72,000	32,83,800	10,46,000	16,32,000

ADMINISTRATION.

3. Under the Reforms Scheme medical administration in the provinces is entirely a provincial concern and it is difficult to appreciate the necessity for the large increase in expenditure from Rs. 2,28,916 in 1913-14 to Rs. 4,13,100 required for 1922-23. The establishment now maintained at headquarters includes the following gazetted appointments :—

Medical Services.

Director-General, Indian Medical Service.
Deputy Director-General, Indian Medical Service.
Assistant Director-General, Stores.
Deputy Assistant Director-General.
Officer on Special duty.

Public Health.

Public Health Commissioner.
Assistant Director-General,
Indian Medical Service.

We are informed that the appointment of officer on special duty will be abolished in 1923-24 and we further recommend that the temporary appointment of Deputy Assistant Director General, which was created largely as a war measure, also be abolished. We are not satisfied that, under present conditions, there is any justification for retaining a separate appointment of Public Health Commissioner. It was represented to us that one of his principal functions, which could not be readily transferred, was attendance at international conferences and the like, but we consider that such duties could well be undertaken by a senior officer on leave or a recently retired officer, an honorarium, if necessary, being given. We ascertained that there was a certain amount of overlapping of responsibilities in connection with research work and we accordingly recommend that the duties of the Public Health Commissioner be transferred to the Director General, Indian Medical Service, who could, if necessary, retain as one of the two deputies an officer with experience in public health matters. The total savings resulting from the abolition of these three appointments in 1923-24 will be Rs. 76,000.

4. Some reduction should be possible in the statistics prepared by the Public Health Office, and it has also been brought to our notice that cases dealt with in the office of the Director General are again dealt with in the Secretariat Department of Education and Health causing unnecessary duplication of work. We are of opinion, therefore, that the number of clerks employed in the Director General's office, which has increased from 39 in 1913-14 to 50 at the present time, could be reduced and we recommend that further savings of at least Rs. 34,000 be effected in the charges for clerks, peons, allowances, contingencies, etc., making a total reduction under headquarters charges of Rs. 1,10,000, of which Rs. 45,000 falls under the head Public Health.

RESEARCH, GRANTS-IN-AID, ETC.

5. Expenditure under these headings includes the following items:—

	Rs.
Research Department	2,26,200
Central Research Institute, Kasauli	3,83,100
Grant-in-aid to Indian Research Fund	5,00,000
Grants-in-aid—Medical Services	4,32,300
Grant-in-aid—Public Health	19,900
TOTAL	15,71,500

Research Department.—The Research Department consists of a Director of Medical Research, who was appointed in 1921-22, and a staff of 25 officers. Four officers are employed on the staff of the Central Research Institute, Kasauli, nine in provincial laboratories and Pasteur Institutes who are paid for by the provinces, and the remaining 12 in non-specified appointments, their pay being met from the provision of Rs. 2,26,200 given above.

6. *Indian Research Fund.*—Of the grant of Rs. 5,00,000 to the Indian Research Fund Association only about Rs. 2,30,000 is at present utilised for research, the balance being set aside for a proposed Central Medical Research Institute at Delhi. The total sum accumulated for this institution to date amounts to Rs. 33,26,000, the whole of which has been derived from Government sources. We are not satisfied that, in present financial circumstances, the setting aside of these large sums of money to establish an additional research institute can be justified. The reasons put forward in justification of the scheme are as follows:—

- (1) The establishment of a Central Institute at Delhi was recommended by an expert from home after inspection of the existing institutions in India.
- (2) The abandonment of the proposal will mean the loss of Rs. 1½ lakhs per annum promised by certain private donors.

- (3) The Secretary of State has agreed to the scheme and the negotiations with the donors have reached a stage from which Government can hardly draw back; the Legislative Assembly have also approved the proposal.
- (4) At Delhi the Institute will be under the eyes of the Government of India and of the Legislative Assembly.
- (5) At Delhi sites will be provided free of cost.
- (6) The Governing Body of the Indian Research Fund Association have decided to put aside annually for this purpose Rs. 2½ lakhs from the grant of Rs. 5 lakhs hitherto made to them by Government.
- (7) A central institute will greatly strengthen the existing research institutions by advising and co-operating with them in the intricate problems of research.

7. We cannot regard these as being sufficient reasons for the urgent prosecution of this ambitious scheme, bearing in mind that there are already in existence three research organisations, namely, the Kasauli Institute, the Bombay Bacteriological Laboratory and the School of Tropical Medicine and Hygiene at Calcutta.

8. We have ascertained that the 12 bacteriological officers holding unspecified appointments, whose pay is borne on the medical services budget, are lent to the Indian Research Fund Association to carry out research under their control, the Fund meeting only the travelling and field allowances. These officers appear to be interchangeable with other officers remunerated directly from the funds of the Association. The pay of these 12 officers must therefore be regarded as, in effect, a contribution to the Indian Research Fund. We recommend that the appointment of 12 bacteriological officers be abolished and the contribution of Rs. 5 lakhs to the Indian Research Fund be discontinued, such research as is required being met from the interest derived from the accumulated investment of Rs. 33,26,000 in the Fund. We also recommend that the new appointment of Director of Medical Research be abolished, any necessary duties being carried out by the Director of the Kasauli Research Institute.

9. *The Research Institute, Kasauli.*—This Institute is utilised partly for research and partly for the manufacture of vaccines and sera which are issued on payment to the military services, Local Governments and local bodies. The budget estimate for 1922-23 was Rs. 3,93,000, which has been reduced in the revised estimate to Rs. 2,75,000, mainly owing to reduced expenditure on supplies and services. The receipts from the sale of serum are estimated at Rs. 3,07,000, the bulk of this representing book adjustments between departments. The estimate of expenditure for 1923-24 is Rs. 2,92,000, a saving of Rs. 1,00,000.

10. The reductions which we have proposed under expenditure on research amount to Rs. 8,26,000, including the reduction proposed by the Department in the estimate for the Kasauli Institute.

11. *Grants-in-aid.*—The grants-in-aid under medical services are as follows:—

	Rs
Grants to the Dufferin Fund	3,70,000
Grants to Indian Nursing Association	39,830
Grants to Simla Hospitals	22,500
	4,32,300

The grants to the Dufferin Fund date from 1913 when a subsidy of Rs. 1½ lakhs was given to enable the Fund to organise a non-official women's medical service. The grant has, in the past, been based on the number of lady doctors engaged, but we understand that it has been decided to limit the grant in future to its present figure and, in view of the importance of the work carried out, we make no recommendation.

The grants of Rs. 19,900 under Public Health include provision of Rs. 1,000 for plague charges in the Northern India Salt Revenue Department and Rs. 9,500 for the Central Health Board which will not be required next year a total reduction of Rs. 10,500.

12. *Imperial Serologist, Rs. 68,800.*—We understand that the provision has been reduced by Rs. 20,000 for 1923-24 and that steps are being taken to charge adequate fees for examinations conducted by this office. We recommend that, unless this establishment can be made self-supporting within a year, it be abolished.

13. *X-Ray Institute, Rs. 1,32,000.*—This institute is primarily required for military purposes, but it also performs services to the civil administrations by training operators, purchasing and repairing plant, giving advice, etc. We are informed that no charges are made by the Institute for training students for the Local Governments and we recommend that all expenditure incurred on their behalf should be recovered. We ascertained that large reserve stocks are being carried by the Institute as shown in the following statement:—

	1913-14.	1921-22
	Rs.	Rs.
Stock at commencement of year	34,335	8,84,050
Purchases during year	26,070	1,95,794
Issues to military institutions during year	11,260	80,849
Issues to civil institutions (on payment indent) during year	4,603	1,269
Issues to the X-Ray Institute, Dehra Dun, and branches in Delhi and Simla, during year	4,317	1,02,649
Issues to the Disposals Commissioner during year		2,63,270
Stock at end of year	39,705	6,91,807

We recommend that the stores held be limited to one year's requirements. It has been agreed that the whole indent for purchase of X-Ray stores in 1923-24 should be cancelled, saving Rs. 1,27,000. A reduction of Rs. 6,000 has also been effected in the current expenditure of the Institute.

14. *Miscellaneous (Rs. 45,000).*—This charge under Public Health mainly represents port quarantine charges for ports in Madras. The whole question of quarantine restrictions at Indian ports requires examination. There is no reason, so far as we can see, why an expensive organization need be maintained for the examination of vessels proceeding from one Indian port to another while the public are permitted to travel by rail freely from one province to another. It is necessary to have an inspection of vessels proceeding to Europe by the Suez Canal, to enable them to obtain the clean bill of health required by the Egyptian Authorities, and possibly of vessels proceeding to other foreign ports, but there must be room for considerable reduction of expenditure all round the coast of India in connection with these quarantine regulations. There are no quarantine rules in Great Britain. If a vessel arrives at a British port from abroad with an infectious disease on board she is immediately given pratique. If there is sickness on board, the sick are removed at once, their quarters fumigated and the ship is not detained. Similar rules might with advantage be introduced into India.

CHARGES IN THE MINOR ADMINISTRATIONS.

	Medical Services.	Public Health.
	Rs.	Rs.
1913-14, Actuals	7,39,000	2,34,000
1921-22, Revised Estimate	14,02,000	3,76,000
1922-23, Budget Estimate	15,36,000	4,39,000

This expenditure is distributed as follows :—

	MEDICAL SERVICES.		PUBLIC HEALTH.	
	1913-14.	1922-23.	1913-14.	1922-23.
	Rs.	Rs.	Rs.	Rs.
North-West Frontier Province	2,10,000	4,05,000	16,000	2,32,000
Baluchistan	1,01,000	8,47,000	14,000	24,000
Delhi	1,11,000	3,43,260	1,20,000	86,000
Coorg	44,000	82,000	4,000	6,620
Ajmer-Merwara	33,000	71,260	1,000	2,830
Rajputana	5,000	9,370	4,000	5,790
Central India	1,32,000	80,500	.	1,000
Hyderabad	6,000	7,150	.	10,000
Bangalore	97,000	2,35,170	75,000	70,760
TOTAL	7,39,000	15,38,000	2,34,000	4,39,000

15. *North-West Frontier Province—*

	Medical.	Public Health.
	Rs.	Rs.
1913-14, Actuals	2,10,000	16,000
1922-23, Budget Estimates	4,05,000	2,32,000

As a result of the recommendations of the local Retrenchment Committee, the budget provision for 1922-23 under Medical has been reduced to Rs. 3,53,000, and under Public Health to Rs. 1,34,000, saving in all Rs. 1,50,000.

16. *Baluchistan—*

	Medical.	Public Health.
	Rs.	Rs.
1913-14, Actuals	1,01,000	14,000
1922-23, Budget Estimates	3,47,000	24,000

The provision under medical for 1922-23 includes Rs. 18,760 for furnishing the Quetta hospital which is non-recurring, Rs. 84,500 for cost of medicines and diets, and Rs. 42,900 for contingencies. We consider that, substantial reductions under these heads should be possible, particularly in view of falling prices and we recommend that the budget provision for 1923-24 be limited to Rs. 3,00,000, saving Rs. 47,000.

We are informed that the estimate for Public Health in 1923-24 has been reduced by Rs. 10,000, making a total reduction of Rs. 57,000.

17. *Delhi—*

	Medical.	Public Health.
	Rs.	Rs.
1913-14, Actuals	1,11,000	1,20,000
1923-24, Budget Estimates	3,43,260	86,000

The main item in the increased provision for 1922-23 under Medical is the grant-in-aid to the Lady Hardinge Medical College limited to Rs. 2,00,000, the present figure, which is not susceptible of reduction, and we therefore make no recommendations. The remaining expenditure of Rs. 1,43,260 includes Rs. 23,000 for non-recurring charges and further savings of Rs. 15,000 should be possible in the provision for medicines and apparatus, making a total reduction of Rs. 38,000.

The proposed provision under Public Health for 1923-24 is Rs. 78,610, but we consider that further savings should be possible in the grants to local bodies which amount to Rs. 58,500. We recommend that the provision for Public Health in 1923-24 be limited to Rs. 70,000, saving Rs. 16,000, and making a total reduction of Rs. 54,000.

18. *Coorg—*

	Medical.	Public Health.
	Rs.	Rs.
1913-14, Actuals	41,000	4,000
1922-23, Budget Estimates	82,000	6,620

We understand that the officer who investigated the medical expenditure in Coorg proposed a reduction of Rs. 11,500 and we recommend that a saving of this amount be given effect to in 1923-24.

19. *Ajmer-Merwara*—

	Medical.	Public Health.
	Rs.	Rs.
1913-14, Actuals	33,000	1,000
1922-23, Budget Estimate	71,260	2,830

We understand that the provision for 1923-24 under Medical is estimated at Rs. 79,870, the increase being due to a new provision for leave allowances (Rs. 15,000) counterbalanced by savings on hospitals and dispensaries.

20. *Central India*—

	Medical	Public Health.
	Rs.	Rs.
1913-14, Actual Expenditure	1,32,000	Nil.
1922-23, Budget Estimate	30,800	1,000

The revised estimate for 1922-23 is Rs. 52,000 under Medical and the estimate proposed for 1923-24 is Rs. 55,710 and we make no recommendation.

21. *Bangalore*—

	Medical.	Public Health.
	Rs.	Rs.
1913-14, Actual Expenditure	97,000	75,000
1922-23, Budget Estimate	2,35,170	70,760

The provision for 1923-24 under Medical is estimated at Rs. 2,04,000, a saving of Rs. 31,000. This expenditure is met from the revenues of the Assigned Tract.

EXPENDITURE IN ENGLAND.

	Medical.	Public Health
	Rs.	Rs.
1913-14, Actual Expenditure	80,000	45,000
1922-23, Budget Estimate	5,58,000	96,000

22. The expenditure in 1922-23 is distributed as follows :—

<i>Medical.</i>		<i>Public Health</i>	
	Rs.		Rs.
Maintenance of Lunatics	6,000	Grants for medical research	12,000
Sundry items	18,000	Leave allowances	84,000
Leave allowances	1,14,000		
Stores	4,20,000		96,000
	<u>5,58,000</u>		

We have already recommended (paragraph 13) a reduction of Rs. 1,27,000 under stores in 1923-24 by elimination of the indent for the X-Ray Institute. We think that a further saving of at least Rs. 50,000 should be possible in medicines, etc., owing to falling prices.

CONCLUSIONS.

Having reviewed the expenditure under the heads Medical Services and Public Health we recommend that :—

- (1) the Medical and Public Health services be amalgamated ;
- (2) the grant to the Indian Research Fund Association be discontinued as they have now at their disposal an accumulated reserve of Rs. 33,26,000 derived from Government ;
- (3) Port quarantine regulations be revised on the lines of those obtaining in Great Britain ;
- (4) the total estimates for Medical Services and Public Health (including expenditure in England) be limited in 1923-24 to Rs. 26,44,000 and Rs. 8,53,000 respectively, saving Rs. 6,40,000 under the former and Rs. 7,79,000 under the latter head, and making a total saving for the combined departments of Rs. 14,19,000.

AGRICULTURE.

The estimate for 1922-23 compares with the revised estimate for 1921-22 and the actual expenditure for 1913-14 as follows:—

	Rs.
1913-14, Actual Expenditure	9,23,000
1921-22, Revised Estimates	21,52,000
1922-23, Budget Estimates	23,36,000

2. Under the Reforms Scheme, Agriculture (including Civil Veterinary Services) is a provincial subject in all the major provinces, and the above figures relate solely to expenditure on the research institutes at Pusa and Mukteswar, and in the minor administrations. The expenditure is subdivided under the main heads shown below:—

	1913-14	1921-22	1922-23
	Rs	Rs.	Rs.
PUSA INSTITUTE	5,47,000	9,83,000	11,19,000
MUKTESWAR INSTITUTE	2,03,000	7,25,000	7,17,000
MINOR ADMINISTRATIONS			
AGRICULTURE	1,54,000	1,49,000	1,67,000
VETERINARY		1,08,000	1,32,000
	9,04,000	19,65,000	21,85,000
EXPENDITURE IN ENGLAND AT Rs. 15 = £1	19,000	1,87,000	2,01,000
	9,23,000	21,52,000	23,36,000

3. *Pusa Institute*.—There has been a considerable development in the activities of this Institute since 1913-14 and various new functions have been added such as those of the Dairy Expert, Physiological Chemist, Indigo Research Cotton Committee and Sugar Bureau costing in all over Rs. 2,50,000 per annum.

The appointments of Imperial Dairy Expert and the Physiological Chemists were created about 2 years ago with a view to improving the milk supply and developing cattle breeding in India. It was frankly admitted, however, that under existing circumstances the appointment of a dairy expert could not be justified, as dairy farms are not available on which to produce milking pedigree stock or to provide technical training for those desiring to take up dairy farming. The principal functions performed by the dairy expert at the present time are the drawing up of schemes for Indian States, firms and private persons, and we are informed that many of these schemes have failed to fructify owing to inability to supply suitable stock or trained staff to take charge of the proposed undertakings.

4. It was represented to us that, unless funds could be provided for the development of the dairy industry or some of the Military dairy farms handed over to the Agricultural Department, the appointment of Dairy Expert should be abolished. We are of opinion, however, that the development of cattle breeding and the dairy industry should be encouraged we have discussed with the Commander-in-Chief the question of transferring some of the Military Dairy Farms to the Agricultural Department and he has agreed that two farms should be taken over as soon as the necessary arrangements can be made. We understand that this transfer will not involve any additional expense to Government or any increase in the price of the milk to Army hospitals or other consumers, and it is stated that no budget provision of any kind will be necessary as the realisations from the produce will be quite sufficient to work the farms at a profit. As a result of our discussions we think it should be possible to make the Dairy Farms, including the cost of the Dairy Expert and Physiological Chemist, self-supporting within a reasonable period and we

recommend that arrangements be made for two of the Military Farms to be transferred forthwith to the Agricultural Department and that the provision for the Dairy Expert and Physiological Chemist be limited to Rs. 40,000, saving Rs. 34,000.

5. We are informed that the two appointments of Indigo Research Chemist and Botanist costing Rs. 52,350 in 1922-23 have been terminated and a saving of this amount will automatically be effected in 1923-24.

6. The Central Cotton Committee is a purely advisory body recently established as a result of the recommendations of the Indian Cotton Committee. We are informed that it is proposed to levy a cess of two annas per bale of cotton consumed in the mills or exported from India to provide funds for the establishment of a Technological Laboratory in Bombay, for the conduct of spinning tests for Indian cottons, and for grants to the provinces for Agricultural Research under the direction of the Committee. It is anticipated that the proceeds of the cess, the imposition of which has been approved by Local Governments and commercial bodies, will fully pay the cost of the Central Cotton Committee and leave a surplus for its proposed activities. Under these circumstances no provision will be required for 1923-24 saving Rs. 79,160.

7. The Sugar Bureau has been established for about 4 years at Pusa on a temporary basis for the collection of materials in connection with the improvement of the sugar industry. It publishes statistics of the production and consumption of sugar in different parts of the world and the fluctuations in prices. It also conducts field experiments on a small scale. We recommend that the necessity for continuing the bureau costing Rs. 37,000 annually be examined.

8. We are informed that the Government of Bihar and Orissa contribute Rs. 1,400 annually towards the maintenance of the Hospital at Pusa. The total cost of the Medical Branch in 1922-23 was Rs. 20,930 and we ascertained that the number of indoor and outdoor patients treated in 1921-22 was 40,400 of whom 24,200 came from neighbouring villages in the Darbhanga and Muzaffarpur districts. Under these circumstances we are of opinion that the Local Government ought to be asked to increase their contribution.

9. The total staff of the Agricultural Adviser and Director has increased from 58 in 1913-14 to 107 required for 1922-23. We are informed that the additional staff consists of 15 clerks, 14 menials, 8 artists, transferred from temporary to permanent appointments, and 12 mechanics to attend to the Electric, Gas, and Ice Installations. We understand that the post of Assistant to the Agricultural Adviser is vacant and that it will not be filled in 1923-24 saving Rs. 6,600. We consider that other reductions in establishment should be effected to make a total saving of Rs. 10,000.

10. A special provision of Rs. 16,000 for the extension of the Research Institute was included in the 1922-23 Budget and, as this is a non-recurring charge, a corresponding saving will be effected in 1923-24. We are of opinion that reductions should be possible under supplies and services, Rs. 73,000, and Contingencies, including grain compensation, Rs. 36,000, and we recommend a reduction under these heads of Rs. 10,000, making a total saving in the Agricultural Adviser and Director's Department of Rs. 36,000.

11. In the remaining sections of the Institute we are informed that the Department are prepared to agree to the abolition of the following appointments some of which are already vacant :—

	Saving, Rs
Supernumerary Entomologist	6,000
Assistant Bacteriologist	6,000
Supernumerary Agricultural Chemist	11,400
Supernumerary Mycologist	5,800
Supernumerary Agriculturist	6,000
TOTAL	35,200

In addition to these reductions we are of opinion that considerable savings should be possible in the expenditure on Supplies and Services and

Contingencies on account of falling prices and we recommend that the provision be reduced by at least Rs. 15,000.

12. The Revenue and Agriculture Department has, at our request, consulted Local Governments as to the value of the activities of the Pusa Institute to the provinces and whether they would be prepared to contribute to the future cost of the Institute. There is no doubt that the Institute is at present performing certain services the cost of which should not fall on central revenues such as the training of students sent to Pusa by Local Governments. We consider that in such cases reasonable charges should be made.

13. *Muktesar Institute*.—This Institute mainly exists for the preparation of vaccines and sera and the increased expenditure since 1913-14 is mainly due to increased production of these commodities. Research work is also carried out at the Institute to a limited extent and training is given to officers of the Army and Civil Veterinary Service and to candidates for the higher Service in India.

The receipts from the sale of sera and other items in 1922-23 were estimated at Rs. 61,300, but we understand that this estimate is not likely to be realised. We are informed by the Revenue and Agriculture Department that Muktesar could be made to fully pay its way and while we recognise the importance of extending the protection against disease which is afforded by the use of vaccines and sera, we do not think there is any justification for selling these products at an uneconomic price. We recommend therefore that steps be taken to place the Institute on a self-supporting basis for 1923-24.

14. *Minor Administrations*.—The estimated expenditure in the Minor Administrations in 1922-23 may be analysed as follows.—

	Rs.
North-West Frontier	1,27,000
Baluchistan	87,000
Delhi	23,120
Coorg	15,770
Ajmer	30,910
	2,96,800

The expenditure on Supplies and Services Rs. 19,000 and on Contingencies Rs. 45,000 in the North-West Frontier Province should, we think, be reduced by Rs. 7,000 on account of falling prices and we recommend the provision for 1923-24 be limited to Rs. 1,20,000.

With regard to Baluchistan we are informed that although Rs. 87,000 was provided for 1922-23 the revised estimate has been reduced to Rs. 65,910. Additional expenditure of Rs. 7,370 will be required in 1923-24 on account of the separation of the Baluchistan Veterinary service from that of Sind and Rajputana, and we recommend the total provision for 1923-24 be limited to Rs. 75,000, saving Rs. 12,000.

We understand that a total reduction of Rs. 17,560 is being effected for 1923-24 in the estimates for Delhi, Coorg and Ajmer; and we make no recommendations.

15. The total reductions which we have indicated including those suggested by the Department amount to Rs. 2,88,000. We recommend therefore that the total provision for Agriculture in 1923-24 be limited to Rs. 20,50,000 a reduction of Rs. 2,86,000.

CONCLUSIONS.

Having reviewed the expenditure on Agriculture we recommend that:—

- (1) Two of the Military Dairy Farms be transferred forthwith to the Agriculture Department;
- (2) The necessity for retaining the sugar bureau be examined;
- (3) The Muktesar Institute be placed upon a self-supporting basis; and
- (4) The Budget estimate for 1923-24 be limited to Rs. 20,50,000, a reduction of Rs. 2,86,000.

INDUSTRIES.

The estimate for 1922-23 compares with the revised estimate for 1921-22 and the actual expenditure for 1913-14 as follows :—

	Rs.
1913-14, Actual Expenditure	Nil.
1921-22, Revised Estimate	4,37,000
1922-23, Budget Estimate	1,59,000

2. The development of industries is a provincial transferred subject, except in cases where such development by a central authority is declared by order of the Governor General in Council, made after consultation with the Local Government or Local Governments concerned, to be expedient in the public interest. We are informed that no such declaration has been made in the case of any industry.

3. The provision of Rs. 1,59,000 made in the budget of 1922-23 has been reduced in the revised estimates to Rs. 1,38,000 made up as follows :—

	Rs.
Acetone Factory, Nasik	41,000
Grant to Dug Manufacture Committee	5,000
School of Mines and Geology	15,000
Froth flotation process for working Indian coal	6,000
Expenditure in India on the British Empire Exhibition	22,000
Expenditure in minor administrations	3,000
Expenditure in England, mainly leave allowances	46,000
	1,38,000

4. The expenditure on the Acetone Factory is a terminal charge and will not be repeated in 1923-24, as the Factory has been sold to the Government of Bombay for use as a distillery. We understand that the expenditure in England on leave allowances is due to leave granted to the staff of the Acetone Factory on the termination of their engagements and that this provision also will not be required. We are also informed that the provision for the froth flotation process for working Indian coal is a non-recurring grant.

5. *The School of Mines and Geology.*—This is a new scheme for training qualified mining engineers and managers. The initial cost of the school is at present estimated at Rs. 14,15,000, and the recurring annual cost at about Rs. 2,00,000, against which it is expected that there will be some receipts on account of fees for tuition and rents for hostel accommodation. Apart from the provision of Rs. 15,000 under 'Industries' a sum of Rs. 1,00,000 for the commencement of construction appears in the 'Civil Works' estimates for 1922-23. We recognise that an institution of this kind is *per se* desirable, but, in view of the present financial conditions, we recommend that the scheme be postponed for three years; if prices continue to fall in the meantime, it may then be possible to carry through the scheme more economically than at present.

6. If these items be omitted, the expenditure required under this head will be about Rs. 30,000 only, including provision of Rs. 22,000 in the revised estimates for 1922-23 for the British Empire Exhibition, for which we understand that increased provision will be required in 1923-24.

CONCLUSIONS.

Having reviewed the expenditure under the head 'Industries', we recommend that :—

- (1) the construction of the School of Mines and Geology be postponed for three years; and
- (2) expenditure in 1923-24 be limited to Rs. 30,000, a saving of Rs. 1,29,000, apart from such new expenditure as it may be necessary to incur in connection with the British Empire Exhibition.

CIVIL AVIATION.

The estimate for 1922-23 compares with the revised estimate for 1921-22 and the actual expenditure in 1913-14 as follows:—

	Rs.
1913-14, Actual Expenditure	<i>Nil</i>
1921-22, Revised Estimate	1,81,000
1922-23, Budget Estimate	48,000

2 This grant includes provision for a Chief Inspector and his establishment, costing with travelling allowances about Rs. 22,500. The rules made by the Indian Aircraft Act contemplate the employment by Government of an officer to examine aeroplanes, pilots, and ground engineers before granting licenses and certificates, and also to examine landing sites and to enquire into accidents. As a result, however, of the inability of Government to provide funds for the development of aviation and of the absence of private enterprise, the number of occasions on which this officer's services are required are very limited. We are informed that during 1921-22 the Chief Inspector carried out the following work which may be said to require specialised knowledge:—

12 certificates of airworthiness
11 periodic inspections of machines
12 examinations of ground engineers.
3 examinations of pilots.
31 examinations of landing sites.
2 inquiries into accidents

3. We do not consider that this amount of work justifies the retention of a full time officer and we recommend that, until aviation further develops, the duties should be entrusted to a qualified officer of the Air Force to whom a suitable inspection fee or allowance might be paid. About Rs. 13,000 has been provided in the current year's estimates for the construction or upkeep of aerodromes. In view of the limited use made of these aerodromes, we think that the provision for 1923-24 should be reduced to Rs. 6,000.

4. After the war 100 aeroplanes were given to the Government of India by the Home Government. These aeroplanes were subsequently presented to Local Governments, Indian Princes and others, but a certain number have been returned, and the Department proposes that Rs. 5,000 should be provided in 1923-24 for their storage and redistribution. We consider that these aeroplanes can now be of little value and that they should be made over to the Air Force for disposal, thereby relieving Government of the expense of upkeep and maintenance, and that no provision on this account should be made in the coming year's budget.

5. The Government of India have accepted liability for half the total cost of the capital works undertaken on the Cairo-Karachi route, subject to a limit of £850, and for recurring expenditure on the maintenance of the route, subject to a limit of £400 per annum. It is not certain when this expenditure will be incurred, and, unless it is anticipated that this liability will accrue next year, we think that the budget for 1923-24 should be reduced to Rs. 15,000 including provision for fees as suggested above.

6. When Civil Aviation further develops, it will be necessary in the future to increase the grant under this head.

MISCELLANEOUS DEPARTMENTS.

The total estimates for 1923-23 compare with the revised estimates for 1921-22 and the actual expenditure for 1913-14 as follows:—

	Rs.
1913-14, Actual Expenditure	5,72,000
1921-22, Revised Estimate	43,61,000
1922-23, Budget Estimate	26,71,000

This expenditure is divided under the main heads shown below :—

Head.	1913-14.	1921-22	1922-23.
COMMERCIAL INTELLIGENCE . . .	1,51,000	3,25,000	4,80,000
CENSUS	41,000	27,40,000	5,22,000
EMIGRATION,	1,05,000	1,32,000	1,66,000
JOINT STOCK COMPANIES	<i>Nil*</i>	1,84,000	1,30,000
OTHER MISCELLANEOUS DEPART- MENTS	2,51,000	7,52,000	10,63,000
EXPENDITURE IN ENGLAND (Rs. 15=£1)	5,48,000	40,83,000	23,61,000
	24,000	2,78,000	3,10,000
TOTAL	5,72,000	43,61,000	26,71,000

* Not separately shown in 1913-14

2. The table shows that apart from special expenditure of a non-recurring character such as that connected with the decennial census there has been a considerable increase in activity in most of the departments. We deal seriatim with the main heads under which the account is set out above :—

COMMERCIAL INTELLIGENCE DEPARTMENT

	Rs.
1913-14, Actual Expenditure	1,51,000
1921-22, Revised Estimate	3,25,000
1922-23, Budget Estimate	4,80,000

3. The Commercial Intelligence Department was sub-divided into two separate organizations in April 1914, namely, the Bureau of Commercial Intelligence and the Directorate of Statistics, with which we will deal separately.

4. Bureau of Commercial Intelligence—

	Rs.
1921-22, Revised Estimate	1,80,800
1922-23, Budget Estimate	3,16,000

This Department was, no doubt, useful during the war when the Director had various duties to perform in connection with the supply of munitions and when it was considered inexpedient to publish any information relating to the movement of trade, but it is questionable whether it is now necessary to maintain an establishment on this scale for the purpose. In view of the necessity for retrenchment, we are informed that certain existing or contemplated activities of the department have been abandoned which will effect a saving in the current year's budget of Rs. 1,08,000 and of Rs. 1,59,000 in 1923-24. Whether Indian trade benefits to an extent warranting the expenditure which will still remain is open to doubt, and we recommend that further economies should be effected, increasing the saving to Rs. 2,09,000.

5. Directorate of Statistics—

	Rs.
1921-22, Revised Estimate	1,44,200
1922-23, Budget Estimate	1,64,000

This Department has been reamalgamated with the Bureau of Commercial Intelligence and the status of the officer in charge has been reduced, saving Rs. 13,000 annually.

6. Even with these reductions the cost of the department will be much higher than its pre-war level, and we consider that there is room for further economy. In our opinion, the various bulletins at present issued and the weekly cable to London might well be discontinued saving Rs. 7,300. Further, we think that many of the statistical publications of the department contain a large mass of detail which could be eliminated without impairing their utility. We suggest that the whole of these publications should be carefully reviewed, and think that, if this is done, substantial economy can be effected in the number and cost of the compiling staff and in stationery and printing.

In view of all the circumstances we are of the opinion that the budget of the combined department should be reduced to Rs. 2,00,000, a reduction of Rs. 2,80,000 on the budget for 1922-23.

CENSUS.

	Rs.
1913-14, Actual Expenditure	41,000
1921-22, Revised Estimate	27,40,000
1922-23, Budget Estimate	5,22,000

7. It is anticipated that the 1921 census work will be completed by June 1923, and that the provision for 1923-24 should not exceed Rs. 1,00,000, a reduction of Rs. 4,22,000.

EMIGRATION.

	Rs.
1913-14, Actual Expenditure	1,05,000
1921-22, Revised Estimate	1,32,000
1922-23, Budget Estimate	1,66,000

8. The estimate for 1922-23 includes Rs. 1,35,000 for internal, and Rs. 31,000 for external, emigration. It is proposed under the former head to effect economies which will in 1923-24 reduce the demand by about Rs. 58,000 in addition to which about Rs. 8,000 will be recoverable on diet issued to patients. In the case of external emigration, fees in 1922-23 were estimated at Rs. 17,000 and we understand that it is intended, under the Emigration Act, 1922, to fix the fees at a figure which will fully cover the entire cost of administration. As a result of these modifications, there should in 1923-24 be a saving in expenditure of Rs. 58,000 while the receipts will be increased by Rs. 22,000.

JOINT STOCK COMPANIES.

	Expenditure.	Receipts.
	Rs.	Rs.
1913-14	Separate figures not available.	
1921-22, Revised Estimate	1,34,000	2,71,000
1922-23, Budget Estimate	1,30,000	2,61,000

9. The functions of this department are statutory under the Indian Companies Act, 1913, and as the expenditure is fully covered by receipts, we make no recommendations.

OTHER MISCELLANEOUS DEPARTMENTS.

	Rs.
1913-14, Actual Expenditure	2,51,000
1921-22, Revised Estimate	7,52,000
1922-23, Budget Estimate	10,63,000

Department.	1913-14.	1921-22	1922-23.
	Rs	Rs.	Rs
Imperial Library	40,000	75,100	73,900
Board of Examiners	48,000	49,600	65,800
Indian War Memorial . . . . .	...	8,000	8,700
Actuary to Government of India	21,000	31,800	33,200
Explosives Department	83,000	77,400	1,04,600
Controller of Patents and Designs	40,000	51,600	67,500
Electrical Adviser to Government of India . . . . .	...	34,700	35,200
Metallurgical Inspectorate . . . . .	...	1,00,100	95,700
Superintendent Local Manufactures and Government Test House, Alipore . . . . .	...	1,35,000	1,79,800
Indian Stores Department . . . . .	..	1,10,700	3,83,600
Miscellaneous and minor administrations	19,000	78,000	15,000
TOTAL	2,51,000	7,52,000	10,63,000

10. We have no remarks to make with regard to the Indian War Memorial and the Actuary to the Government of India, or with regard to the departments of the Controller of Patents and Designs, the Metallurgical Inspectorate, and the Superintendent of Local Manufactures and Government Test House, Alipore, which are self-supporting.

11. *The Imperial Library*.—This important library affords valuable educational facilities to students, and appears to be increasingly used. The staff has been slightly increased and the pay of the librarian more than doubled. When the present incumbent retires we suggest that the pay of the appointment should be reconsidered; meanwhile we have no suggestion to make as to reduction, but the question of obtaining a contribution from the Bengal Government towards the cost of maintaining the library should be considered.

12. *Board of Examiners*.—We suggest that arrangements should be made for conducting the examination of civil candidates from the Provinces on the system in force in Bombay and Madras, where Oriental language examinations are conducted by local Boards and the examiners remunerated by fees for each candidate. Army and other Central Government candidates could then be examined by part time examiners. This would make it possible to abolish the Board of Examiners, saving Rs. 65,800, less the cost of fees for examiners, say Rs. 15,000, or a net saving of about Rs. 50,000.

13. *Explosives Department*.—We understand that in the current year savings of Rs. 15,000 will be effected under leave allowances and in the provision for increased pay of establishment. We do not suggest any reduction in this important department, but recommend that Local Governments and local bodies should be charged fees for inspection duties performed by the Explosives Department on their behalf.

14. *Electrical Adviser*.—This appointment has now been abolished, saving Rs. 35,000 in 1923-24.

15. *Indian Stores Department*.—We are informed that this Department has been recently constituted in order to encourage the development of the industrial resources of India and to effect economies by co-ordinating purchases for the Central and Provincial Governments, thus eliminating competition between Governments and Departments. At present its activities are confined to the purchase of textiles for the Army Department and to the control of the Metallurgical Inspectorate and of the Superintendent, Local Manufactures and Government Test House, Alipore. We understand, however, that it is contemplated gradually to extend the organization to enable it to undertake the purchase and inspection of various important classes of stores including cement, oils, paints, chemicals, textiles, leather goods, hardware, and engineering and other stores, and estimates have been placed before us for an establishment costing Rs. 24 lakhs annually. It is proposed to cover the cost by a charge of 2 per cent. for purchase and inspection and 1 per cent. for inspection only, it being assumed that the value of the annual purchases by the department will amount to about Rs. 7½ crores and of the goods inspected to about Rs. 15 crores. It is extremely doubtful whether Local Governments will use this organization and the United Provinces have in fact already set up a separate stores department. In view of the large turnover assumed the proposed charges appear to us to be excessive. A system of central purchase may have theoretical advantages, but we recommend that no provision be made for further expansion of the department until it has been ascertained that the provinces collectively are prepared to utilize it for their transactions and that such expansion will be financially justified. The present establishment has been framed with a view to the expansion of the department's activities and is now costing about Rs. 4,00,000 annually. We recommend that the provision be reduced to Rs. 3,00,000, saving Rs. 83,000.

16. *Minor Administrations*.—This expenditure relates mainly to the compilation of provincial trade registration statistics, which we consider might be discontinued, saving Rs. 15,000.

Expenditure in England.

	Rs.
1913-14, Actual Expenditure	24,000
1921-22, Revised Estimate	2,78,000
1922-23, Budget Estimate	3,10,000

17. This expenditure may be subdivided as follows, the amounts being shown in sterling :—

	1913-14.	1921-22	1922-23.
	£	£	£
Indian Trade Commissioner, London . . .	...	9,500	9,700
Indian Trade Commissioner, East Africa . .	...	400	1,500
Leave allowances	...	1,400	2,600
Sundry items including stores for Superintendent of Local Manufactures and Metallurgical Inspectorate.	1,600	7,200	8,900
TOTAL	1,600	18,500	20,700

18. *Indian Trade Commissioner in London.*—The appointment of Indian Trade Commissioner was created during the war, the first holder taking up his duties in 1917-18 at an office in the City. When the appointment of High Commissioner for India was created the Indian Trade Commissioner was placed under his control. We consider that, in present financial circumstances, it is not justifiable to retain a separate office in the City and that the necessary duties could be more economically carried out by transferring them to the High Commissioner. We believe that, in that case, the cost of the additional establishment required in the High Commissioner's office could be limited to £2,000 and we recommend that the separate appointment of Trade Commissioner be abolished, saving £7,700.

19. The provision of £6,900 for sundry items includes provision for new machinery and other non-recurring expenditure and we recommend a reduction of £3,000.

CONCLUSIONS.

Having reviewed the expenditure under this head we recommend that—

- (1) including the saving proposed by the Department the expenditure of the Commercial Intelligence Department be reduced by Rs. 2,80,000;
- (2) the provision for the completion of the 1921 census be limited to Rs. 1,00,000;
- (3) the fees for external emigration be fixed at the level necessary to cover the full cost of administration, and that the expenditure on internal emigration be reduced by Rs. 58,000 as proposed by the Department;
- (4) the Board of Examiners be abolished, saving Rs. 50,000;
- (5) fees be charged to local Governments and local bodies for inspections carried out by the Explosives Department on their behalf and that the budget of the Department in 1923-24 be limited to Rs. 89,000;
- (6) the expansion of the Indian Stores Department be postponed and a reduction of Rs. 83,000 effected;
- (7) the compilation of provincial trade statistics in the minor administrations be abolished, saving about Rs. 15,000;
- (8) the appointment of Indian Trade Commissioner, London, be abolished, saving Rs. 1,15,000 and a reduction of Rs. 45,000 be effected in other expenditure in England; and
- (9) the budget estimate for 1923-24 for the miscellaneous departments be limited to Rs. 15,53,000, a reduction of Rs. 11,18,000.

PART VII.

REVENUE COLLECTING SERVICES.

CUSTOMS.

The estimates for expenditure and receipts in 1922-23 (including a supplementary estimate of Rs 4,04,000) compare with the revised estimates for 1921-22 and the actual expenditure and receipts in 1913-14 as follows :—

	Expenditure.	Receipts.
	Rs.	Rs.
1913-14, Actuals	41,34,000	11,13,78,000
1921-22, Revised Estimate	70,43,000	34,60,14,000
1922-23, Budget Estimate	72,74,000	45,41,84,000

2. The growth in expenditure since 1913-14 is mainly due to increases in pay, though there have also been some additions to establishments. From the information supplied to us it appears that there has been a falling off in trade since 1913-14, but the large enhancements in the tariff and the differentiations made between various classes of goods have not merely increased the incentives to smuggling, but have also added to the complexities of customs administration. Mainly as the result of the growth of the revenue the percentage of the cost of collection to receipts has fallen from 3.7 in 1913-14 to 1.6 in 1922-23.

CONCLUSION.

If the recommendations made in paragraph 19 of our report on General Administration are adopted, there should be a saving of Rs. 47,000 on account of the cost of the post of Commissioner of Customs, Bombay. Having regard to the importance of maintaining the revenue we do not recommend any further reduction. At the same time we think that the strength and pay of the staffs at the various Customs Houses should be examined with a view to possible economies.

TAXES ON INCOME.

The estimates for expenditure and receipts in 1922-23 compare with the revised estimates for 1921-22 and the actual expenditure and receipts in 1913-14 as follows :—

	Expenditure.	Receipts.
	Rs.	Rs.
1913-14, Actuals	4,69,000	2,90,52,000
1921-22, Revised Estimate	21,52,000	21,11,99,000
1922-23, Budget Estimate	47,01,000	22,11,89,000

2. Since 1913-14 the expenditure has increased ten-fold and the receipts about eight-fold. Prior to the Reforms, income-tax was a "divided" head, the cost of assessment and the proceeds of the tax being shared between the Central Government and the Provinces. The figures for 1913-14 represent the total expenditure and collections whether Provincial or Central. In 1921-22 the Provincial Governments received an assignment of 3 pies on every additional rupee of income assessed in the Provinces in excess of the amount assessed in the year 1920-21 and paid a quarter share of the cost of collection. This arrangement was slightly modified in 1922-23, when the Central Government undertook to pay the whole cost of collection. The figures in the above estimates for these two years show the net expenditure and receipts

attributable to the Central Government. The following statement shows the total expenditure and receipts adjusted to include the share of the Provinces :—

	Expenditure.	Receipts.
	Rs.	Rs.
1913-14	4,69,000	2,90,52,000
1921-22	28,20,000	21,32,90,000
1922-23	47,01,000	22,33,11,000

3. We understand that, until recently, except in the Presidency towns and a few other large cities, the assessment and collection of the income-tax were entirely in the hands of the ordinary revenue staff, the only items shown as expenditure debitable to income-tax being the expenditure on special whole-time staffs where employed. With the successive enhancements in the rates of income-tax, improvements in the principles and methods of assessment and the separation of Provincial and Central interests under the Reforms, it became necessary to reorganise throughout the existing establishments for the assessment and collection of the taxes on income. The policy adopted was to create all over India a separate income-tax department, and schemes to give effect to this policy are now in process of introduction. A saving of Rs 2,27,000 on the budget grant of the current year is anticipated, but it has been represented to us that, so far from a reduction in expenditure on this head being possible, some further expansion of this department is desirable if serious leakage of revenue is to be avoided. Having regard to the importance of maintaining the Revenue we do not recommend any reduction in the estimates of this Department for 1923-24 as compared with the current year's estimates.

SALT.

The estimate for 1922-23 compares with the revised estimate for 1921-22 and the actual receipts and expenditure for 1913-14 as follows :—

	Expenditure.	Receipts.
	Rs.	Rs.
1913-14, Actuals	92,52,000	5,16,79,000
1921-22, Revised Estimate	1,59,62,000	6,41,62,000
1922-23, Budget Estimate	1,73,65,000	6,86,03,000

2. Approximately three-quarters of the total salt required by India is produced in the country, the principal sources being the sea salt factories in Madras and Bombay, — from which about two-thirds of the whole production in India is obtained,—the Salt Range in the Punjab, the Kohat mines, the Sambhar Lake and other salt sources in Rajputana, and the salt soil brine on the lesser Rann of Cutch.

3. The total receipts from salt include the revenue derived from excise and customs duty and may be analysed as follows :—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
Excise duty	3,27,33,000	4,16,87,000	4,54,67,000
Customs duty	1,49,55,000	1,82,04,000	1,84,64,000
Proceeds of sale of Government salt	31,53,000	44,23,000	52,28,000
Miscellaneous	8,08,000	—1,52,000	—5,56,000
TOTAL	5,16,49,000	6,41,62,000	6,86,03,000

The increased revenue from Excise and Customs duty is mainly due to the enhancement of the rates in 1916 from Re. 1 per maund to Rs. 1-4. The duty stood at Rs. 2-8 per maund from 1888 to 1903 when it was reduced to Rs. 2. In 1905 it was further reduced to Rs. 1-8 and in 1907 to Re 1, at which figure the duty remained until 1916.

4. The total expenditure is subdivided as shewn below :—

	1913-14, Actuals	1921-22, Revised Estimate	1922-23, Budget Estimate
	Rs	Rs	Rs.
NORTHERN INDIA	13,21,813	51,42,100	59,44,000
MADRAS	14,76,117	24,45,000	26,63,000
BOMBAY	22,39,336	41,20,000	43,18,000
BENGAL	3,14,935	3,00,000	3,19,000
BURMA	45,639	61,000	61,000
BIHAR AND ORISSA	69,954	76,000	76,000
ASSAM	903	...	...
	54,68,702	1,21,44,100	1,33,81,000
ASSIGNMENTS AND COMPENSATIONS	37,71,396	36,95,900	38,77,000
EXPENDITURE IN ENGLAND	12,000	1,22,000	1,07,000
TOTAL	92,52,098	1,59,62,000	1,73,65,000

We now deal seriatim with the expenditure incurred under the above heads.

NORTHERN INDIA.

	Rs.
1913-14, Actual Expenditure	13,21,813
1921-22, Revised Estimate	51,42,100
1922-23, Budget Estimate	59,44,000

5. The Northern India Salt Revenue Department works the Government mines in the Salt Range and conducts the manufacture of brine salt at the Rajputana Salt sources which are leased from the Jodhpur and Jaipur Darbars. It also supervises the working of the Kohat quarries and the small brine works at Sultanpur.

The quantity of salt produced in 1913-14 and 1921-22, the estimated cost of production and the sale value of the salt produced were as follows :—

Year.	Quantity	Estimated cost of production	Value at sale price
	maunds	Rs.	Rs
1913-14	13,000,262	13,02,364	23,69,008
1921 22	10,514,402	20,20,198	22,39,991
1922-23 (Original estimate)	15,400,000	30,24,382	33,68,750

6. This table shows that, whereas in 1913-14 the receipts exceeded the cost of production, including interest charges by Rs. 10,66,24, the estimated excess for 1922 23 was only Rs. 3,43,868. It is doubtful however, whether, the salt is really being sold at an economic price. The accounts of the Department are not prepared on a commercial basis and it is admitted that proper data are not at present available for ascertaining the actual cost of salt produced. We are informed that, in fixing the price of salt, proper provision is not made for interest on capital, depreciation or leave and pension charges and, further, that many charges are debited to "duty" which should properly be charged against the cost of salt. Particulars are not available of the total capital expended on salt works and the present practice is to include charges for interest at the rate of 4 per cent on the known portion of the capital expended up to the 31st March 1900 and at the rate of 3½ per cent. for subsequent expenditure. These rates are obviously inadequate.

We understand that the whole question of allocation of charges is now under investigation with a view to placing the accounts on a proper footing.

and we recommend that steps be taken to introduce commercial accounts at an early date and to fix the price of salt at the level necessary to ensure a return of at least $5\frac{1}{2}$ per cent. on the capital outlay.

7. The total production of salt in Northern India declined from 13,000,000 maunds in 1913-14 to 10,510,000 for 1921-22. We are informed that the output in the latter year was adversely affected by the low rainfall, which was only 9 inches compared with the average rainfall of 22 inches, and that a considerable increase in output is anticipated in the near future. The revised estimate for 1922-23 is 13,600,000 maunds and is expected that the output will be increased to 18,500,000 maunds in 1923-24.

8. The preliminary estimate for 1923-24 compares with the actual expenditure in 1913-14 and the estimate for 1922-23 as follows:—

	1913-14, Actuals.	1922-23, Budget estimate.	1923-24, Preliminary estimate.
	Rs.	Rs.	Rs.
Pay of officers	2,88,000	3,97,900	4,14,400
Pay of establishment	2,65,900	6,32,500	5,77,200
Allowances, etc.	51,300	1,52,900	1,48,400
Supplies and services	7,37,300	31,10,900	45,41,600
Contingencies	27,500	64,600	79,700
Works . . . . .	...	15,85,500	9,60,300
For rounding			—500
Total	13,21,800	59,44,300	67,21,000
Recoveries from sale of bags . . . . .	...	...	—19,80,000
Net expenditure	13,21,800	59,44,300	47,41,000

This table shows that the expenditure has increased from Rs. 13,21,800 in 1913-14 to Rs. 59,44,300 required for the current year and that a reduction of Rs. 12,03,800 is proposed for 1923-24.

The cost of pay and allowances has increased from Rs. 5,58,200 to Rs. 11,40,000 due to the general revision of pay and the employment of additional staff consequent upon the development of the salt sources at Sambhar Khewra and Warcha.

The provision of Rs. 1,48,400 for allowances in 1923-24 includes Rs. 26,000 for compensation for dearness of food which the Department agrees may be deleted. The expenditure under supplies and services is made up as follows:—

	1922-23.	1923-24.
	Rs.	Rs.
Manufacture of salt and excavation charges	17,86,930	21,07,800
Purchase of bags	10,00,000	20,00,000
Through traffic charges	3,03,000	4,06,000
Other petty supplies	20,800	27,800

The increased cost of manufacture and excavation charges is due to an estimated larger output and to a special provision of Rs. 55,000 for salt tubs and a new shed at Khewra. The expenditure of Rs. 20 lakhs on bags and of Rs. 4,06,000 for "Through Traffic charges" are wholly recoverable and need not therefore be considered. The provision of Rs. 27,800 for other petty supplies should, we consider, be susceptible of reduction on account of falling prices and we recommend the expenditure be limited to Rs. 21,000, saving Rs. 6,800.

The proposed provision for contingencies in 1923-24 is Rs. 15,000 in excess of the current year. Part of this increase is due to enhanced postal and telegraph charges but we are of opinion that the additional provision should be limited to Rs. 10,000, saving Rs. 5,000.

9. The proposed expenditure of Rs. 9,60,340 for Works in 1923-24 may be analysed as follows.—

Works in progress—		Rs.
Development of salt mines at Khewra and Warcha		2,07,000
Development of salt sources at Sambhar		4,93,250
Cost of acquisition of land at Khewra		9,000
Construction of quarters for officers, subordinate staff and labourers		50,000
Petty construction and repairs		1,00,000
New Works		1,01,090
	TOTAL	9,60,340

The total cost of the development and extension of the Khewra and Warcha mines is estimated at Rs. 18½ lakhs spread over 5 years and the first instalment of Rs. 4,20,700 was provided during the current year. It is estimated that this expenditure will enable the output to be increased from 400,000 to 600,000 maunds per mensem which will yield additional excise duty of Rs. 30 lakhs per annum, but we understand it will not be practicable to load and issue the full output until mechanical appliances are installed in the depôt. Under these circumstances we make no recommendation.

The provision of Rs. 4,93,250 for the development of salt sources at Sambhar is to complete a scheme for conserving the present supplies and to secure an additional average output of 4,000,000 maunds per annum. The provision for petty construction and repairs in 1922-23 was Rs. 96,100 and it is proposed to provide Rs. 1,00,000 for 1923-24. We consider that in view of the fall in prices which has taken place, the provision should not exceed Rs. 90,000, a reduction of Rs. 10,000 on the preliminary estimate.

Of the total provision of Rs. 1,01,090 for new works Rs. 60,000 is for quarters for staff, the remainder being for works which are regarded as essential.

The total reductions which we recommend above amount to Rs. 47,800 on the preliminary estimate for 1923-24, making with the economies already proposed, a total reduction of Rs. 13,50,800 compared with the budget estimate for 1922-23.

MADRAS.

	Rs.
1913-14, Actuals	14,76,117
1921-22, Revised Estimate	24,45,000
1922-23, Budget Estimate	26,63,000

10. The supplies of Government salt in Madras are obtained almost entirely under "Monopoly licenses" or from holders of "modified excise licenses" and the price paid is fixed at a level which allows a liberal profit after defraying the cost of production.

The preliminary estimate for 1923-24 compare with the actual expenditure in 1913-14 and the Budget estimate for 1922-23 as follows:—

	1913-14	1922-23, Estimate.	1923-24, Preliminary estimate
	Rs.	Rs.	Rs.
Excise licensees works	23,911	70,000	45,000
Establishment charges	9,08,843	14,95,000	17,47,000
Salt purchase and freight	5,22,976	10,65,000	9,84,000
Contingencies	8,387	28,000	16,000
TOTAL	14,76,117	26,58,000	25,22,000

The Government of India pay one-third of the actual expenditure incurred for salaries, establishments and contingencies by the combined Salt and Abkari

Departments of the Madras Government. We understand that the question whether the Central Government should take over the administration of salt in Madras is now under consideration and we make no recommendation.

BOMBAY.

	Rs.
1913-14, Actual Expenditure	21,39,336
1921 22, Revised Estimate	41,20,000
1922-23, Budget Estimate	43,18,000

11 Two kinds of salt are manufactured in Bombay, *viz.*, "Sea Salt" and "Baragra Salt". Sea salt is manufactured under license from Government by private manufacturers who either own the works or in a very few cases lease them from Government and it is also manufactured departmentally at two Government factories. Baragra salt is manufactured at the Pritchard Salt Works and at the Mauripur works at Sind, both of which are worked departmentally

The preliminary estimate for 1923-24 is Rs 38,72,000, a reduction of Rs. 4,46,000 on the Budget estimate for 1922-23. The expenditure is subdivided under main heads as shown below :—

	1913-14, Actuals	1922-23, Budget.	1923-24, Estimate.
	Rs	Rs.	Rs.
Pay of Officers	1,39,400	2,36,508	2,41,920
Pay of Establishment	11,65,900	25,11,786	31,68,630
Allowances, etc.	1,35,900	9,10,964	6,61,200
Supplies and services	3,3,900	1,31,388	2,24,440
Contingencies	64,400	4,42,899	2,86,180
Works	23,500	3,82,000	74,850
Salt purchase and freight	5,58,000	13,10,000	13,62,000
TOTAL	24,14,000	59,31,545	50,93,120
<i>Deduct</i> - Share of Excise and Customs Establishment, etc.	1,75,000	16,18,545	22,21,120
TOTAL	22,39,000	43,13,000	38,72,000

12. The total cost of pay and allowances has increased from Rs. 14,41,200 in 1913-14 to Rs. 40,71,750 required for 1923-24. These figures are however not strictly comparable as in 1913-14 there was a separate staff in charge of salt and land customs whereas to-day the salt and excise establishments are amalgamated and the Central Government pay a share of the cost of the combined departments, the balance being recovered from the Bombay Government. The cost of establishment appears excessive compared with Madras where practically the same quantity of salt is produced. We understand that the Bombay Government have under consideration proposals for effecting a considerable reduction, and if this is not effected we recommend that the possibility of the Central Government taking over the administration of Salt and Customs operations be explored.

We are informed that the provision of Rs. 1,31,388 for supplies and services in 1922-23 has been largely exceeded, the revised estimate being Rs. 2,42,000. We consider that the provision for 1923-24 should not exceed this figure, a reduction of Rs. 56,000 on the preliminary estimate for that year.

The provision of Rs. 74,850 for works includes Rs. 37,650 for the amelioration of the condition of the salt workers but the expenditure is recovered in the selling price of the salt. The remaining Rs. 37,200 is for the completion of works now being executed by the Bombay, Baroda and Central India Railway at the Pritchard Salt Works and is not susceptible of reduction. The reduction of Rs. 56,000 in the preliminary estimate for 1923-24 will make a total saving of Rs. 5,02,000 compared with Budget estimate for 1922-23.

BENGAL.

	Rs.
1913-14, Actual Expenditure	3,14,935
1921-22, Revised Estimate	3,00,000
1922-23, Budget Estimate	3,19,000

13. The province of Bengal depends entirely on imported salt. The above figures include about Rs 2 lakhs representing the Central Government's share of the combined Salt and Excise Departments fixed on the basis of the actual expenditure in 1911-12. The preliminary estimate for 1923-24 has been fixed at Rs. 2,90,000, a reduction of Rs 29,000 and we understand that no further reduction is possible.

BIHAR AND ORISSA.

	Rs.
1913-14, Actual Expenditure	69,954
1921-22, Revised Estimate	76,000
1922-23, Budget Estimate	76,000

14. The expenditure of Rs. 76,000 represents a lump sum payment made by the Central Government on account of its share of the cost of the combined salt and excise establishment in Orissa. This contribution was fixed on the basis of the cost of the Salt department in 1916-17 and is not susceptible of reduction.

BURMA.

	Rs.
1913-14, Actual Expenditure	45,639
1921-22, Revised Estimate	61,000
1922-23, Budget Estimate	61,000

15. This expenditure represents the amount payable to the Provincial Government for the Central Government's share of the combined Salt and Excise establishment. The revised estimate for the current year is Rs. 74,000 and the preliminary estimate for 1923-24 has been fixed at Rs. 63,000. We make no recommendation.

ASSIGNMENTS AND COMPENSATIONS.

	Rs.
1913-14, Actual Expenditure	37,71,376
1921-22, Revised Estimate	36,95,900
1922-23, Budget Estimate	38,77,000

16. The expenditure under this heading mainly represents payments made to Indian States under agreements or treaties which are not susceptible of reduction.

ENGLISH EXPENDITURE.

	Rs.
1913-14, Actual Expenditure	12,000
1921-22, Revised Estimate	1,22,000
1922-23, Budget Estimate	1,07,000

17. This expenditure represents leave allowances and small purchases of stores. The preliminary estimate for 1923-24 has been fixed at Rs. 84,000, a reduction of Rs. 23,000.

GENERAL.

18. The preliminary estimate for 1923-24 shows a reduction of Rs. 18,12,000 compared with the budget estimate for 1922-23 and we recommend further reductions of Rs. 1,03,000, making a total saving of Rs. 19,15,000.

CONCLUSIONS.

Having reviewed the expenditure on "Salt" we recommend that:—

- (1) the accounts of the Government Salt Manufacturing Departments be compiled on a commercial basis; and
- (2) the Budget estimate for 1923-24 be limited to Rs. 1,54,60,000, a reduction of Rs. 19,15,000 compared with the budget estimate for 1922-23.

OPIUM.

The estimates for 1922-23 compare with the revised estimates for 1921-22 and the actual expenditure and receipts in 1913-14 as follows :—

	Expenditure.	Receipts.
	Rs	Rs.
1913-14, Actuals	1,52,41,000	2,43,35,000
1921-22, Revised Estimates	1,87,74,000	3,03,24,000
1922-23, Budget Estimates	1,86,53,000	3,09,30,000

2. The expenditure is subdivided under the main heads shown below :—

Head.	1913-14	1921-22	1922-23
	Rs	Rs	Rs.
Superintendence	63,543	1,09,100	1,09,900
Opium factory	4,14,745	4,61,500	5,36,500
District Staff	7,02,104	11,23,000	12,07,500
Purchase of opium and payments to cultivators	1,99,32,608	1,68,28,600	1,67,57,800
Opium research laboratory		41,800	38,300
Opium compensations	54,000	54,000	54,000
Miscellaneous	54,000	35,000	36,000
Minor administrations	8,000	23,000	16,000
Deduct—Lump sum made by Assembly . . . . .	...	...	—2,00,000
Expenditure in England	1,52,29,000 12,000	1,86,76,000 98,000	1,85,56,000 97,000
TOTAL	1,52,41,000	1,87,74,000	1,86,53,000

3. *Opium Factory.*—The appointment of Managing Director, costing Rs. 18,000, did not exist in 1913-14, but was introduced during the war for a special purpose, namely, to develop the production of opium alkaloids, for which at that time there was a considerable demand. We understand that this demand has now practically disappeared and we recommend that the appointment be abolished.

4. *Purchases of Opium, etc.*—The bulk of the expenditure incurred represents the cost of the opium purchased from cultivators. This expenditure has increased greatly in recent years owing to the competition of other crops as the result of high prices. Prices are now falling and we recommend that the position be carefully watched with a view to lowering the price payable to cultivators as soon as this can be done without risk of diminishing the area cultivated below actual requirements.

5. *Expenditure in England.*—This expenditure represents leave allowances and a small provision for the purchase of stores.

6. *Estimates for 1923-24.*—We understand that the provision contemplated under the opium head in 1923-24 is Rs. 1,66,73,000, a reduction of Rs. 19,80,000 on the estimate for 1922-23. This reduction is due mainly to smaller provision for the purchase of opium and payments to cultivators, though it also allows for economies of about Rs. 50,000 effected or proposed by the Department. Allowing for the abolition of the appointment of Managing Director, there will thus be a saving of approximately Rs. 20 lakhs in 1923-24.

The revenue from opium includes—

- (a) the price paid by the Local Governments for the excise opium supplied to them and
- (b) the proceeds of the sales of provision opium.

We are informed that the most recent estimate of the revenue in 1922-23 is Rs. 386 lakhs, an increase of about Rs. 75 lakhs over the budget estimate, and that receipts of Rs. 393 lakhs are anticipated in 1923-24.

CONCLUSION.

Having reviewed the expenditure under the opium head, we recommend that the possibility of reducing the price paid to cultivators for opium be carefully watched with a view to reduction. We are informed that there will be a reduction of about Rs. 20 lakhs in expenditure in 1923-24, and, in view of the importance of safeguarding this important source of revenue, we recommend no further reduction.

LAND REVENUE.

The total estimates for expenditure and receipts in 1922-23 compare with the revised estimates for 1921-22 and the actual expenditure and receipts in 1913-14 as follows :—

	Expenditure. Rs.	Receipts. Rs.
1913-14, Actuals	11,94,000	41,94,000
1921-22, Revised Estimate	15,14,000	36,66,000
1922-23, Budget Estimate	15,64,000	43,93,000

Under the Reforms Scheme, Land Revenue is an entirely provincial head and the above figures for expenditure relate solely to certain survey expenditure and to expenditure in the minor administrations directly under the control of the Central Government.

2. The figures may be analysed as follows :—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
SURVEY EXPENDITURE	1,11,000	1,62,000	1,48,000
N-W. F PROVINCE	4,97,000	4,85,000	5,26,000
BALUCHISTAN	2,45,000	3,88,000	3,61,000
DELHI	47,000	77,750	71,950
COORG	1,24,000	2,04,010	2,11,280
AMJER-MERWARA	1,15,000	1,74,800	1,71,670
OTHER MINOR ADMINISTRATIONS	30,000	41,440	44,100
	11,69,000	14,83,000	15,84,000
EXPENDITURE IN ENGLAND (Rs. 15 =£1)	25,000	31,000	30,000
TOTAL	11,94,000	15,14,000	15,64,000

We deal seriatim with the main heads under which the account is set out.

SURVEY EXPENDITURE.

	Rs.
1913-14, Actual Expenditure	1,11,000
1921-22, Revised Estimate	1,62,000
1922-23, Budget Estimate	1,48,000

3. This expenditure represents a book adjustment in respect of a proportion of the headquarters charges of the Survey of India. It is proposed to relieve the Land Revenue estimates of this debit in future years, and, though the amount will be included in the Survey of India Budget, there will be a reduction of Rs. 1,48,000 in the Land Revenue estimates.

NORTH-WEST FRONTIER PROVINCE.

	Expenditure Rs.	Receipts. Rs.
1913-14, Actuals	4,97,000	20,80,000
1921-22, Revised Estimates	4,85,000	16,07,000
1922-23, Budget Estimates	5,26,000	22,45,000

4. There has been a re-classification of expenditure since 1913-14, and the above figures are therefore not strictly comparable. So far as we can ascertain the approximate expenditure in 1913-14, corresponding to the figures shown for the later years was Rs 2,38,000 only. We are informed that the local Retrenchment Committee, appointed to examine the expenditure in this province, have recommended a reduction in establishment involving an annual saving of Rs. 1,04,000 and that their recommendations have been accepted by the Chief Commissioner. In addition, the following reductions on the current year's estimates should be effected in 1923-24 :—

	Rs.
Abolition of temporary establishment, Kohat, about	2,000
Survey expenditure unspent from the current year's budget about	30,000
Field allowances, over-estimated in the current year's budget	21,000
Concessions to Patwaris, surrendered in the current year	11,000
Total	64,000

The total savings indicated thus amount to Rs. 1,68,000 and we consider that the estimate for 1923-24 should not exceed Rs. 3,58,000.

BALUCHISTAN.

	Expenditure.	Receipts.
	Rs.	Rs.
1913-14, Actuals	2,45,000	10,37,000
1921-22, Revised Estimates	3,38,000	9,04,000
1922-23, Budget Estimates	3,61,000	9,87,000

5. The local Retrenchment Committee appointed to investigate expenditure in Baluchistan have recommended reductions of establishment saving Rs. 25,000, including Rs. 10,000 in travelling allowances to tahsildars. We understand that a further reduction in travelling allowances and other contingent expenditure will result from more settled conditions on the border, and therefore recommend that the estimate for next year should not exceed Rs. 3,30,000, a reduction of Rs. 31,000.

DELHI.

	Expenditure.	Receipts.
	Rs.	Rs.
1913-14, Actuals	47,000	3,53,000
1921-22, Revised Estimates	77,750	3,58,000
1922-23, Budget Estimates	71,950	3,56,850

6. The increase in expenditure since 1913-14 is almost entirely due to revision of pay of the establishment on the Punjab basis and, apart from the reduction of Rs. 2,000 proposed by the Local Administration, we make no recommendation.

COORG.

	Expenditure.	Receipts.
	Rs.	Rs.
1913-14, Actuals	1,24,000	3,60,000
1921-22, Revised Estimates	2,04,000	3,74,600
1922-23, Budget Estimates	2,11,250	3,79,350

7. As the result of a special investigation made into expenditure in Coorg, economies of Rs. 47,000 have been indicated. We consider that effect should be given to these recommendations in 1923-24 and the estimate reduced to Rs. 1,64,000.

AJMER-MERWARA.

	Expenditure.	Receipts.
	Rs.	Rs.
1913-14, Actuals	1,15,000	3,05,000
1921-22, Revised Estimates	1,74,600	3,72,850
1922-23, Budget Estimates	1,71,670	3,77,250

8. The increase in expenditure since 1913-14 is almost entirely due to a revision of pay. The Chief Commissioner proposes a reduction of establishment saving about Rs. 13,000, of which about Rs. 1,600 falls under the Land Revenue head, and we do not recommend any further reduction for 1923-24.

OTHER MINOR ADMINISTRATIONS AND EXPENDITURE IN ENGLAND.

	Other minor	England
	administrations	
	Rs.	Rs.
1913-14, Actuals	30,000	25,000
1921-22, Revised Estimates	41,440	31,000
1922-23, Budget Estimates	44,100	30,000

9. The increased expenditure under other minor administrations is due to revision of pay. The expenditure in England represents leave allowances.

CONCLUSION.

We are of opinion that the Budget Estimate for Land Revenue in 1923-24 should not exceed Rs. 11,67,000 excluding expenditure transferred to the Survey of India estimates, thereby effecting a net saving of Rs. 2,49,600 apart from any reduction made under the head of survey expenditure.

EXCISE.

The total estimates for expenditure and receipts in 1922-23 compare with the revised estimates for 1921-22 and the actual expenditure and receipts in 1913-14 as follows.—

	Expenditure.	Receipts.
	Rs	Rs.
1913-14, Actuals	1,37,000	25,49,000
1921-22, Revised Estimate	2,52,000	55,81,000
1922-23, Budget Estimate	2,84,000	56,22,000

Under the Reforms Scheme Excise is a provincial subject in all the Major Provinces, and the above figures relate solely to the minor administrations under the direct control of the Central Government.

2. Of the increase of Rs. 1,47,000 since 1913-14, Rs. 85,000 is on account of excise compensation to the Indore Durbar, under an agreement by which a zone of 3 miles round the Mhow Cantonment is kept free of State liquor shops, and Rs. 18,000 for the purchase of opium, direct issues being now made on payment to licensed vendors in the Mhow and Neemuch cantonments. The balance of Rs. 91,000 mainly represents increases in pay of establishments. Small reductions in staff are now being made in the North-West Frontier Province and Coorg saving Rs. 6,000 and Rs. 6,828 respectively.

3. The revenue has risen from Rs. 25,49,000 in 1913-14 to Rs. 56,22,000, an increase of Rs. 30,73,000. The proportion of expenditure to revenue has thus fallen from 5.4 per cent. in 1913-14 to 5.0 per cent. at the present time. It has been brought to our notice that there is a considerable loss of revenue to the Central Government owing to the North-West Frontier Province and Delhi drawing their supplies of country spirit from Major Provinces which retain the still-head duty on the liquor so supplied. We think that endeavour should be made to come to some equitable arrangement with the supplying Provinces, or, alternatively, that the possibility should be considered of manufacturing the necessary supplies of country spirit in an area under the administration of the Central Government. It is estimated that an arrangement of this kind would ultimately yield an additional revenue to the Central Government of about Rs. 10 lakhs.

CONCLUSION.

The reduction of Rs. 13,000 already accepted will reduce the expenditure for 1923-24 to Rs. 2,71,000 and, having regard to the importance of maintaining the revenue, we do not recommend any further reduction.

STAMPS.

The estimates of net expenditure and of revenue in 1922-23, including a supplement grant of Rs. 1,17,000, compare with the revised estimates for 1921-22 and the actual net expenditure and revenue for 1913-14 as follows:—

	Net expenditure.	Revenue.
	Rs.	Rs.
1913-14, Actuals	1,68,000	14,93,000
1921-22, Revised Estimate	24,99,000	24,27,000
1922-23, Budget Estimate	22,73,000	24,29,000

2. The net expenditure represents the difference between the gross expenditure (*i.e.*, the cost of the supply and sale of stamps in India together with the expenditure incurred in England on the purchase of stocks of stamps) and the recoveries made from Provincial Governments and the Posts and Telegraphs Department for stamps issued to them. The figures are calculated as follows:—

	1913-14	1921-22.	1922-23.
	Rs.	Rs.	Rs.
Charges in India	2,86,000	4,12,000	3,49,000
Add—Supplementary grant voted by Assembly			1,17,000
Expenditure in England on stores (Rs. 15 = £1)	15,98,000	53,85,000	29,10,000
Gross expenditure	18,84,000	57,97,000	33,76,000
Deduct—Recoveries for stocks issued	17,16,000	32,98,000	11,03,000
TOTAL	1,68,000	24,99,000	22,73,000

3. The operations of the Calcutta Stamp Department include (1) the provision of stamp stocks of every description for the whole of India by indent on the Director General of Stores; (2) the main storage of stamps and detailed distribution to indenting offices in Bengal, Bihar and Orissa, Assam and the United Provinces and (copying stamps and forest stamps only) in the Central Provinces and Berar; (3) the provision of overprinted postage stamps and their supply to such Indian States as have joined the Postal Convention; (4) the provision of overprinted court-fee and copying stamps and plain paper for the Indian States in Bihar and Orissa and the Central Provinces; (5) arrangements for the manufacture and storage of (a) service postcards and (b) stamp booklets of various values of postage stamps and their issue to other Central Depôts and to the treasuries and sub-treasuries indenting upon this Store; (6) the provision of water-marked paper for use with court-fee stamps and its supply to all treasuries within the circle of supply of this depôt as well as to the Punjab and North-West Frontier which are for other purposes in the Karachi depôt's circle of supply; (7) the stocking and issue of clipping punches for the cancellation of stamps and (8) embossing cheque and receipts forms, share certificates, etc., for Government and the public.

In addition to this regular work the Calcutta depôt has in recent years undertaken the arrangements for the local manufacture and distribution of postcards and the over-printing of the postal stationery.

4. With the exception of the comparatively small supplies issued to the minor administrations directly under the Government of India, the cost of the above operations is recoverable and there is no *prima facie* justification for the great increase in net expenditure, the estimates of which amounted in 1921-22 to nearly 15 times, and in 1922-23 to 13½ times, the pre-war figure. We proceed to deal seriatim with the causes of this increase.

5. *Expenditure in India*—
This is distributed as follows —

	1913-14	1921-22.	1922-23.
	Rs	Rs.	Rs
Superintendence (Stamp Depôt)	79,000	95,000	1,08,000
Purchase of plain paper for use with adhesive labels	1,64,000	2,60,000	3,00,000
Charges in minor administrations	43,000	57,000	58,000
TOTAL	2,86,000	4,12,000	4,66,000

The salary of the Controller of Printing, Stationery and Stamps is debited to the head 46—*Stationery and Printing*, and the only establishment charges included in the figures for Superintendence in the above table are the pay of store-keepers, clerks and menials amounting to Rs. 54,710. The remaining expenditure under this sub-head includes landing, freight, and packing charges and contingencies, which depend on the volume of business transacted.

6 The lump out of Rs. 1,17,000 made by the Legislative Assembly in the estimates for 1922-23 was deducted from the provision for the purchase of plain paper but this provision was subsequently restored to Rs. 3,00,000 by a supplementary grant and we understand that it has recently been found necessary to apply for a further grant of Rs. 1,00,000. It will probably be necessary to provide Rs. 4,00,000 on this account in the budget for 1923-24, but practically the whole of the expenditure should be recovered, as only a small proportion of the stock is issued to minor administrations, and the bulk of it is taken by local Governments, who are charged 5 per cent. over cost price to cover overhead charges and incidental expenses.

7. The charges under minor administrations are mainly incurred in the North-West Frontier Province and Delhi and are distributed as follows :—

	1913-14	1921-22	1922-23.
	Rs.	Rs.	Rs
North-West Frontier Province	27,000	32,000	32,000
Delhi	7,000	12,200	12,000
Other minor administrations	9,000	12,800	14,000
TOTAL	43,000	57,000	58,000

The greater part of this expenditure is accounted for by the discount allowed to vendors on the sales of stamps, and the outlay is small in comparison with receipts, which are shown below :—

	1913-14.	1921-22.	1922-23
	Rs.	Rs.	Rs
North-West Frontier Province	6,55,000	9,82,000	9,82,000
Delhi	3,00,000	6,91,900	7,11,540
Other minor administrations	5,38,000	7,53,100	7,35,460
TOTAL	14,93,000	24,27,000	24,29,000

We think it would be advisable to debit the minor administrations with the cost of all stamps, plain paper, etc., supplied to them on the same basis on which recoveries are made from Provincial Governments. It would then be easier to check the financial results of the central depôt which should be entirely self-supporting.

8. *Expenditure in England—*

	Rs
1913-14, Actual Expenditure	15,98,000
1921-22, Revised Estimate	53,85,000
1922-23, Budget Estimate	29,10,000

This expenditure is incurred on stamps, etc., supplied by the manufacturers, Messrs. De la Rue & Co. The contract with this firm expires on the 31st December 1924, but is subject to renewal. We are informed that the question whether it will be possible and economical thereafter to manufacture stamps in India, either departmentally or by contract, is under investigation. We understand that there are technical difficulties in the way of printing adhesive stamps in India, but that the printing of postcards is a simpler process. As the latter form one of the largest items in the annual indent, take up a very large space in store, and account for the greater portion of the freight charges, there would appear to be many advantages in getting postcards at any rate printed in India.

9. Under the present contract the price to be paid for the various stamps, etc., is regulated by a schedule on a sliding scale whereby the rate decreases with the quantity supplied. In 1917, owing to the general rise in prices, Messrs. De la Rue & Co. asked for some modifications of the terms of the contract and it was agreed at the India Office that the increase in the cost of paper, less £1,000, should be borne by the Government of India, other increases in costs—labour, etc., being entirely at the charge of the firm. This arrangement was maintained till 1st January 1919 when it was agreed to make a further allowance—to be settled quarterly—for increased cost of labour, etc. We understand that these extra payments have hitherto been equivalent to an increase of 57 per cent. over the original rates in the schedule. We are informed that as a result of the recent fall in the price of paper and in the cost of labour, etc., these allowances are now showing a considerable reduction. There should also be a material reduction on account of the freight charges, which we understand are paid in England. The result will not, however, be any material reduction in the net expenditure under this head, as the greater part of this outlay is recoverable.

10. A large reduction was made in the estimates for 1922-23 both in expenditure in England and in recoveries because it was intended to transfer to the provincial accounts the charges incurred by the High Commissioner in complying with indents of Provincial Governments for stamps from England. These indents are consolidated in the central office at Calcutta in order to obtain the benefit of the sliding scale provided in the contract with Messrs. De la Rue & Co. for large orders, and we understand that the High Commissioner has not found it possible to extract from the consolidated indent the amounts debitable to the various Provincial Governments and that it has consequently been decided to revert to the previous practice of passing all these transactions through the accounts of the Central Government. We do not think that the difficulty of splitting up the indent is insuperable and we recommend that this decision be reconsidered. It will be evident from what we say below that the full amounts due from Provincial Governments have not been recovered in the past and we think it desirable to obviate the risk of such errors in the future by charging all provincial expenditure direct to the provincial accounts in England.

11. A saving can, we think, be secured in 1923-24 by reducing some of the stocks held in the central depot. Under the present arrangements a two years' supply of postage stamps is kept and 1½ years is allowed for compliance with indents. Consequently the indenting officer bases his demands on the estimated requirements of 3½ years. An officer on special duty who has recently examined this question has recommended that the stock of postage stamps be reduced to 1½ years' consumption, and that the period allowed for obtaining supplies on indent be reduced to one year. We understand that these proposals have been accepted and that a saving of Rs. 2,77,000 will consequently be effected in the Home Indent for postage stamps and postal stationery in 1923-24. We recommend that a similar investigation be made

regarding the possibility of reducing the present stocks of other classes of stamps (court-fee, non-judicial, etc.), and that, in anticipation of a further saving on this account, a reduction of Rs. 1,23,000 or Rs. 4,00,000 in all, be made in the budget for 1923-24.

12. *Recoveries.*—These are distributed as follows:—

	1913-14.	1921-22	1922-23.
	Rs.	Rs.	Rs.
Recoveries from Provincial Governments on account of stamps supplied from the central depôt.	8,67,000	23,60,000	1,02,000
Recoveries from the Posts and Telegraphs Department on account of postage stamps, issued for Postal, Telegraph and Revenue purposes	8,49,000	9,98,000	10,01,000
TOTAL	17,16,000	32,98,000	11,03,000

The large excess of expenditure over recoveries in the last two years has attracted our attention, and we have endeavoured to ascertain the causes of the deficit. We have not been able in the time available to obtain all the information required, but the following facts account in large measure for the shortage in recoveries:—

(i) Owing to changes in postal rates and postage stamps it has been necessary to lay in new stocks far in excess of the year's supply to the post office. We understand that this factor will not operate next year.

(ii) By some mistake, of which we have not been able to obtain an explanation, no provision has been made for recoveries on account of stamps supplied to Bengal and the other Provincial Governments that draw on the central depôt. The sum of Rs. 1,02,000 entered in the budget relates only to supplies of plain paper.

(iii) By a further mistake in the accounts office provision was made for recoveries on account of plain paper from a few Provincial Governments only. The actual recoveries should not fall far short of the outgoings, *viz.*, Rs. 4 lakhs (*vide* paragraph 6 above).

(iv) The charges raised against Provincial Governments and the Posts and Telegraphs Department for stamps obtained from England have hitherto been based on the contractors' schedule rates *plus* freight, and no addition has been made for the extra allowances described in paragraph 9 above, although these had risen as high as 57 per cent. We are informed that the Government of India received no intimation from the India Office of the grant of these allowances till June 1921, and that recoveries have since been delayed by discussions with Provincial Governments regarding the date from which the short payments should be made good. We recommend that recovery be made from Provincial Governments from the date on which stamps became a provincial subject under the Reforms Scheme, but we see no advantage in raising an arrear debit against the Posts and Telegraphs Department. In future the full expenditure incurred should, we think, be recovered in all cases.

(v) We understand that up to the end of 1921-22 English expenditure was converted at Rs. 10 = £1 in making recoveries both from Provincial Governments and from the Posts and Telegraphs Department, and there must have been a large loss on exchange in that year. We recommend that a claim be raised against Provincial Governments on this account also. We are informed that, with effect from the present year, recoveries will be effected at the average rate of exchange prevailing during the year.

(vi) We understand that the railway freight on consignments of stamps supplied from the Calcutta depôt to treasuries in Bengal is paid by the depôt,

and not recovered. We consider that this charge should be met by the Provincial Government.

13. The failure to effect full recoveries from Provincial Governments appears to be due to a want of co-ordination between the Stamp Office and the Accounts Department, and we recommend that the existing arrangements be reviewed. If, as we have recommended in paragraph 10 above, Provincial Governments are charged direct with the expenditure incurred on their behalf in England, the margin of error will be greatly reduced, and the Controller should, we consider, be made responsible for recovering the cost of all supplies issued from the central depôt.

14. We consider that the overhead charges of the depôt should be recovered from the Provincial Governments, Minor Administrations and the Posts and Telegraphs Department to which it supplies stamps, and we understand that it has been decided :—

- (i) to add 16 per cent. on this account to the prime cost of all stamps supplied, other than postage stamps, to cover the cost of freight, insurance, etc., and the establishment and other charges incurred in India ;
- (ii) to recover from the Posts and Telegraphs Department the cost of that portion of the establishment of the Stamp Office and the Stamp Store which deals with postage stamps and postage stationery and also a proportionate share of the cost of menials and contingencies ; and
- (iii) to ask the Government of Bengal to meet the establishment and other charges incurred in embossing stamps for that Government.

15. If the central depôt is, as we recommend, placed on a self-supporting basis, the recoveries in a normal year should not be less than the outgoings of the depôt and might slightly exceed them on account of (a) the profit made on the sale of plain paper, and (b) the fact that one item in the overhead charges, *viz.*, a share of the salary of the Controller, is debited to another head. We see no reason why all the expenditure to be incurred in 1923-24 both in England and India should not be recovered, excepting the charges of minor administrations. These charges, which are estimated at Rs. 8,000, will be raised to (say) Rs. 1,23,000 if the cost of issues is added, but this expenditure will be more than covered by the saving of Rs. 4,00,000 on account of the reduction in stocks recommended in paragraph 11 above. The gross saving of Rs. 25,50,000 thus obtained will be due in part to the transfer of expenditure to the Posts and Telegraphs Department, the amount of which it is difficult to estimate on account of the varying nature of the allowances made to Messrs De la Rue & Co. After allowing Rs. 3,50,000 for this transfer (which will be set off in the estimates of the Posts and Telegraphs Department by the fall in the cost of Stationery and Printing for which no specific allowance was made) we consider that the net reduction of central expenditure in 1923-24 should be not less than Rs. 22 lakhs as shewn in the following table :—

	Rs.
Present expenditure (Budget Estimate, 1922-23)	22,73,000
Future expenditure (minor administrations)	1,23,000
Additional charges to Posts and Telegraphs Department	3,50,000
	—4,73,000
	<hr/>
Net annual saving	18,00,000
Add—Saving from reduction of stocks in 1923-24	4,00,000
	<hr/>
Total saving in 1923-24	22,00,000

16. The above proposals have been discussed with a representative of the Commerce Department, and we understand that Department is already taking

up many of the points raised, and agrees in our conclusions, which are summarised below.

CONCLUSIONS.

Having reviewed the expenditure on Stamps we recommend that:—

- (1) the Minor Administrations be debited with the cost of all stamps, plain paper, etc., supplied to them;
- (2) expenditure incurred in England on indents from provincial depôts be charged direct to the Provincial Accounts;
- (3) the reserve stocks of stamps in the Calcutta depôt be reduced with a view to effecting a saving of Rs. 4,00,000 in 1923-24;
- (4) the whole of the expenditure, including overhead charges incurred by the central depôt be recovered and the depôt be made self-supporting, the Controller being responsible for effecting recoveries;
- (5) the provision for net expenditure on stamps be reduced in 1923-24 by Rs. 25,50,000 which, after allowing for an increased debit of Rs. 3,50,000 to the Posts and Telegraphs Department, will leave a net saving of Rs. 22 lakhs in 1923-24, and Rs. 18 lakhs in future years.

FORESTS.

The estimate of expenditure and revenue in 1922-23 compare with the revised estimate for 1921-22 and the actual expenditure and revenue in 1913-14 as follows.—

	Expenditure, Rs.	Revenue, Rs.
1913-14, Actuals	11,42,000	11,11,000
1921-22, Revised Estimate	46,63,000	13,73,000
1922-23, Budget Estimate	52,45,000	21,68,000

2. The bulk of the revenue from forests in India accrues in the major provinces where it is credited to provincial revenues. The Government of India are, however, in possession of very valuable forest property in some of the minor administrations, namely, the North-West Frontier Province, Coorg and the Andamans, and in recent years large sums have been spent on the exploitation of these forests. We have found it impossible to obtain any satisfactory information in regard either to the working or to the financial results of the forest operations. No reliable information is apparently available as to the quantity or values of timber produced and sold or the stock on hand. There are wide differences between the estimates of the Forest Department and the budget estimates of revenue and expenditure even in the case of the revised estimates for the current year. In these circumstances it is obviously impossible for us to make any detailed examination of the expenditure, and we confine our observations mainly to the steps which we consider should be taken to place the Department upon a proper footing. So far as we can ascertain the Forest Department has earned a high reputation for the management and development of the forests on technical lines, but we consider it essential that the forests should be managed on commercial lines and that a radical change in the methods of administration should be effected forthwith.

3. We are of opinion that the control of the Forest Department should be vested in a manager with commercial experience in the timber industry assisted by the necessary technical experts. It appears that, in 1921-22, 74,000 tons of timber with a value of Rs. 112 lakhs were imported into India, compared with an export of 20,000 tons with a value of Rs. 50 lakhs, and in our opinion steps should be taken to develop the output of the particular classes of timber which are required by Indian Railways and Indian Industries. The accounts of the department should also be placed on a commercial basis.

4. The following table shows the distribution of the expenditure :—

	1913-14	1921-22	1922-23.
	Rs	Rs	Rs.
HEADQUARTERS CHARGES	95,000	1,56,400	1,72,900
FOREST SURVEY	88,000	1,03,500	1,30,000
FOREST RESEARCH INSTITUTE	2,98,000	6,43,100	8,86,100
NORTH-WEST FRONTIER PROVINCE	1,31,300	6,77,000	7,50,000
COORG	1,78,500	5,67,130	5,43,050
ANDAMANS	2,75,000	14,24,800	14,01,500
OTHER MINOR ADMINISTRATIONS	58,200	1,07,070	1,07,450
EXPENDITURE IN ENGLAND AT Rs. 15 = £1.	73,000	9,84,000	12,54,000
TOTAL	11,42,000	46,63,000	52,45,000

5. *Headquarters charges.*—In view of the re-organisation which we have suggested, we do not consider that the present headquarters charges should be exceeded.

6. *Forest Survey.*—As stated in paragraph 11 of our report on the Scientific Departments we are informed that it is proposed to transfer this item to the Survey of India involving a reduction of Rs. 1,30,000 under the Forest head.

7. *Forest Research Institute.*—The activities of this Institute are two-fold, firstly, research, and secondly, the training of recruits for the forest services in India. We are informed that, on the educational side, the Institute is very largely self-supporting and in any case the development of this side of the activities of the Institute is, in our opinion, desirable. As regards research a very costly scheme has been elaborated, the expenditure involved under the building programme alone amounting to no less than Rs. 1½ crores. It has been brought to our notice that the extended activities proposed for the Institute include certain investigations which would more appropriately be left to private enterprise, and we consider that in any case it is not justifiable, in the present financial situation, to incur expenditure from public funds on research on this scale. We recommend that the whole scheme for the expansion of the Institute be reconsidered and that no further expenditure thereon be incurred beyond such amount as is obligatory in view of existing commitments. The establishment proposed for the Institute should also be reviewed and we recommend that for the next three years it be limited to Rs. 8 lakhs, saving Rs. 86,000.

8. *Minor Administrations.*—The following table compares the revenue and the expenditure in the North-West Frontier Province, Coorg and the Andamans :—

	NORTH-WEST FRONTIER PROVINCE.		COORG		ANDAMANS	
	Expenditure.	Revenue.	Expenditure.	Revenue	Expenditure	Revenue.
	Rs	Rs.	Rs.	Rs.	Rs.	Rs.
1913-14, Actuals	1,31,300	2,66,000	1,78,500	3,29,000	2,75,000	4,43,000
1921-23, Revised Estimate	6,77,700	4,00,000	5,67,130	4,82,000	14,24,800	3,69,800
1922-23, Budget Estimate	7,50,000	8,00,000	5,43,050	5,64,000	14,01,500	5,42,000

In the North-West Frontier Province the concurrent increase in revenue and expenditure is due to the adoption of the system of departmental exploitation. The Inspector General informed us that the deficit assumed in the budget was due to the fact that the estimates included provision for a considerable amount of capital expenditure, thus in the Andamans Rs. 12 lakhs had been spent on a new saw mill, and in Coorg Rs. 7 lakhs on a railway; these works had now

been finished and the Forest Department was in a position to obtain a return. It was further stated that the relative set back is due to the unfavourable state of the timber market.

As we have already explained, it is impossible on the information before us to examine the expenditure in detail. We understand, however, that the preliminary estimate for 1923-24 approximates closely to the budget estimate for 1922-23 and we make no recommendation.

9. *Expenditure in England*—We understand that the preliminary estimate for 1923-24 is £44,300 equal to Rs. 6,64,500, a reduction of Rs. 5,90,000 on the current year's estimate, which included a large amount of machinery and plant. We understand the appointment of Director of Forest Studies on a pay of £900 is on a temporary basis; we see no necessity for its retention and recommend that it be abolished, saving Rs. 13,500.

CONCLUSIONS.

Having reviewed the expenditure on Forests, we recommend that—

- (1) control of the Forest Department be vested in a manager with commercial experience in the timber industry;
- (2) the accounts of the Department be placed on a commercial basis; and
- (3) the estimates for 1923-24 be limited to Rs. 45,55,000, saving Rs. 6,90,000.

REGISTRATION.

The estimates for 1922-23 compare with the revised estimate for 1921-22 and the actual expenditure and receipts in 1913-14 as follows:—

	Expenditure.	Receipts
	Rs.	Rs.
1913-14, Actuals	27,000	96,000
1921-22, Revised Estimate	47,000	1,72,000
1922-23, Budget Estimate	48,000	1,68,000

Under the Reforms Scheme Registration is a provincial subject in all the Major Provinces and the above figures relate solely to the minor administrations under the control of the Central Government.

Small economies are being effected in some of the administrations amounting to about Rs. 4,000 in all and we recommend that the budget for 1923-24 should be fixed at Rs. 44,000.

PART VIII.

OTHER DEPARTMENTS AND SERVICES.

INTEREST AND SINKING FUNDS.

The estimate for 1922-23 compares with the revised estimate for 1921-22 and the actual payments and receipts in 1913-14 as follows :—

	Payments.	Receipts.
	Rs.	Rs.
1913-14, Actuals	15,18,54,000	1,14,36,000
1921-22, Revised Estimate	34,72,14,000	1,16,78,000
1922-23, Budget Estimate	37,91,84,000	85,82,000

2. The expenditure is distributed as follows :—

Head to which chargeable.	1913-14	1921-22.	1922-23
	Rs.	Rs.	Rs.
Railways	10,95,47,000	15,33,47,000	16,77,95,000
Irrigation	6,51,000	9,39,000	9,51,000
Posts and Telegraphs . . . . .	...	60,00,000	66,00,000
Provincial Governments	2,22,17,000	2,65,32,000	2,99,73,000
Unproductive ordinary debt	76,01,000	11,13,25,000	11,86,02,000
Interest on other obligations	1,18,38,000	2,61,71,000	3,23,63,000
Sinking Funds		2,29,00,000	2,29,00,000
Total	15,18,54,000	34,72,14,000	37,91,84,000
Total unproductive debt (last three items)	1,94,39,000	16,03,96,000	17,38,65,000

3. *Interest charged to Provincial Governments.*—This relates to (a) that portion of the debt which was incurred for the construction of irrigation works which have been transferred to the provinces under the Reform Scheme, the amounts recoverable in 1922-23 being Rs. 2,14,97,000, and (b) other advances and loans to Local Governments, interest on which was estimated at Rs. 84,76,000.

4. *Interest on other obligations.*—The nature of these obligations and the amount of interest payments in respect of them will be seen from the following statement :—

	INTEREST PAYMENTS.	
	1913-14	1922-23.
	Rs.	Rs.
Post Office Savings Bank Deposits	61,90,957	67,27,000
Post Office Cash Certificates . . . . .	..	71,00,000
Provident Funds	22,04,369	1,59,85,000
Other Funds	34,43,059	25,51,000
TOTAL	1,18,38,385	3,23,63,000

5. *Sinking Funds.*—This head includes (a) an annual provision of £500,000 in respect of the portion of the British Government's war loan taken over by India in connection with her contribution to the war, and (b) Rs. 154 lakhs for the two 5 per cent. long term loans floated in India in 1917 and 1919. When these loans were raised an undertaking was given by Government that, in order to keep up their price in the market, an amount equivalent to 1½ per cent. of the original issue of the loans would be set apart every year for the purchase and cancellation of securities belonging to the loans. It was found

that this depreciation fund had no appreciable effect in keeping up the price, and it was decided in March 1920 to supplement it by a further appropriation of Rs 80 lakhs a year to be devoted to the same purpose. We recommend that the purchases for the sinking funds be made periodically by open tender.

6. The large increase in the interest payable on unproductive debt is due to two main causes (1) the £100 million contribution made by India towards the cost of war, and (2) the series of deficits from the year 1918-19 onwards amounting, including the estimated deficit in the current year, to over Rs. 100 crores.

CONCLUSION.

We deal further with this question in our general conclusions but it is apparent that the heavy increase in the deadweight charges for unproductive debt must form a great burden on the taxpayer. We have already observed in our report on Railway expenditure that further capital outlay on the huge scale contemplated on railways that are being worked at a serious loss to the State can only be justified if it can be satisfactorily shown that the net earnings of the railways to which it is applied will be increased sufficiently to cover the additional interest charge.

CURRENCY.

	Rs.
1913-14, Actual Expenditure	35,64,000
1921-22, Revised Estimate	92,28,000
1922-23, Budget Estimate	80,82,000

This expenditure is distributed as follows:—

	1913-14.	1921-22	1922-23
	Rs	Rs.	Rs.
INDIA	17,44,000	29,26,000	31,27,000
ENGLAND AT Rs. 15 = £	18,20,000	63,02,000	49,55,000
TOTAL	35,64,000	92,28,000	80,82,000

2. *Expenditure in India.*—The major portion of this expenditure is on account of the cost of the currency offices and the remittance of treasure, but the budget for 1922-23 also includes an item of Rs. 2 lakhs for loss by exchange in connection with the Persian Consulates.

The growth in the cost of administration is partly due to the revisions of the pay of establishments and partly to the growth of the note circulation. The following statement gives particulars of the numbers of notes issued from stock (excluding reissues) and cancelled at the Currency Offices in 1913-14 and 1921-22:—

DENOMINATION OF NOTE.	ISSUES (NUMBER OF PIECES EXCLUDING REISSUES).		CANCELLATIONS (NUMBER OF PIECES).	
	1913-14	1921-22.	1913-14.	1921-22.
Rs.				
1	..	236,477,000	...	194,336,000
2½	..	2,369,000	..	3,939,000
5	5,470,000	47,790,000	5,284,000	37,109,000
10	23,991,000	66,687,000	23,436,000	44,599,000
50	943,000	1,632,000	736,000	1,394,000
100	6,643,000	12,321,000	5,586,000	10,517,000
500	216,000	197,000	213,000	196,000
1,000	719,000	597,000	689,000	625,000
10,000	87,000	84,000	82,000	85,000
TOTAL	37,072,000	358,154,000	36,126,000	202,800,000

It will be seen that the introduction of the one-rupee note has resulted in a very large increase in the number of notes handled, though this addition to the work of the Currency Offices has to some extent been set off by the abolition of the system of registration for the five-rupee and ten-rupee notes.

We are informed that scales have been laid down after careful enquiry for the different kinds of work in the Currency Offices, and that these scales are in practice applied in three ways:—

- (1) A complete record is maintained in each Currency Office of the work done in the different sections and monthly reports are submitted to the Deputy Controller of the Currency who is responsible for seeing that the standard scales are worked up to and that work is kept up to date.
- (2) Any revision of permanent establishment is based on the average daily statistics of work and the standard scales of work.
- (3) Temporary establishments are entertained in every office in order to cope with temporary increases of work and these are similarly based on the sanctioned scales.

We understand that the preliminary estimate for 1923-24 shows a reduction of Rs. 1,33,000 mainly owing to a reduction of the provision required for loss by exchange in connection with the Persian Consulates.

4 *Expenditure in England.*—Apart from a small provision for leave allowances, this represents the cost of paper and of the manufacture of note forms by the Bank of England. We are informed that an officer has been placed on special duty to enquire whether the manufacture of currency notes can not be carried out economically in India. Meanwhile, though some saving can be anticipated from the fall in the cost of paper, we understand that this will be more than set off by the increase in the number of notes required.

5. We reproduce as Appendix A an extract from a note by the Controller of the Currency regarding the relative cost of the silver rupee and the one-rupee note, from which it would appear that it is more economical to use silver rupees than paper rupees. The one-rupee note was introduced as a war measure. Generally speaking, no solvent country, so far as we know, issues a note of such a small denomination as one rupee, and we think that if, as appears to be the case, a saving would accrue from the discontinuance of the one-rupee note, the issue of these notes should be abandoned.

CONCLUSION.

A saving of Rs. 1,33,000 is anticipated in the expenditure in India in 1923-24, but we understand that this will be set off by increased expenditure on note forms in England. We consider that if, as appears to be the case, a saving would accrue from the discontinuance of the one-rupee note, the issue of these notes should be abandoned.

APPENDIX A.

Extract from a note by the Controller of the Currency on the relative cost of the silver rupee and the one rupee note

Enquiry from the Mints shows that as a result of experiments carried out by four Mint Masters, the average abrasion in a rupee works out approximately at 1.5 per cent. in 50 years (Major Stace gives the figure of 2 per cent. in 55 years), and the actual minting costs (excluding seigniorage are reported by Colonel McCormick as Rs. 10 per 1,000, *i.e.*, 1 per cent. and by Major Stace as Rs. 9 per 1,000, *i.e.*, 0.9 per cent.

2 I have re-calculated the profit on coinage of rupees, substituting 1.5 per cent in 50 years as the loss by abrasion and 1 per cent as minting costs. The result gives the total cost of a rupee as Re 0.835 and the assumed annual profit as Re 0.0082 as compared with the India Office figures of Re 0.8474 and Re. 0.00763 respectively.

3 The calculation, however, necessarily makes other assumptions:—

- (1) price of silver as 35*d.* per st. oz.,
- (2) exchange value of rupee 16*d.*,
- (3) average rate of interest 5 per cent.

and

- (4) that whole of Gold Standard Reserve is invested, as at present.

An alteration in any one of these assumptions will of course affect the results. The lower the price of silver or the higher the exchange value assumed for the rupee, the greater will be the profit, *e.g.*, if the price of silver were 30*d.* per st. oz., the other assumptions remaining the same, the total cost of a rupee becomes Re. 0.7166, and the interest earned Re. 0.0142.

4. On the other hand, if the rate of interest earned on the Gold Standard Reserve investments be taken as 4 per cent. instead of 5 per cent and the latter figure is clearly much too high in present conditions, the interest earned will be Re 0.0066 (with silver at 35*d.* per st. oz.) Re 0.0113 (with silver at 30*d.* per st. oz.) Even 4 per cent. is, however, too high since the bulk of the Gold Standard Reserve investments are in British Government Treasury Bills which earn at present considerably less than 3 per cent. For convenience I tabulate these results.

SUMMARY.

	I Cost.	II Assumed annual profit.	III REMARKS
One-rupee note	Rs (a) 9336 (b) 852	Rs 0092 0074	(a) Assumes average cost 11 <i>s</i> 1 <i>d.</i> per 1,000 and life of six months (b) Assumes average cost 10 <i>s</i> per 1,000 and life of seven months
Silver rupees	(c) 8358 (d) 8358 (e) 8358 (f) 186 (g) 7186 (h) 7186	0082 0066 0049 0142 0113 0086	(c) to (b) assume abrasion of 1½ per cent. in 50 years and coinage cost 1 per cent. (c) Assumes price of silver 35 <i>d.</i> per st. oz. and interest on Gold Standard Reserve investments 5 per cent. (d) Silver at 35 <i>d.</i> , rate of interest 4 per cent. (e) Silver at 35 <i>d.</i> , rate of interest 3 per cent. (f) Silver at 30 <i>d.</i> , rate of interest 5 per cent. (g) Silver at 30 <i>d.</i> , rate of interest 4 per cent. (h) Silver at 30 <i>d.</i> , rate of interest 3 per cent.

MINTS.

The estimates of expenditure and receipts for 1922-23 compare with the revised estimates for 1921-22 and the actuals for 1913-14 as follows.—

	Expenditure.	Receipts.
	Rs.	Rs.
1913-14, Actuals	19,89,449	50,97,614
1921-22, Revised Estimates	18,87,000	14,24,000
1922-23, Budget Estimates	22,34,000	19,19,000

2. The main business of the two Mints at Calcutta and Bombay is to coin rupees, half-rupees and small coin (nickel and bronze, also silver up till recently) for the Government of India. The bulk of the coinage is from metal purchased from abroad, but a certain amount of coinage is proceeding at the Mints continuously from the recoinage of coin which is withdrawn from circulation under standing instructions in order to maintain the purity of the coinage. The Mints are also engaged on a variety of subsidiary work, e.g., the coinage of silver British Dollars for circulation in the Straits Settlements and Hongkong, small coin for these colonies and Ceylon and occasionally for certain Indian States, the receipt of sovereigns and gold bullion imported into India by banks and firms to obtain finance for trade, the receipt and refinement during and subsequent to the war of gold produced in India which used formerly to be exported to England to be refined and disposed of there, the provision of weights and scales for Government departments, and the manufacture of medals for them and for certain public institutions, and of signature stamps and stamping machines for the Currency and Public Debt Offices and latterly for Provincial Governments. Since 1914, the Mints have been authorised to receive and refine gold for the public, and this work is heavy in Bombay owing to its importance as a bullion market. The Assay Office is concerned with the assaying of bullion tendered for coinage and of standard meltings made by the Mint, the weighing and assaying of pyx coins turned out by the Mint and the custody and verification of weights of precision.

3. The receipts are distributed as follows:—

	1913-14.	1921-22	1922-23.
	Rs.	Rs.	Rs.
Calcutta	18,44,733	2,55,000	3,41,000
Bombay	32,51,921	11,66,000	15,75,000
England	960	3,000	3,000
TOTAL	50,97,614	14,24,000	19,19,000

The receipts for 1913-14 were mainly derived from the coinage of new rupees and from profits on the circulation of nickel coins. The coinage of new rupees has now ceased, and in the current year's budget the major portion of the receipts are derived from profits on the circulation of nickel and bronze coins. These profits depend on the amounts passed into circulation out of small coin depôts and not necessarily on the actual coinage in the particular year concerned. We understand that a large reduction in these profits is anticipated in 1923-24 and that the estimate for receipts is only Rs. 4,91,000.

4. The expenditure is distributed as follows:—

	1913-14.	1921-22	1922-23
	Rs	Rs	Rs
Calcutta	9,97,830	8,22,000	10,20,000
Bombay	8,33,159	9,66,000	10,88,000
England	1,58,460	99,000	1,26,000
TOTAL	19,89,449	18,87,000	22,34,000

In view of the large number of rupees, at present exceeding 80 crores, which have accumulated in the Paper Currency Reserve and of the improbability of any coinage of new rupees being required for a long time to come, we have considered the question of closing one of the Mints, preferably that at Calcutta which occupies a very valuable site. We are informed that if this were done, it would be necessary to make considerable additions to the Machinery of the Bombay Mint and to increase its storage accommodation. Even then it is doubtful whether the Bombay Mint could ever cope properly with a combined rush of any two subsidiary coinages (bronze and nickel). In addition to this initial expenditure, charges will have to be incurred on gratuities or compensatory pensions to the staff discharged at Calcutta and it would be several years before any considerable savings could be effected. The closing of one of the Mints would also be accompanied by certain risks such as possible strikes or failures of plant at times when coinage is urgently required and possible heavy demands resulting from a financial panic. On the whole we consider that it would be unsafe for India to be dependent on one Mint. The demands for the coinage of rupees in India are liable to very large and sudden fluctuations as is evidenced by the following figures and although very large reserves have now been accumulated, it would be unsafe to assume that large demands will never arise in the future.—

	Lakhs of rupees coined
1912-13	18,75
1913-14	12,14
1914-15	1,81
1915-16	1,48
1916-17	29,89
1917-18	22,58
1918-19	50,10
1919-20	36,62
1920-21	3,41
1921-22	1,27

The alternative course of closing the Calcutta Mint for a few years with the idea of starting it again at short notice is also open to various objections. It would involve similar additional expenditure on machinery in Bombay and compensation charges for the Calcutta staff, and the Mint Master reports that it would be impracticable to start the Mint again at short notice, as it would take a long time to collect and train a new staff and operatives not only for the mechanical departments but also for the accounts and bullion offices. The work of the Mint is extremely specialized and the staff consists of men trained by long experience. The best course therefore appears to be to continue working both the Mints, keeping the establishment rigorously reduced to a minimum, the permanent staff being maintained but no vacancies being filled unless absolutely necessary. It is possible that the silver minting portion of the Calcutta Mint and the nickel portion of the Bombay Mint might be closed completely, nickel and copper coinage only being undertaken in Calcutta and silver coinage in Bombay, and we recommend that this suggestion be further explored. A considerable saving could be effected by removing the Calcutta Mint to a cheaper site. We are informed that this question has been under consideration for some years, and we recommend that the decision be expedited.

5 The expenditure of the Calcutta Mint is distributed as follows :—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
1. Direction	5,094	84,440	95,800
2. Bullion Establishment	2,43,337	26,700	23,100
3. Operative Establishment	42,388	2,60,500	3,22,190
4. Assay Establishment	50,172	42,570	65,030
5. Allowances, contingencies, etc.	4,18,035	1,03,650	1,33,060
6. Loss on coinage	1,28,804	1,54,000	2,05,000
7. Purchase of local stores . . . . .	.	1,25,140	1,69,820
TOTAL	9,97,830	8,22,000	10,20,000

The numbers employed on the 1st of April in each of the three years is shown in the following table.—

	1st April 1914.	1st April 1921	1st April 1922
Permanent	92	86	87
Temporary	984	894	620

The Mint Master reports that the minimum staff which he considers it necessary to retain as a trained nucleus to expand quickly to meet urgent demands is the staff required for the coinage of one lakh of rupees daily, that is, the full permanent staff *plus* approximately 500 temporary men, but he adds that retiring and leave vacancies when they occur are not necessarily filled. At present the Calcutta Mint is executing large orders for war medals on behalf of the Army Department, but we understand that this work will be completed by the 1st of April 1923 and the temporary establishment employed on it should then be reduced. We consider that it should be possible to effect a saving of Rs. 1,00,000 on temporary establishment in 1923-24 and Rs. 50,000 on the purchase of local stores. Against this saving, however, we understand that there will be some unavoidable increases on account of the return of the Mint Master from leave, a rise in rates and taxes and loss on coinage. After making allowance for these increases, we recommend that the provision for 1923-24 be reduced to Rs. 9 lakhs, a saving of Rs. 1,20,000.

6. The expenditure of the Bombay Mint is distributed as follows:—

	1913-14	1921-22.	1922-23.
	Rs.	Rs	Rs
1. Direction	77,967	72,000	84,076
2. Bullion establishment	1,98,399	50,000	60,408
3. Operative establishment	52,134	2,04,000	2,10,640
4. Assay establishment	87,018	61,000	47,720
5. Allowances, contingencies, etc.	3,08,803	98,000	94,828
6. Loss on coinage	1,08,838	2,40,000	1,00,328
7. Purchase of local stores	...	1,69,000	2,00,000
8. Electrification of Mint	...	75,000	2,90,000
TOTAL	8,83,159	9,66,000	10,58,000

The numbers employed in each of the three years are shown in the following table:—

	1st April 1914	1st April 1921.	1st April 1922.
Permanent	162	111	112
Temporary	642	582	435

We understand that when the budget estimate for the current year was framed, it was anticipated that the Mint would be closed for the greater part of the year to enable the scheme of electrification to be carried out and the provision for temporary establishment was reduced accordingly. The Mint will resume working next year and no further reduction in staff appears to be feasible, excepting a reduction of Rs. 10,000 in the temporary establishment of the bullion department. We consider, however, that a saving of Rs. 50,000 can be effected in the purchase of local stores and there will be a large reduction in the expenditure on electrification, as only Rs. 58,000 will be required to complete the scheme for which Rs. 2,90,000 were provided in the current year. With these reductions the grant for 1923-24 will be reduced to Rs. 7,96,000, a saving of Rs. 2,92,000.

7. The expenditure in England consists mainly of leave allowances which cannot be reduced.

8. The above proposals have been discussed with the Controller of the Currency and are generally accepted by him. They will result in a reduction

of expenditure in 1923-24 by Rs. 4,12,000 as compared with the Budget estimate for the current year.

CONCLUSIONS.

Having reviewed the expenditure on the Mints, we recommend that—

- (a) the two Mints be retained with a minimum establishment, but that an early decision be arrived at on the question of removing the Calcutta Mint to a cheaper site;
- (b) the possibility of closing the silver minting portion of the Calcutta Mint and the Nickel portion of the Bombay Mint be explored; and
- (c) the expenditure under this head in 1923-24 be limited to Rs. 18,22,000, saving Rs. 4,12,000.

EXCHANGE.

The estimate for 1922-23 compares with the revised estimate for 1921-22 and the actuals for 1913-14 as follows:—

	Net Expenditure.	Net Receipts
	Rs.	Rs.
1913-14, Actuals		17,96,000
1921-22, Revised Estimate	4,90,000	
1922-23, Budget Estimate	20,60,000	...

2. The figures for 1913-14 represent the excess receipts from remittances as compared with the amounts receivable at the then established rate of exchange of Rs. 15 to the £. The figures for 1921-22 and 1922-23 differ from those shown in the current year's Budget, which represent a lump adjustment on account of the difference between the actual or estimated rate of exchange and the rate of Rs 10 to the £ in respect of sterling transactions under non-commercial revenue heads. We have considered it desirable for comparative purposes to have the revised estimates for 1921-22 and the Budget estimates for 1922-23 recast on an exchange basis of Rs. 15 to the £. The figures shown above against these years are a residue arising from the fact that, while certain changes were made in the final edition of the revised estimates for 1921-22 and the Budget for 1922-23 under revenue and expenditure heads, the consequential alterations under Exchange were not made as they were too small to be carried out at that stage. We consider that the best course would be to show all English expenditure in sterling both in the estimates and in the accounts. The rupee equivalents should be shown in parallel columns and the sterling payments should be converted in the budget estimates at the assumed rate of exchange, and in the accounts prepared at the end of the year at the actual or average rate prevailing during the year. If this course were followed the separate entry under the exchange head would disappear from future estimates and accounts and the estimated and actual expenditure in rupees would be shown in both.

It has been represented to us that the present method of compiling the accounts is somewhat confusing, and if the procedure which we suggest were adopted the budget and the final accounts would be better understood.

CIVIL WORKS.

The estimate for 1922-23 compares with the revised estimate for 1921-22 and the actual expenditure in 1913-14 as follows :—

	Rs.
1913-14, Actual Expenditure	1,58,82,000
1921-22, Revised Estimates	1,54,88,000
1922-23, Budget Estimates	1,61,87,000

2. The expenditure subdivided under the main heads shown below :—

	1913-14.	1921-22.	1922-23.
	Rs	Rs.	Rs
ORIGINAL WORKS INCLUDING WORKS IN PROGRESS	77,85,000	65,65,000	60,30,000
REPAIRS	39,84,000	58,09,000	64,50,000
ESTABLISHMENT, ETC			8,05,000
ESTABLISHMENT AND TOOLS AND PLANT CHARGES PAYABLE TO OTHER GOVERNMENTS AND DEPARTMENTS	21,21,000	22,39,000	15,64,000
TOOLS AND PLANT	1,99,000	1,20,000	1,10,000
DELHI MOTOR BUS SERVICE			1,09,000
SUBSIDY	—91,000		1,02,000
RESERVE			1,98,000
DEDUCT EXPENDITURE ON ENGLISH STORES	—3,43,000	—3,80,000	—32,000
TOTAL	1,36,55,000	1,43,53,000	1,53,36,000
EXPENDITURE IN ENGLAND AT Rs. 15 = £1	15,18,000	6,34,000	1,15,000
WORKS CARRIED OUT BY CIVIL OFFICERS, NORTH-WEST FRONTIER PROVINCE	1,79,000	95,000	1,12,000
WORKS CARRIED OUT BY CIVIL OFFICERS IN OTHER AREAS	5,30,000	4,06,000	6,24,000
TOTAL	1,58,82,000	1,54,88,000	1,61,87,000

We deal with the more important of the above heads seriatim.

ORIGINAL WORKS INCLUDING WORKS IN PROGRESS.

3. We have been furnished with the following particulars of the more important works for which it is at present proposed to make provision in the estimate for 1923-24 :—

	Rs
Draband-Ghazni Khel Road	21,83,000
Forest Research Institute, Dehra Dun	10,00,000
Kabul Legation	6,00,000
Dhanbad School of Mines and Geology	2,00,000
Salt Works, Bombay	1,71,000
Conversion of Monotype Press, Simla, to a combined machine press	1,65,000
Expansion of the Agricultural Research Institute, Pusa	1,40,000
Expenditure in areas directly administered by the Central Government	15,30,000
Expenditure in Major Provinces	5,63,000
* TOTAL	65,52,000

Draband-Ghazni Khel Road—The figure of Rs. 21,83,000 is exclusive of the cost of establishment, tools and plant and the total expenditure proposed for 1923-24 including these charges is Rs. 25 lakhs. In view of the necessity for providing adequate lateral communications within the administrative border for the defence of the North-West Frontier, we make no recommendation

Forest Research Institute, Dehra Dun.—We are informed that this provision is on account of an instalment of a large project, the total expenditure involved amounting to about Rs. 1½ crores. The portion of the scheme for which administrative sanction has been accorded is Rs. 58 lakhs of which it is anticipated that about Rs. 31,40,000 will have been spent by the 31st March 1922-23, while there are said to be commitments to the extent of a further Rs. 13 lakhs. We are recommending that the whole scheme for the expansion of the Institute be reconsidered and that no further expenditure thereon be incurred beyond such amount as is obligatory in view of existing commitments.

Kabul Legation.—The estimated cost of the Legation building is Rs. 16,00,000 of which Rs. 80,000 was spent in 1922-23 on purchasing the land. In paragraph 20 of our report on political expenditure we recommend that the plans be reconsidered with a view to restricting the cost of the building, if possible, to a smaller figure.

Dhanbad School of Mines and Geology.—In our report on Industries we recommend that this scheme be postponed for three years.

Conversion of Monotype Press, Simla, to a combined machine press.—We understand that this forms portion of a scheme designed to secure substantial economies in the working of the Government presses and we have recommended in our report on Stationery and Printing that this should be proceeded with.

Agricultural Research Institute, Pusa.—We are informed that there is a scheme for the expansion of the Institute, in order to make it a first grade institution for higher agricultural training, the scheme being estimated to involve recurring annual expenditure of Rs. 1 lakh, and initial expenditure on building of Rs. 13½ lakhs. We understand that it is now proposed, in view of the present financial situation, to defer for 5 years the major portion of the scheme and that about Rs. 20,000 would be sufficient for the completion of certain quarters at present under construction for the menial and clerical staff. We recommend that the exact extent of existing commitments be ascertained and expenditure be limited to this amount.

Expenditure in areas directly administered by the Central Government and in the Major Provinces.—The proposed expenditure of Rs. 20,93,000 is mainly on account of minor works, and the programme should be susceptible of substantial curtailment.

Summary.—We recommend that expenditure be restricted in the directions indicated and the provision for new works and works in progress in 1923-24 limited to Rs. 55 lakhs, a saving of Rs. 5,30,000 on the estimates for 1922-23.

REPAIRS.

	Rs.
1913-14, Actual Expenditure	39,84,000
1921-22, Revised Estimate	58,09,000
1922-23, Budget Estimate	64,50,000

4. Having regard to the fall in prices in materials which has taken place we recommend that provision for 1923-24 be limited to Rs. 57 lakhs, saving Rs. 7,50,000.

5. From a recent investigation into the utilisation of buildings owned by the Central Government in Calcutta it appears that these contain a considerable amount of vacant accommodation and that the space available is not utilised to the fullest possible extent. In paragraph 29 of our report on General Administration we recommended that the work of elimination of Government records in Calcutta of no permanent or historic value should be speeded up with a view to freeing the space now occupied by them, and we further recommend that the present distribution of accommodation among the establishments of the Central Government in Calcutta be reviewed in order that such space as is no longer required for these establishments may be set free in the form of complete buildings and steps taken for their disposal to the Local Government or otherwise.

COST OF ESTABLISHMENT AND OTHER OVERHEAD CHARGES

6. The following statement shows for the administrations mentioned the cost of establishment (less recoveries) and the expenditure on public works —

	Establishment charges	Estimated expenditure on works and repairs in 1922-23.	Percentage of establishment charges
	Rs.	Rs.	
Rajputana	1,70,000	5,82,000	29
Central India	1,60,000	7,22,000	22
Simla Imperial Circle	1,85,000	5,65,000	33
Coorg	75,000	2,19,000	34

We consider that these figures show that larger establishments are maintained than are justified by the amount of work to be done. We are aware that the high percentages are due to the material reduction in the allotments for public works in recent years, but we consider that this constitutes an argument in favour of employing a contract system which would obviate the necessity of maintaining expensive staff when for financial or other reasons the volume of work diminishes. We understand that in Rajputana and Central India two Superintending Engineers and three Executive Engineers are maintained for supervision of a programme of work amounting to Rs. 13 lakhs only. We think that it should be possible to amalgamate the public works establishments in these areas and to retain only one Superintending and two Executive Engineers which would effect a saving of about Rs. 40,000 and that further reductions should be made in the subordinate staff. In Coorg, reductions amounting to Rs. 16,000 are proposed, but we doubt the necessity for an Executive Engineer costing Rs. 14,000 and an Assistant Engineer costing Rs. 9,000 for this small area and, we think, substantial further reductions should be made if it is not possible to arrange with the Madras Government to take over this work. Much of the work in the Simla Circle is estate work in connection with the considerable properties of the Government of India, but we consider that the present supervision charges are excessive and that a reduction of staff should be effected, saving at least Rs. 35,000.

With the curtailment of work to be carried out in the Major Provinces there should be a proportionate saving in the overhead charges, and we recommend that, including the savings indicated above, a total reduction of Rs. 2,50,000 be made in establishment charges for 1923-24 compared with 1922-23.

7. We further consider that substantial economies could be effected by recourse to a system of calling for tenders and giving out agency work on inclusive contracts wherever feasible. In paragraph 26 of the Report of the Public Works Department Reorganisation Committee, 1917, it was recommended that "the policy of Government should be directed to the encouragement of the growth of the class of regular contractors and contracting firms in India by inviting tenders for complete works and by the introduction of a system of lump sum contracts." We are informed that the Department has this principle always in mind, but the occasions on which effect has been given to it appear in practice to have been very limited.

8. These remarks apply not merely to the execution of works in areas directly administered by the Central Government but also in the provinces where works are carried out on commission for the Central Government by the Public Works Departments of the local Administrations or by the Military Works Services as in the case of the North-West Frontier Province. The statement below shows the overhead charges made in the following cases:—

	Charge per cent.		Charge per cent.
Madras	23	Burma	23
Bombay	23	Central Provinces	23
Bengal	21	Assam	23
United Provinces	19	Military Works Services	24½
Punjab	18	Baluchistan	24½
Bihar and Orissa	23	North-West Frontier Province	20

We understand that some Local Governments have claimed that the present rates are inadequate. We are informed, however, that they compare very unfavourably with the charges included in quotations by substantial contracting firms in important centres such as Calcutta and Bombay. A lump sum contract has also the advantage of ensuring that the original estimate of the cost of a work to Government will not be exceeded. In the case of petty repairs Government authorities should be able in a large number of cases to arrange departmentally for their execution and we are informed that it should be possible outside the large towns to obtain technical advice from, or to arrange for inspection by, District or Local Board Engineers and their staffs at a reasonable fee.

It has been suggested to us, as another alternative, that it might be possible to make a comprehensive arrangement over one or more Provinces with responsible contracting firms to undertake for a reasonable fee the preparation of plans and estimates and the supervision of works and repairs for a period of years, and we recommend that this possibility be explored. In any event, we feel that the recommendations of the Reorganisation Committee referred to above should be given effect to without further delay.

RESERVE.

9. We are informed that it is the practice, when the full amount of the allotment authorised for a particular work is not required for the purpose, to add the amount of the lapse to the reserve and that the amounts so saved are frequently reappropriated for expenditure on other works for which no provision exists in the budget. We are of opinion that the reappropriation of funds, except in cases where the amount involved is small, should be limited to works of real emergency and should require the sanction of the Finance Department, which should consider carefully in each case, before sanctioning a re-appropriation, whether the surrender of savings is justified by the financial situation; further that some system should be immediately introduced to obviate the waste which occurs owing to the rush of expenditure at the end of the year in order to avoid the lapse of unspent funds.

EXPENDITURE IN ENGLAND.

10. This expenditure in 1922-23 is mainly on account of leave allowances and stores.

WORKS CARRIED OUT BY CIVIL OFFICERS.

11. We are informed the expenditure of Rs. 1,12,000 shown under this head in the estimates of the North-West Frontier Province will in future be classified under Public Works, and that the provision of Rs. 6,24,000 for other areas relates to small items carried out by departmental agency and that it is proposed in future to classify the expenditure under the head of the department in which it is incurred.

CONCLUSIONS.

Having reviewed the expenditure of the Public Works Department we recommend that—

- (1) the practice of calling for tenders and giving out work on inclusive contract be adopted wherever possible and establishments reduced;
- (2) reappropriation of funds be strictly limited and be subject to the surrender of savings being justified by the financial situation; and
- (3) allowing for the transfer of Rs. 6,24,000 to other heads, the budget estimate for 1923-24 be limited to Rs. 1,40,33,000, a total reduction of Rs. 21,54,000, and a net saving of Rs. 15,36,000.

CAPITAL EXPENDITURE ON NEW DELHI.

The provision for capital outlay on this project for 1922-23 amounted to Rs. 2 crores made up as follows :—

	Rs.
Net establishment charges	16,32,000
Works expenditure	1,76,63,000
Adjustment for exchange	9,05,000
	<hr/>
	2,02,00,000
Less receipts taken in reduction of expenditure	2,06,000
	<hr/>
	2,00,00,000

2. We are informed that the first detailed estimate prepared in 1913 was fixed at Rs. 917 lakhs. Subsequently, in 1921 the great increase in rates of labour, materials and plant and the expansion of the original programme to meet the requirements of the reformed Legislature made it necessary to frame a revised estimate. This amounted to Rs. 1,307 lakhs, against which it is anticipated that total gross outlay on the project amounting to Rs. 841 lakhs will have been incurred by March 1923. We are informed that it is expected that the project will be completed by October 1925, except for Government House and the Legislative Chambers, and that various receipts and savings will reduce the total net expenditure to Rs. 1,292 lakhs. The approximate estimate of maintenance charges after the completion of construction, appended to the report of Sir Malcolm Hailey's Committee, is about Rs. 16½ lakhs, set off by receipts of Rs. 9 lakhs and resulting in a net charge to the general tax-payer at Rs. 7½ lakhs per annum. This is, we believe, a very conservative estimate and it takes no account of the interest charges on this heavy capital outlay.

3. From an examination of the report of Sir Malcolm Hailey's Committee, we observe that the Committee hold that the Government are committed to the project which has in their opinion progressed to a stage at which, even in the present state of the country's finances, it can neither be abandoned or even materially altered. We consider that it would, in these circumstances, be outside our province to offer any criticism on the expenditure which has been incurred or will have to be incurred on New Delhi and we therefore refrain from expressing any opinion.

4. We draw attention to the statement made in the Report that the estimate for New Delhi "is confined to making provision for the works necessary to enable the Government of India to occupy their new Headquarters effectively". It does not include the cost of various items such as the proposed new Railway Station at Ajmere Gate to take the place of the Delhi Sadar Station.

The estimated cost of the new station as at present contemplated, together with consequential expenditure, amounts to Rs. 1,44,00,000. If this sum is added to the capital cost of the Agra-Delhi Chord Railway it will entail a serious loss on the working of that line as, so far as we can judge, there is little prospect of much additional revenue accruing from the new construction.

We ascertained that land has been purchased for the construction of a much larger station than is now proposed, the total ultimate cost being estimated at about Rs. 2 crores.

5. We are of opinion that there is no financial justification for the construction of the new station and we recommend that the present scheme be again reviewed with the object of curtailing the expenditure as far as practicable. For example, we are informed that the estimated cost of the proposed station buildings amounts to Rs. 26,00,000. We consider that expenditure on this scale is extravagant, and that a less expensive station could be constructed, which would meet the probable traffic requirements for many years to come and at the same time be capable of being enlarged if and when traffic develops on a large scale.

- FAMINE RELIEF.

The estimate for 1922-23 compares with the revised estimate for 1921-22 and the actual expenditure for 1913-14 as follows :—

	Rs.
1913-14, Actual Expenditure	4,000
1921-22, Revised Estimate	4,50,000
1922-23, Budget Estimate	27,000

The estimates for the current year provided for an outlay of Rs. 20,000 in the North-West Frontier Province and Rs. 7,000 in Rajputana. The expenditure is fluctuating in character, and we understand that no provision will be required in 1923-24.

TERITORIAL AND POLITICAL PENSIONS.

The estimate for 1922-23 compares with the revised estimate for 1921-22 and the actual expenditure for 1913-14 as follows :—

	Rs
1913-14, Actual Expenditure	33,11,000
1921-22, Revised Estimate	30,69,000
1922-23, Budget Estimate	31,42,000

We are informed that most of the grants falling under this head are perpetual or hereditary. The policy is to extinguish life grants gradually either by withdrawing them entirely or by reducing them considerably at each succession. Some reduction, though slight, should therefore take place every year, if this policy is followed and if new grants are restricted.

The increase in the current year has occurred mainly in the United Provinces and is largely due to local causes such as payment of arrears and commutation of certain pensions. It is anticipated that there will be a reduction of Rs. 1,08,000 in the provision required under this head for 1923-24 as compared with the Budget estimate for 1922-23.

CONCLUSION.

There will be an automatic saving of Rs. 1,08,000 in 1923-24, and we recommend that endeavour be made to effect progressive reductions in the amount of these pensions.

SUPERANNUATION ALLOWANCES AND PENSIONS.

• The estimate for 1922-23 compares with the revised estimate for 1921-22 and the actual expenditure for 1913-14 as follows :—

	Rs.
1913-14, Approximate Expenditure	3,25,05,000
1921-22, Revised Estimate	3,49,65,000
1922-23, Budget Estimate	3,54,27,000

2. This expenditure is sub-divided under the main heads shown below :—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
Superannuation and retiring allowances. Service and other funds	2,20,04,500	3,31,23,500	3,30,97,500
Compassionate allowances	2,01,600	31,700	33,700
Gratuities	47,200	58,100	47,900
Pensions for distinguished and meritorious services	83,100	19,300	21,400
Commutation of pensions	60,000	12,6,200	14,80,100
Miscellaneous	8,600	1,46,200	1,46,400
	3,25,05,000	3,49,65,000	3,54,27,000
<i>Deduct</i> —Recoveries on account of contributions to pensions and service funds, etc	22,55,000	25,93,000	25,00,000
Net total	3,02,50,000	3,23,72,000	3,29,27,000

3. The figures shown for the different years are not strictly comparable owing to an important change made on the 1st of April 1921 in the basis of the division of pensionary charges between the Central and Provincial Governments. Formerly all sterling pensions were debited to the Central Government and rupee pensions were, with certain exceptions, brought to account in the Provinces where the payment was made, irrespective of the Government under which the pensioner had served. These arrangements continue in respect of pensions sanctioned before the 1st of April 1921, but the incidence of pensions subsequently granted is now divided among the various Governments under which an officer has served in accordance with his length of service under each. It has not been possible to form an estimate as to the ultimate effect which this change will have on the distribution of the total pensionary charges between the Central and Provincial Governments. It may be mentioned, however, that the Central Government's liability for pensionary charges distributed between England and India is as follows:—

	India.	England.	Total (Rs. 15 = £1).
	Rs.	£	Rs.
1913-14, Approximate Expenditure	16,35,000	2,054,647	3,25,05,000
1921-22, Revised Estimate	29,91,000	2,131,600	3,19,65,000
1922-23, Budget Estimate	33,22,000	2,140,300	3,54,27,000

4. We have also been unable to obtain within the limited time available information as to the ultimate cost to the Central Government of the revision of pension scales which has been undertaken in recent years. We recommend that before any such revision of pensions is adopted in the future an actuarial calculation should be made of the cost to the State. We understand that the regulations governing pensions are at present under revision with the object of simplifying the present elaborate procedure and we desire to emphasise the importance of ensuring that this revision is not accompanied by any increase in the non-effective charges.

5. We are informed that commutation of a portion of pension is permitted in certain cases subject to limitations designed to ensure that the balance of pension shall be sufficient to maintain the pensioner, and that the commutation rates have recently been revised with reference to the higher rates of interest now prevailing. A uniform mortality rate is apparently assumed for all subordinate services in India and we recommend that the possibility be examined of adopting different rates of mortality for different classes of pensioners.

6. We have made enquiries as to the charges made for pension liability in the case of officers under the foreign service rules. The previous rates of contributions were as follows :—

	Proportion of salary	
	Leave and pension.	Pension only
Officers under the European service leave rules	$\frac{5}{8}$	$\frac{1}{4}$
Other officers in superior service including officers of the military and marine services	$\frac{1}{4}$	$\frac{1}{4}$
Officers in inferior service		$\frac{1}{8}$

These percentages have been periodically reviewed and further investigation with regard to them is at present in progress. The necessary calculations have been completed only in the case of officers in the Indian Civil Service in respect of whom it has been decided to raise the rates of contribution as follows :—

	Previous rate.	Revised rate.
For leave and pension	$\frac{5}{8}$	$\frac{3}{4}$
For pension only	$\frac{1}{8}$	$\frac{1}{4}$

The new rates, which came into force from the 27th January 1922, have been extended temporarily to military officers pending a complete investigation of the contribution properly leviable in their case.

7. No uniform practice obtains of debiting commercial departments with pensionary charges, but we understand that the Government of India propose that the charge should in all cases be taken into account and we recommend that this proposal be given effect to.

8. The bulk of the existing pensionary charges is of a *quasi-contractual* nature and is not susceptible of reduction, except in the case of the temporary addition to pensions of less than Rs. 45 a month which was granted in January 1921 to meet the enhanced cost of living. The estimated annual cost of this concession, including provincial and central pensions, is about Rs. 64 lakhs per annum. In the case of military pensions the increase is approximately Rs. 41 lakhs per annum, while for civil pensions charged directly to the Central Government the increase is Rs. 1 lakh. This scheme is open to reconsideration after it has been in operation for three years, and it should then, in our opinion, be reviewed with reference to the price conditions prevailing at that time. A considerable reduction has already occurred in the cost of living and there are indications that prices will fall still further. Some saving should, therefore, be possible in the pensionary charges for the last three months of 1923-24 and in subsequent years, the main saving accruing in the military estimates.

9. We are informed that the estimate at present proposed for 1923-24 is Rs. 3,47,97,000, resulting from a reduction of expenditure in England of £69,300 and an increase in India of Rs. 4,10,000, the net saving being Rs. 6,30,000.

CONCLUSIONS.

There will be an automatic reduction of Rs. 6,30,000 in 1923-24 and we recommend that :—

- (1) an actuarial examination be made of the cost to the state of any proposals put forward in future for the revision of pension scales before these are sanctioned; and
- (2) a uniform practice of debiting commercial departments with pensionary charges be adopted.

STATIONERY AND PRINTING.

The estimates of net expenditure and receipts for 1922-23 compare with the revised estimates for 1921-22 and the actuals for 1913-14 as follows :—

	Expenditure (net).	Receipts.
	Rs.	Rs.
1913-14, Actuals	32,12,000	6,17,000
1921-22, Revised Estimates	97,68,000	9,41,000
1922-23, Budget Estimates	75,56,000	17,49,000

2 The expenditure, which shows an increase of 138 per cent since 1913-14, is distributed as follows :—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
Stationery Office	2,77,711	3,47,600	3,57,900
Government Presses	17,09,102	38,04,400	38,04,800
Stationery Stores	33,33,229	90,00,000	67,00,000
Miscellaneous	682	..	1,300
	53,20,724	1,31,52,000	1,08,64,000
Less recoveries	50,82,420	1,01,05,000	70,15,000
	2,38,304	30,47,000	38,49,000
Charges in Major Administrations	12,89,696	30,14,000	10,14,000
Charges in Minor Administrations	1,54,000	2,43,000	2,70,000
	16,32,000	63,04,000	51,33,000
Expenditure in England (Rs. 15 = £1)	15,80,000	34,64,000	27,61,000
	32,12,000	97,68,000	78,94,000
Deduct—Lump out made by Assembly			(a) 3,38,000
TOTAL	32,12,000	97,68,000	75,56,000

(a) The actual deductions made by the department under the various sub-heads amount to Rs 3,47,570

A detailed enquiry into the expenditure of this Department was made last year by Mr. F. D. Ascoli, I.C.S., who was placed on special duty for the purpose. That officer suggested considerable economies to which we shall refer in detail in dealing with the sub-heads affected, and many of these economies were taken into account in framing the current year's budget.

3. Stationery Office—

	Rs.
1913-14, Actual Expenditure	2,77,711
1921-22, Revised Estimate	3,47,600
1922-23, Budget Estimate	3,57,900

The estimate for 1922-23 is made up of Rs. 1,87,890 on account of administration and staff and Rs. 1,70,010 for allowances, materials, contingencies, etc. This office purchases and distributes paper and other articles of stationery for all Departments of the Central Government, for all Provincial Governments, excepting Bombay and Madras, and for certain *quasi* public bodies. Articles purchased in England are only ordered by the Stationery Office and distributed, the purchases being effected by the High Commissioner for India. The Controller is in general charge of all the printing work of the Government of India in addition to the stationery and stamps staff. We are informed that the value of stationery alone distributed in 1920-21 amounted to Rs. 1,10,00,000. Provincial Governments and commercial departments pay 5 per cent. on the value of stores issued to them on account of administrative

charges and recoveries on this account in 1920-21 amounted to about Rs. 2½ lakhs. The net cost of the office is therefore small in comparison with the business transacted. Mr. Ascoli suggested that the temporary staff costing about Rs. 22,000 might be dispensed with, but we understand that this staff is being retained until the revised stationery rules have effected a decrease of work. We consider that it should be possible to dispense with part of this temporary staff in 1923-24 and we recommend that a reduction of Rs. 10,000 be made in the provision for that year on this account. Extra expenditure will, however, be incurred under this head on account of—

(a) the Printing Clearing Office (Rs. 28,000), and

(b) the Forms Store Department (Rs. 1,02,000)

the functions of which are described in paragraphs 4 and 8 below.

4. *Government Presses—*

The expenditure is distributed as follows :—

	1913-14	1921-22	1922-23.
	Rs	Rs	Rs
Central Presses (including Contractor's printing)	13,32,039	31,28,670	30,16,940
Simla Press	2,37,496	4,04,350	5,25,120
Monotype Press, Simla	81,049	1,76,070	2,05,270
Private Secretary's Press	30,648	50,760	49,170
Foreign and Political Department Press	24,777	38,070	
Residency Press (Mysore)	3,093	7,480	8,300
TOTAL	17,09,102	38,04,400	38,04,800

Of the lump cut made by the Assembly Rs. 1,47,670 were taken against this head, thus reducing the grant for 1922-23 to Rs. 36,57,130.

The Central Presses comprise two at Calcutta and one at Delhi. In addition to the work of these presses a large number of forms, mainly Posts and Telegraphs and Army forms are printed by a private contractor, at an estimated cost of Rs. 9 lakhs, exclusive of paper and packing materials. The work of the Simla Press and the Monotype Press at Simla is closely connected with that done at the Central Presses and it will be convenient to consider them altogether. In dealing with the work of these Presses Mr. Ascoli observed :—“ The whole of the printing system is uncontrolled and wasteful. The presses are antiquated and organised on an unsound basis, there is no control or attempt to control printing work generally. While one press is idle and cannot keep its men employed, another may be worked overtime”. In pursuance of his advice, a printing clearing office, estimated to cost Rs. 28,000 in 1923-24, has been established to regulate the distribution of work to the various presses. The main functions of this office are :—

(a) to ensure the proper observance of the printing rules ;

(b) to ensure an even flow of work to the various presses ; and

(c) to see that no unauthorised work is sent to the presses and that authorised work is submitted in proper and economical form.

With certain exceptions, such as work classed as immediate or secret and the proceedings of the Council of State and the Legislative Assembly, all the printing work of the Government of India Secretariat offices and Army Headquarters is now sent to the press through the printing clearing office. This arrangement is likely to result in a considerable decrease in the volume of work sent to the press, but we are not satisfied that there is sufficient control over the work classed as immediate, which can be sent direct to any press under the signature of an officer not below the status of an Assistant Secretary or Registrar. A proof copy of all such work is sent to the printing clearing office, which is authorised to criticize the urgency and necessity of the work, but as the office is in charge of a Superintendent and the Controller's

headquarters are at Calcutta, it is difficult for the clearing office to intervene effectively. We suggest that the Superintendent of this office should be authorised to bring cases in which, in his opinion, work has been improperly classed as immediate directly to the notice of the department of the Government of India in charge of Stationery and Printing, at present the Industries Department, so that the question may be taken up with the Department sending the work to the press.

5. The greater part of the printing of the Government of India is done at Calcutta where both paper and labour are cheaper than at Delhi or Simla. Mr. Ascoli observed that the division of functions between the two Calcutta presses is hopelessly bad and he proposed to reorganize them into two self-contained units, and at the same time to amalgamate the two Simla presses into one and to reduce the size of the Delhi press. He expected to effect large economies by the substitution of new and up to date machinery for hand labour, and estimated that an annual saving of Rs. 9 lakhs could be obtained by this means. We understand that the machinery required at Calcutta has not yet been ordered and that the reorganization has been held up pending an expression of opinion by this Committee on the question of continuing the system of Government printing. In this connection it has been represented to us that it is essential for the Government of India to have their own presses at Simla and Delhi for work classed as immediate and for all secret work, and that it is economical to employ these presses during the slack seasons on other work. It has also been represented that Government can do its own printing work at cheaper rates than private presses, and this contention has been supported by figures quoted by private presses for particular jobs, notwithstanding the fact that the remuneration of the employes of the Government presses is generally higher than the rates paid by private firms. This fact raises a presumption that the true cost of Government printing is underestimated, but we are assured that the costing in the Government presses is complete except for the exclusion of a few items such as interest on capital, leave allowances out of India, and pensions and gratuities. We recommend that the system of costing be revised so as to include all proper charges. The difficulties which have been experienced in getting the Government forms printed by private contractors are also put forward as a ground for continuing the system of Government printing. On the whole, we are satisfied that the system is the most economical under present conditions and we recommend that the reorganization proposed by Mr. Ascoli be proceeded with as soon as possible in order to obtain the benefit of the resultant economies at the earliest possible date.

6. We consider that the opportunity of the reorganization should be taken to revise the rates of pay given at the Government presses. Mr. Ascoli observes that, with the exception of skilled operators, the salaries or rates of wages are much in excess of market rates and have in the past few years increased by from 40 to 75 per cent. It has been represented to us that the present rates were fixed only two years ago and failed to give satisfaction and that any reduction now would cause serious discontent. We consider, however, that the matter might well be reconsidered when the bulk of the compositors are being replaced by machine hands. Mr. Ascoli also brings to notice that all permanent hands, with the exception of piece-workers, are entitled to leave under the Fundamental Rules, and he estimates that every man will take on an average three months' leave on full pay every year and that this would necessitate keeping a leave reserve costing Rs. 4 lakhs. We deal elsewhere in our Report with these leave rules and will only remark here that we consider them unsuitable to the conditions of industrial labour.

7. As the reductions of establishments contemplated by Mr. Ascoli cannot be fully effected until the new machinery is installed, it is difficult to estimate the possible savings in 1923-24. The control to be exercised by the printing clearing office should materially reduce the work of the presses, and the same result is to be expected from various other reforms proposed by Mr. Ascoli. We understand that some of these proposals are still under consideration and that none of them have been finally rejected. For instance his scheme for the reorganisation of the Publication Branch is still under discussion with the

several departments of the Government of India, and suggestions for economy, such as the limitation of the number of copies of Government publications to be printed and the curtailment of free issues, are being held up. We recommend that an early decision be arrived at on all these proposals so as to effect the resultant economies in 1923-24. In this connection we have observed that many notifications relating to Minor Administrations are included in the Gazette of India and circulated throughout the country, though these are of local interest only. We suggest that it be considered whether such matter cannot be included in a separate supplement for local circulation. We consider that, apart from payments to the printing contractor with which we deal below, the cost of the main presses should be reduced in 1923-24 by Rs. 6 lakhs.

8. The provision under "Supplies and Services" for the Central Presses includes Rs. 9 lakhs for payment to the Contractor for Government Printing. The history of this contract illustrates the disadvantages of allowing one firm to obtain a monopoly. The present contractors obtained the contract in 1908 on tendering at 29 per cent. below the tender of the firm which previously did the work of printing Government forms. Two years later, the contractors represented that they were working at a great loss and asked for a revision of the rates. Government granted an increase of 16½ per cent., the contractual rates as modified being still 12½ per cent. lower than the tender of the recent holder of the contract. The contract expired in 1918, when the numbers of forms required by the Army and Post and Telegraph Departments were enormously greater than they had been before. It was considered practically impossible in that year, when the war was still raging, to find another contractor who would equip a press for the turning out of these forms, and the contract had to be renewed with the same firm at a further increase of 16½ per cent. over the rates paid in 1908, making a total of 33½ per cent. Again in 1921, when this extending contract expired, it was once more renewed for a period of three years at rates 75 per cent. over the contractual rates of the previous contract (1918-21). As Government at that time had no arrangements for its own storage and distribution of forms, it was impossible to split up the contract among a number of smaller contractors and, therefore, the high terms insisted upon by the contractor had to be accepted. The renewed contract will expire in April 1924, and we are informed that it has been decided to try to divide the contract among a number of printing firms, and that tenders have been invited for a new contract for a period of 7 years. If satisfactory offers are not received we would suggest calling for tenders for alternative periods of 3, 5, 7 and 10 years.

One alteration, making for economy, was provided for when the contract was revised in 1921. Under the present contract the forms are stored and distributed by the printing contractor who has no interest in checking consumption, and the arrangement has naturally tended to encourage extravagance. We are informed that in April 1923 a special Store for Forms will be established at the Calcutta Stationery Office and that the work of distribution will then be taken over by the Stationery Department. The Store establishment is estimated to cost Rs. 1,02,000 in 1923-24, but there will be a saving of Rs. 1,08,000 on account of the remuneration which is at present paid to the contractor for undertaking the work of distribution. It is also anticipated that the change will result in material reductions in the consumption of forms and in consequence of these reductions and of the revision of the forms used by the Army Department, we consider that there should be a saving of Rs. 3 lakhs in the expenditure on forms printed by the contractor.

9. The other Government presses call for little remark. The Private Secretary's Press carries out the printing work of His Excellency the Viceroy and the Private Secretary, which is mainly urgent and secret. The cost of this press is not, we think, excessive and we make no recommendation. The Foreign Office Press has been closed in consequence of the refusal of the Legislative Assembly to provide funds for it in the current year, and we understand that it has been decided to close the Mysore Residency Press, saving Rs. 8,000. Other small presses are dealt with under the head—Charges in Minor Administrations.

10. The result of the above recommendations will be to reduce the grant under Government presses in 1923-24 to Rs 27,88,000, which is Rs. 10,16,800 below the original budget estimate for 1922-23 and Rs. 8,69,130 below the estimate as reduced by the Assembly.

11. *Stationery Stores—*

	Rs.
1913-14, Actual Expenditure	88,33,229
1921-22, Revised Estimate	90,00,000
1922-23, Budget Estimate	67,00,000

Of the lump cut made by the Assembly Rs 1,99,000 were taken against this head, and Rs. 5,00,000, which had been included for the purchase of machinery, was subsequently transferred to the High Commissioner's budget, thus reducing the budget grant to Rs. 60,00,100. The bulk of this expenditure is incurred on the purchase of paper in India. The Stationery Stores at present supply the whole of India except Madras and Bombay. The Stores purchased in India are obtained on contracts ordinarily made for one year and we are informed that tenders are invariably called for. The great increase in expenditure in recent years is due almost entirely to the rise in the price of paper, the consumption of which appears to have decreased. Approximately 9,000 tons were purchased in 1913-14, whereas in 1921-22 the consumption was 8,310 tons and the estimated consumption in the current year is 7,500 tons. The large reduction shown in the budget for the current year compared with the revised estimate for 1921-22 was based mainly on the fall in prices by about 33 per cent. as shown in the tenders for paper received about a year ago. The possibility of a further reduction next year depends on two factors, *viz.*, consumption and prices. With regard to consumption, nearly half the total issues of stationery are taken by the Government presses, and the measures to which we have referred above for reducing the amount of printing should result in a corresponding reduction in the paper consumed. The consumption of stationery in Government offices should also be reduced as a result of the system of monetary allotments, which has recently been introduced, and of other measures of economy such as the re-standardising of envelopes. We understand that the monetary allotments are at present fixed on a tentative basis varying from Rs. 18 per head of officers and ministerial establishment in the Departments of the Secretariat to Rs. 8 or 10 per head in the accounts offices. We recommend that these standards be reviewed as soon as sufficient experience has been gained. With regard to prices, we understand that the tenders recently received at Calcutta for the coming year's supply show an average reduction of Rs. 27 per ton or about 4½ per cent. Taking this into account, together with the reduction of consumption, we consider that the provision for 1923-24 (exclusive of machinery) should not exceed Rs. 50,45,000, which is Rs. 16,55,000 below the original budget estimate for 1922-23 and Rs. 9,55,100 below the estimate as subsequently reduced. The whole of this reduction does not, however, represent a saving to Central revenues, as it will be accompanied by a decrease in recoveries, which are dealt with in the next paragraph.

12. *Recoveries—*

These are distributed as follows :—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
Stationery supplied to Provincial Governments	89,07,086	71,52,750	41,58,150
Stationery supplied to the Posts and Telegraphs Department	4,35,763	13,30,000	13,31,000
Printing works done for the Posts and Telegraphs and Census Departments	7,39,571	16,22,000	15,26,000
For rounding . . . . .	...	250	—150
TOTAL	50,82,420	1,01,05,000	70,15,000

We understand that the recoveries were greatly over-estimated in the current year's budget because the effect of the fall in the price of paper was not taken into account. The revised estimates for 1923-24 are only Rs. 58,42,000, *viz.*, Rs. 33,78,700 from Provincial Governments plus Rs. 24,63,300 from the Posts and Telegraphs and Census Departments. In view of the further fall in prices and the probability of reduced demands from Provincial Governments on account of financial difficulties and from the Census Department, the recoveries next year are likely to show a still further reduction. We understand that the Government of Bihar and Orissa have decided to make their own arrangements for stationery next year and that the departmental estimate, based on the latest information as to probable demands is Rs. 52,50,000. We are not in a position to question this figure, and this reduction of Rs. 17,65,000 must be set against the savings which we anticipate under other heads.

13. Charges in Major Administrations—

	Rs.
1913-14, Actual Expenditure	12,39,696
1921-22, Revised Estimate	30,14,000
1922-23, Budget Estimate	10,14,000

These charges are incurred on stationery stores supplied to officers of the Central Government from the Madras and Bombay Stationery Stores and on printing work done for such officers at the various provincial presses. We understand that steps have been taken :—

- (a) to restrict all indents on the Bombay and Madras Stationery Stores by monetary allotments, similar to those in force for indentors on the Calcutta Central Stores, and
- (b) to limit printing at Local Government presses to specific offices, to prohibit work at such presses in the absence of proper sanction and to restrict such printing in accordance with the printing rules restricting indents on the Government of India presses.

Mr. Ascoli anticipated that by these means an annual saving of Rs. 2 lakhs could be effected, but we are informed that the expenditure under this head has actually been increased on account of claims put forward by Provincial Governments for printing work which they previously performed gratuitously. For instance, a sum of Rs. 1,24,000 has to be paid to the Bengal Government in lieu of Rs. 17,000 provided in the Budget. The revised estimate has, therefore, been raised to Rs. 11,98,000. We understand that considerable economy could be effected by standardising the forms used in the Income-tax, Customs, and other Departments and getting them printed at the Central Government Press, and we recommend that this work be undertaken as soon as possible. Meanwhile we consider that some saving should result from the restrictions already introduced and we recommend that the grant for 1923-24 be fixed at Rs. 10,40,000, a reduction of Rs. 1,58,000 on the revised estimate, but an increase of Rs. 26,000 on the budget estimate.

14. Charges in Minor Administrations—

The greater part of this expenditure is incurred in the North-West Frontier Province, as shown by the following figures :—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
North-West Frontier Province	1,09,250	1,54,000	1,83,000
Other Minor Administrations	44,750	89,000	82,000
TOTAL	1,54,000	2,43,000	2,70,000

Mr. Ascoli proposed to reduce the size of the North-West Frontier Province press by one-half and to reorganise the whole of the stationery system of the Province and we understand that these proposals have been accepted.

It is also proposed to abolish the small presses in Rajputana and Central India and to amalgamate the Coorg and Bangalore presses. In view of these economies we recommend that the grant for 1923-24 be reduced to Rs. 2,00,000, effecting a saving of Rs. 70,000.

15. *Expenditure in England—*

	Rs.
1913-14, Actual Expenditure	15,80,000
1921-22, Revised Estimate	34,64,000
1922-23, Budget Estimate	27,61,000

This is distributed as follows :—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
Leave allowances		18,000	52,500
Stationery supplies from England	14,97,000	32,40,000	24,73,500
Stationery, printing and bookbinding for the India Office	83,000	1,31,000	1,15,000
Stationery, printing and bookbinding for the High Commissioner's office . . . . .	...	75,000	1,20,000
TOTAL	15,80,000	34,64,000	27,61,000

As observed in paragraph 11 above, the sum of Rs. 5,00,000 for new machinery was transferred to this head thus raising the provision for "stationery supplies from England" to Rs. 29,73,500 and the total budget estimate to Rs. 32,61,000. We understand that Rs. 2 lakhs out of the Rs. 5 lakhs provided for the purchase of machinery in the current year will probably lapse owing to the holding up of the scheme for reorganization of the Calcutta presses. We are informed that the total expenditure required for this scheme is estimated at Rs. 7 lakhs and that it is proposed to provide Rs. 3 lakhs on this account in the coming year and the remaining Rs. 4 lakhs in subsequent years. Rs. 2 lakhs will also be required next year to complete the Delhi and Simla presses. A total provision of Rs. 5 lakhs is thus required in 1923-24. As this expenditure will make for considerable economy, we do not think that it should be deferred.

16. We have not been able in the time allowed to obtain complete information as to the stocks held at the stationery office, but, judging from the results of our enquiries, it is not improbable that they are excessive and we recommend that the matter be examined with a view to reducing next year's indent. Apart from this possible reduction we consider that the demand for English stationery should be reduced by the various economies to which we have referred above, and after making allowance for the fall in prices we recommend that the provision for stationery supplies in 1923-24, exclusive of machinery, be limited to Rs. 15,00,000.

17. We are informed that the provision for leave allowances cannot be reduced next year, but, as we have pointed out in dealing with the estimates for General Administration, there should be a saving of Rs. 40,500 in net expenditure at the India Office and of Rs. 30,000 in the High Commissioner's Office. With the above modifications the grant for expenditure in England in 1923-24 should not exceed Rs. 22,18,000, a reduction of Rs. 5,43,000 on the original estimate for 1922-23 and of Rs. 10,43,000 on the expanded grant.

18. The above recommendations have been discussed with, and generally accepted by, the Industries Department. Their effect will be to reduce the net expenditure in 1923-24 to Rs. 65,27,900, giving a saving on the current year's budget of Rs. 10,28,100, exclusive of any further saving that may be effected by a reduction in the stocks held at the stationery office.

CONCLUSIONS.

Having reviewed the expenditure for Stationery and Printing we recommend that :—

- (1) the present system of printing at Government presses be continued, but that the presses be reorganized on the lines recommended by Mr. Ascoli, and the system of costing be revised;
- (2) the introduction of the other economies suggested by Mr. Ascoli be expedited, including the reorganization of the Publication Branch;
- (3) the press employees be removed from the operation of the fundamental rules for leave purposes and placed under special leave rules;
- (4) if satisfactory tenders are not received for a new contract for printing Government forms, fresh tenders be invited for alternative periods of 3, 5, 7 and 10 years;
- (5) the forms used in the Departments of Income-tax, Customs, etc., be standardised and printed at the Central Government Press;
- (6) the stocks held at the Stationery Office be examined with a view to reduction; and
- (7) the provision for 1923-24 be limited to Rs. 65,19,000, effecting a saving of Rs. 10,37,000 in addition to any further saving that may be secured by a reduction of stocks.

MISCELLANEOUS.

The estimates for 1922-23, including a supplementary grant of Rs. 20,000, compare with the revised estimates for 1921-22 and the actual expenditure in 1913-14 as follows :—

	Rs.
1913-14, Actual Expenditure	1,12,57,000
1921-22, Revised Estimate	97,95,000
1922-23, Budget Estimate	69,18,000

2. This expenditure is distributed as follows .—

	1913-14.	1921-22.	1922-23
	Rs.	Rs.	Rs.
HEADQUARTERS	} 84,10,000 {	9,89,000	10,72,000
MAJOR PROVINCES		33,35,000	27,10,000
MINOR ADMINISTRATIONS	3,97,000	19,43,000	7,79,000
ENGLAND (Rs. 15 = £1)	74,50,000	35,28,000	23,37,000
SUPPLEMENTARY GRANT			20,000
TOTAL	1,12,57,000	97,95,000	69,18,000

3. This expenditure is largely of a fluctuating character and a comparison cannot usefully be made between different years. The accounts for 1913-14 included charges on account of civil furlough and absence allowances which are in the present budget distributed over the appropriate heads of account.

HEADQUARTERS EXPENDITURE.

4. The main items included in the provision for expenditure at headquarters during the last two years are the following:—

	1921-22.	1922-23.
	Rs.	Rs.
Special Commissions of Enquiry	6,39,300	4,95,000
Reserve at the disposal of the Finance Department		3,00,000
Local Clearing Office	51,200	70,200
Cost of books and periodicals	79,200	79,200
Rents and taxes	35,000	35,000
Contributions	56,800	85,900
Durbar presents and allowances to Vakils	40,500	28,800
Other charges	87,000	27,900
TOTAL	9,89,000	10,72,000

5. *Special Commissions of Enquiry.*—We are informed that the revised estimate for 1922-23 is Rs. 6,03,400 and the present forecast for 1923-24 Rs. 1,85,000. We attach a statement supplied to us furnishing particulars of the conferences and committees which have been held since 1913-14 to date (Appendix A). Excluding conferences of an all-Empire character in which India bears only a portion of the charge and special enquiries held by a single officer, it appears that the total expenditure from central revenues on 65 Committees during this period has been about Rs. 68 lakhs. We recognise that recourse to Committees is in many cases desirable, but from a perusal of the list, we cannot but feel that their appointment has not in all cases been justified, and that the results obtained have not always been commensurate with the expenditure involved and with the amount of time and labour occupied in the preparation of cases for the Committees and in the subsequent consideration of their reports. We recommend that this elaborate and expensive procedure for the settlement of current problems be resorted to only in exceptional cases.

6. *Reserve at the disposal of the Finance Department.*—This is intended to meet urgent and unforeseen demands for votable expenditure which is subsequently regularised by obtaining supplementary grants from the Assembly. We see no objection to this procedure provided that the total amount of the reserve is small and its use is strictly limited to cases of the nature specified.

7. *Local Clearing Office.*—We are informed that this office was established in July 1920 under the Indian Treaty of Peace Order 1920 and that its main functions are to settle pre-war debts between British nationals in India and enemy nationals, to deal with claims of British Indian nationals in respect of their interests in pre-war enemy territory and to account to German and other clearing offices for the liquidation of enemy property in India; also that part of the cost of the office will be covered by a percentage, estimated to yield Rs. 1 lakh, charged upon claims paid to British nationals. We understand that in July last 2,600 claims had been disposed of and 5,268 were pending, and it is stated that a further two years will be required to dispose of outstanding cases. In paragraph 14 of our report on General Administration we have proposed that this office should be amalgamated with the Peace Treaty Branch.

8. *Other items.*—The cost of books and periodicals, Rs. 79,200, includes payments of Rs. 55,200 to Reuter's Agency under contract and of Rs. 24,000 to the Indian News Agency. The provision of Rs. 35,900 for contributions, includes grants to the Victoria Memorial, Calcutta (Rs. 1,800), and the Goona Agency Local Fund. As this agency has been abolished, this grant will not be required in future years.

EXPENDITURE IN THE MAJOR PROVINCES.

	Rs.
1921-22, Revised Estimate	33,35,000
1922-23, Budget Estimate	27,10,000

9. This expenditure is distributed as follows:—

	1921-22.	1922-23.
	Rs.	Rs.
Madras	6,06,000	15,000
Bombay	56,000	40,000
Bengal	75,000	48,000
United Provinces	27,100	27,000
Punjab	26,000	33,000
Burma	3,000	3,000
Bihar and Orissa	8,000	7,000
Central Provinces	25,20,000	25,19,000
Assam	14,000	18,000
TOTAL	33,35,000	27,10,000

The main item of expenditure is a payment of Rs. 25 lakhs as quit rent to His Exalted Highness the Nizam for the lease of the province of Berar. We understand that the arrangement under which this charge is borne by the Central revenues forms an integral part of the settlement between the Central Government and the Provinces and is not open to reconsideration while the present settlement is in force. The remaining charges represent miscellaneous payments arising out of the war, which will be reduced in future years, and various compensations to local bazaar funds and States for loss of excise and other revenue. We are informed that most of these payments are of a provincial character and that a revision of the present incidence is under consideration which will probably result in a saving of Rs. 45,000 to Central revenues.

MINOR ADMINISTRATIONS.

	Rs.
1913-14, Actual Expenditure	3,97,000
1921-22, Revised Estimate	19,43,000
1922-23, Budget Estimate	7,79,000

10. This expenditure is distributed as follows:—

	1913-14.	1921-22.	1922-23.
	Rs.	Rs.	Rs.
North-West Frontier Province	36,000	1,10,000	1,12,000
Baluchistan	2,04,000	2,22,000	2,34,000
Delhi	35,000	14,87,900	2,78,400
Coorg	13,000	14,230	12,160
Ajmer	16,000	16,170	16,470
Rajputana	22,000	43,220	50,950
Central India	60,000	53,450	62,150
Hyderabad	4,000	2,270	3,770
Bangalore	7,000	9,000	9,030
TOTAL	2,97,000	19,43,240	7,79,430

11. *North-West Frontier Province (Rs. 1,12,000).*—The estimate takes into account a reduction of Rs. 1 lakh as part of the lump cut made by the Assembly in the estimates of this administration as a whole. The original provision included Rs. 1,38,000 for miscellaneous and unforeseen charges, the main items being Rs. 88,000 for grain compensation, Rs. 30,000 for a

reserve at the disposal of the Chief Commissioner, and Rs. 10,000 for the regrant of savings in the contract grant. The provision for gain compensation allowance will not be required owing to the fall in prices. We consider that a reserve is unnecessary, and that expenditure not provided for in the budget should be postponed until additional funds can be obtained in the ordinary way. The charges of Rs. 46,000 for petty establishment are mainly on account of copyists and are set off by the copying fees charged which, we understand, have been raised. The provision for Durbar presents should be reduced to the actuals of 1920-21, *i.e.*, Rs. 14,000, saving Rs. 4,000.

12. *Baluchistan (Rs. 2,34,000)*.—This expenditure comprises compensations of a political character and we make no recommendation.

13. *Delhi (Rs. 2,78,900)*.—The original estimate was Rs. 3,80,000, but the lump cut of Rs. 1,00,000 made by the Assembly on the estimates of this administration as a whole was provisionally deducted from this head, being subsequently distributed over other heads. The main item is a grant of Rs. 3,10,000 to the Notified Area Committee intended to cover the following expenditure on the upkeep of old Delhi:—

	Rs
Lighting	50,000
Drainage	47,000
Conservancy	67,000
Roads and other Public Works	1,28,000

We understand that the amount provisionally included in the estimates for 1923-24 is Rs. 3,34,000. It is, in our opinion, questionable whether the Government of India should continue to bear expenditure on this scale on the maintenance of old Delhi in view of the heavy outlay being incurred in developing New Delhi, which, it is said, will be ready for occupation in 1925. We consider that this grant should be progressively reduced, particularly as prices are falling, and should be limited to Rs. 2,50,000 in 1923-24, a saving of Rs. 30,000 on the current year's provision and of Rs. 84,000 on the provisional estimate for 1923-24. As in the case of the North-West Frontier Province, we are of opinion that it is not necessary to maintain a reserve at the disposal of the Chief Commissioner and a further saving of Rs. 15,000 should be made.

14. *Rajputana (Rs. 50,950)*.—The bulk of this expenditure is required for the payment of compensation to the Kishangarh and Sirahi Durbars.

15. *Other Administrations*.—We make no recommendation with regard to the small expenditure in other areas.

EXPENDITURE IN ENGLAND.

	Rs
1913-14, Actual Expenditure	74,50,000
1921-22, Revised Estimate	32,23,000
1922-23, Budget Estimate	23,37,000

16. This is subdivided as follows:—

	£
Expenditure under control of Secretary of State	123,600
Expenditure of High Commissioner	27,200
TOTAL	155,800

Rupee equivalent at Rs. 15 = £1 . Rs. 23,37,000

The main items are —

	£
Contribution towards expenses of Secretariat of League of Nations	76,000
Examination for I. C. S., etc.	2,400
International Labour Conference	8,000
Indian Delegates to League of Nations	4,000
Secret Service Money	8,000
Officers specially employed	11,000
Commission on freight of stores and dock dues	6,900
Leave allowances	3,200
Copies of Taswir-i-Akhbar	5,200

Particulars of some of these items were communicated to us by telegram and we have no detailed information with regard to them.

We have ascertained that the estimate for 1923-24 for expenditure in England is Rs. 15,57,000, a reduction of Rs. 7,80,000.

GENERAL.

We understand that the estimate at present put forward for the total expenditure under the head Miscellaneous in 1923-24, including expenditure in England, is Rs. 56,93,000, a reduction of Rs. 12,25,000 on the estimates of 1922-23. The reductions which we have suggested in the expenditure provided for in this estimate amount to Rs. 1,78,000 and we recommend that the total grant be reduced to Rs. 55,15,000, a saving of Rs. 14,03,000.

CONCLUSIONS.

Having reviewed the expenditure under the head Miscellaneous we recommend that:—

- (1) large Commissions and Committees of Enquiry be appointed only in exceptional circumstances, and
- (2) the provision under this head be limited to Rs. 55,15,000, saving Rs. 14,03,000.

APPENDIX A.

Statement showing the cost and other particulars of Commissions, etc., from 1913-14 to 1922-23 inclusive.

Name of Committee	Cost	Whether appointed by Government or at the instance of the Legislature	Remarks of the Departments
<i>Home Department</i>			
1. Jails Committee, 1920-21	2,28,113	Appointed at the instance of the late Legislative Council	Acceptance of recommendations will lead to large increase of expenditure which will fall on provincial revenues except in case of Delhi, N W F. P. and the Andamans. No estimate of the future increased expenditure can be given. The abolition of the Andamans as a penal settlement as a result of this report will ultimately result in a substantial saving to central revenues but an estimate is impossible at present.
2. Komagata Maru Enquiry Committee, 1914-15	29,823	Government	No financial issue involved.
3. Sedition Committee, 1918	89,619	Government	
4. Disorders Enquiry Committee, 1919-20	85,959	Government	
5. Repressive Laws Committee, 1921	15,000	Legislature	
6. Press Laws Committee (Not included in Demand No. 44)	15,000	Legislature	
7. Arms Rules Committee, 1922 (Not included in Demand No. 44)	17,991	Legislature	If the recommendations are accepted revenue is likely to decrease on account of certain reductions in fees. This may be counterbalanced, however, by an increased number of applications for licenses.
8. Railway Police Committee, 1921	1,73,132	Government	The reorganization of the watch and ward establishment is being taken in hand by all principal Railways, but its effect will not be visible for a little time yet. An ultimate saving of expenditure is anticipated, e.g. by way of reduction of cost of claims and compensation.
9. Committee for considering minimum pay of gill clerks in Government Offices, Simla, 1918.	Nil	Government	No expenditure was incurred on this Committee. Extra expenditure involved as a result of the recommendations of this Committee was Rs 14,000 a year so far as the Government of India Secretariat was concerned. This extra expenditure ceased on the introduction of the time-scale on 1st December 1919. The extra expenditure incurred by attached offices is not known.
10. Committee for considering the memorials of the Government of India Secretariat Establishments regarding pay and allowances, 1919	Nil	Government	No expenditure was incurred on this Committee. Extra expenditure involved was estimated to be Rs 4,50,000. The extra expenditure involved as a result of the grant of an additional fare at the time of the move between Simla and Delhi was not worked out and there are no data now available for working it out.
11. Royal Commission on Public Services in India.	10,82,385	Government	The extra expenditure involved both provincial and central as a result of the recommendations of the Commission was estimated at Rs. 6,88,00,000 a year (excluding expenditure due to revision of pay of Postmasters General, future non-I. M. S entrants to the Bacteriological and Sanitary Departments, Survey of India and pensions of the Bengal Pilot Service)
12. Law Officers' Committee, 1916.	33,397	Government	Acceptance of recommendation has resulted in increase of expenditure by about Rs. 8,806 per annum
13. Criminal Procedure Code Revision Committee, 1916.	40,933	Government	No question of savings or expenditure.

Name of Committee.	Cost.	Whether appointed by Government or at the instance of the Legislature.	Remarks of the Departments.
<i>Home Department—contd</i>			
	Rs		
14. Racial Distinctions Committee, 1921.	33,000	Legislature . .	Recommendations still under consideration. Estimate of savings or expenditure cannot be given.
15. Reforms Committees, 1918-19.	6,29,221	Government . .	The Reforms have resulted in increased expenditure to the extent of about Rs. 46 lakhs.
16. Secretariat Procedure Committee, 1920-21.	39,701	Government . .	As a result of the recommendations of this Committee a saving of about Rs 6,54,718 is said to have been affected and more is expected but the estimate of savings cannot be arrived at.
<i>Railway Department.</i>			
17. Acworth Committee (Departmental) (Not included in Demand No. 44).	4,44,564	On the initiative of the Secretary of State.	It is impossible to say what the actual monetary result of carrying out this Committee's recommendations is likely to be as they have not yet been fully considered.
18. Railway Finance Committee.	67,918	Legislature . .	This Committee was the direct outcome of certain recommendations of the Acworth Committee. As a result of its deliberations an annual programme of Rs 30 crores capital outlay during the 5 years commencing from 1922-23 was adopted.
19. Railway Risk Note Committee (Not included in Demand No 44).	4,186	Legislature . .	It is not possible to fix any money value but it is possible that the recommendations, if adopted, may lead to an increase of expenditure in payment of claims.
20. Railway Accounts Committee (Departmental) (Not including in Demand No. 44).	68,050	Government . .	Report is at present under consideration. The Committee was appointed with the object of improving the procedure of accounting, audit and apportionment of earnings. Some reduction of recurring expenditure is anticipated owing to the extended use of machinery for calculation, etc.
21. Railway Depreciation Fund Committee (Not included in Demand No. 44).	30,000	Government . .	This Committee is at present carrying out investigations, the object of which is to provide a basis for a regular programme of renewals in order that depreciation may be systematically provided for and deterioration of the property effectually prevented in future.
22. Railway Statistics Revision Committee (Not included in Demand No. 44).	26,000	Government . .	This Committee is at present carrying out investigations. It is hoped that the result will be a sensible reduction of the present volume of statistics combined with greater efficiency and less cost. It is not possible at present to say what saving is likely to be affected.
<i>Public Works.</i>			
23. Telegraph Committee, 1920	3,566	Government . .	These Committees have all resulted in an increase of expenditure.
24. Postal Committee, 1920	68,673	Legislature . .	It is stated that an estimate of the present and ultimate extent of the additional expenditure involved cannot be supplied. The average annual increase, however, is approximately as given below—
25. Telegraph Committee, 1921.	5,300	Government.	(i) Telegraph Committee, 1920— Rs 34,76,172.
26. Postal Committee, 1921 (Not included in Demand No. 44).	44,575	Government.	(ii) Postal Committee, 1920— Rs 1,40,15,280. (iii) Telegraph Committee, 1921— Rs 1,08,944. (iv) Postal Committee, 1921— Rs 82,217.

Name of Committee	Cost.	Whether appointed by Government or at the instance of the Legislature.	Remarks of the Departments
<i>Public Works—contd.</i>			
27. Public Works Department Reorganisation Committee, 1916-17.	Rs. 1,19,448	Government . . .	The principal recommendations made by the Public Works Department Reorganisation Committee were in favour of the transfer of some of the public works then executed by the Roads and Buildings Branch of the Department to the control of local bodies and the encouragement of private enterprise to undertake the construction of works of this nature on behalf of Government. These recommendations were based on administrative rather than economic grounds and no immediate saving of importance was anticipated. Before action was taken on the report the introduction of the Reforms and the "transfer" of roads and buildings removed these questions to a very large extent, from the immediate purview of the Central Government, and it has been left to Local Governments to take such action on the recommendations as may appear suitable.
28. New Capital Enquiry Committee, 1922	14,350	Government . . .	The Report of the New Capital Enquiry Committee contains certain proposals for economy, but it is said to be impossible to give definite figures as economy and rapidity of completion are closely allied in this case, and it was to the latter aspect that the Committee chiefly devoted its attention.
<i>Army Department.</i>			
29. Transports Claims Committee.	55,436	Government . . .	The Committee was appointed to enquire into claims arising out of the impressment of steamers in Indian waters. The Committee only defined the general principles for the admission of claims. The expenditure involved in the payment of such claims was debitable to His Majesty's Government and Indian Revenues were not affected.
30. Special Commission on the operations in Mesopotamia.	80,160	Government . . .	The appointment of this Commission led to increased expenditure, but it is not possible to estimate its amount even approximately.
31. Medical Service Committee, 1919.	185	Government . . .	This Committee was appointed in 1919 to examine and report on the question of the future reorganisation of the Medical Services in India, both Civil and Military, and the desirability of having a unified Medical Service for India. The Committee's recommendations extended over the whole range of medical services, both Civil and Military, and entail extra expenditure of which no estimate can be framed now.
<i>Department of Education and Health.</i>			
32. Post-graduate Teaching Committee.	4,693	Government . . .	This Committee was appointed to figure into the arrangements for post-graduate teaching in the Calcutta University. It produced no financial effect on Central Revenues, for on the appointment of the Calcutta University Commission the whole question of granting the University any financial assistance in connection with the Committee's recommendations was postponed.
33. Conference on English Teaching in Secondary Schools.	3,362	Government . . .	The recommendations of the Committee were confined to administrative matters which involved no apparent financial commitments.

Name of Committee	Cost	Whether appointed by Government or at the instance of the Legislature.	Remarks of the Departments
<i>Department of Education and Health—contd</i>			
	Rs		
34. Calcutta University Commission.	3,69,661	Government . . .	The Committee's recommendations did not throw any additional burden on Central Revenues, for before they could be acted on the Calcutta University was placed under the control of the Government of Bengal.
35. Indian Students' Committee.	1,77,045	Legislature . . .	The report of the Committee has just been received from England and it is not therefore possible to forecast at present what, if any, will be the financial effect of the recommendations made therein in so far as Central Revenues are concerned.
36. Local Self-Government Committee	22,005	Secretary of State . . .	The Committee's recommendations related to a provincial transferred subject and had no effect on the Central Revenues.
<i>Commerce Department</i>			
Life Saving Appliances Committee	38,021	Government . . .	The Indian Telegraphy (Shipping) Act passed in 1920 is the outcome of one of the recommendations of the Committee. It necessitates the employment of wireless telegraphy inspectors for the purpose of seeing that a ship visiting an Indian port is properly provided with a wireless telegraph installation and certificated operators and watchers. Financial stringency has compelled the Government of India to limit their commitments to the barest minimum and they have for the present year arranged to provide part-time officers only at Bombay and Rangoon and a full-time officer at Calcutta. It is, however, obviously important, if the chances of disaster at sea are to be minimised, for the Government of India to make arrangements for full-time officers at the 5 principal ports at least and this will involve an expenditure of between Rs 35,000 to Rs 40,000 per annum. The question of levying fees for inspections to meet this expenditure is under consideration. The other recommendations of the Committee, if accepted by Government, may necessitate some increase in the surveying and inspection staff.
38. Weights and Measures Committee	85,376	Government . . .	Weights and Measures being now a provincial subject, the question of saving or increase of expenditure in Central Revenues does not therefore arise.
39. Industrial Alcohol Committee.	8,839	Government . . .	Sanctioned during 1921-22 for conducting experiments in connection with power alcohol as suggested by the Committee. If the recommendations of the Committee regarding the appointment of a Central Expert Adviser are accepted by Government they may ultimately lead to an increase in expenditure which it is difficult to estimate at present.
40. Deck Passengers' Committee.	59,984	Government . . .	If the recommendation of the Committee for the appointment of a central inspecting authority is accepted by Government it is proposed to meet the expenditure by enhancing present fees for "A" certificates and levying a fee for "B" certificates.
41. Indian Fiscal Commission.	3,33,000	Legislature . . .	The recommendations of the Commission are under consideration.
42. Mercantile Marine Committee.	1,00,000	Legislature . . .	.....

Name of Committee.	Cost.	Whether appointed by Government or at the instance of the Legislature.	Remarks of the Departments.
<i>Department of Revenue and Agriculture</i>			
	Rs		
43. Conference on agricultural education . . .	1,183	Government . . .	This Committee was appointed in June 1917. It did not lead to any saving or additional expenditure.
44. The Indian Sugar Committee.	2,70,345	Government . . .	No expenditure has so far been incurred by the Central Government as a result of the recommendations of the Indian Sugar Committee. The Committee, however, recommended (a) The establishment of a Government Sugar Factory - Capital cost Rs 59,00,000 estimated, to bring in a profit of Rs. 15,83,200 (25.83 per cent) or Rs. 5,56,400 (9.43 per cent) according as the price of sugar varied between Rs 20 and Rs 12 per maund. (b) Establishment of a Central Sugar Research Institution, with sub-stations, a Sugar School and Sugar Board. Initial cost Rs. 35½ lakhs. Recurring cost Rs 12 lakhs. (c) Reorganisation and expansion of the Coimbatore Cane-breeding Station. This is included in (b) above, but the Agricultural Adviser has estimated the cost of this proposal, treated separately, as Initial Rs. 1,04,000 Recurring Rs. 60,000.
45. The Committee on Co-operation in India.	1,90,147	Government . . .	The Committee on co-operation was appointed in 1914 on the initiative of Government and cost Rs 1,90,147. As far as Minor Administrations are concerned it cannot be said that any saving or increase in the expenditure incurred on the supervision of the co-operative movement is directly due to the recommendations of the Committee. Such small increase in expenditure as has taken place during the last few years, is due to the normal expansion of the movement.
46. Deputation of certain officers to British Guiana.	43,630	Legislature . . .	It is not possible to say whether the recommendations of the deputation involve extra expenditure since no decision has been arrived at on the Reports. The Fiji deputation suggest the appointment of an Indian Trade Commissioner for the S. Pacific at Sydney with an assistant at Fiji. No saving of expenditure is anticipated as a result of these commissions.
47. Deputation of certain officers to Fiji.	72,250	Legislature . . .	
48. Deputation of Right Honble V. S. Sastri.	60,000	Government at the suggestion of the Secretary of State.	
<i>Industries Department.</i>			
49. Coal Conservation Committee.	46,978	Government . . .	The recommendations of the Committee are still under consideration and no decision can be arrived at until Government have more definite information as regards the available supplies of high grade coal.
50. Boiler Laws Committee	72,917	Government . . .	Under the Devolution Rules legislation relating to Boilers is a central subject and as revision and consolidation of the existing laws on the subject is overdue, the Committee was appointed to examine existing provincial laws in local consultation with the Governments and interests concerned, frame a new bill and draft the necessary regulations thereunder. The recommendations of the Committee involve no expenditure or savings to the Central Government.

Name of Committee.	Cost.	Whether appointed by Government or at the instance of the Legislature.	Remarks of the Departments.
<i>Industries Department— contd</i>	Rs		
51. Press Committee	15,000	Legislature	The Committee was appointed to enquire into the grievances of piece-workers employed in the Government of India Presses and to propose remedies. The recommendations of the Committee are still under consideration.
52. Stores Purchase Committee	1,61,350	Government	The Committee was appointed in pursuance of a recommendation made by the Industrial Commission to work out the detailed organisation for an agency for the purchase and inspection of stores for Government Departments in India. The Committee unanimously recommended the constitution of an expert agency for the purchase and inspection of stores and as a result a nucleus of the Indian Stores Department has now been organised. The budget estimate for the department for the current year is Rs. 3,64,950 and when fully organised it is estimated to cost Rs. 24 lakhs and to bring in revenue in the shape of departmental charges, fees for inspection and testing and miscellaneous receipts of nearly the same amount.
53. Indian Industrial Commission.	3,03,909	Legislature	This Commission was appointed for the purpose of considering the best methods by which India might be developed industrially. There could therefore be no question of its effecting savings in public expenditure. On the contrary, a judicious increase in expenditure was obviously to be an essential feature of its recommendations. At the same time, the object of such expenditure was eventually to produce greater wealth and, incidentally to add to public revenues. It is quite impossible to give an estimate of the additional expenditure which is at present being incurred as a result of the Industrial Commission. The creation of a permanent department of Industries was one of the principal recommendations made by the Commission, which also included <i>inter alia</i> the appointment of (1) the Coal Field Committee, (2) Boiler Laws Committee, (3) Stores Purchase Committee, (4) Chemical Services Committee, (5) Creation of a permanent department of Industries, (6) Publication of the Journal and Bulletins of Indian Industries and Labour and (7) Establishment of a School of Mines and Geology at Dhanbad. The major portion of the Industrial Commission's recommendations which involved additional expenditure concerned the provinces much more than the Central Government under the division of functions inaugurated with the Reforms Scheme.
54. The Chemical Services Committee.	1,51,154	Government	This Committee was appointed on the recommendation of the Indian Industrial Commission. No expenditure has been caused by its recommendation excepting the sum of about Rs. 1,03,000 which was spent on the acquisition of land at Dehra Dun, for the establishment of a Central Research Institute.

Name of Committee.	Cost.	Whether appointed by Government or at the instance of the Legislature.	Remarks of the Departments.												
<i>Industries Department — conold.</i>															
55. Enquiry into the administration of the Indian Institute of Science, Bangalore.	30,104	Government . . .	As a result of the recommendations of the Committee the Government of India made two non-recurring grants of Rs 2 lakhs each in 1913-14 and 1914-15 to improve the finances of the Institute and also met the expenditure in connection with the formation of the Committee which amounted to about Rs 50,000. No recurring expenditure by the Government of India was involved.												
56. The Railway Industries Committee.	<i>Nil</i>	Legislature . . .	The Committee has not yet concluded its deliberations and it is not possible to say what will be the financial effect of its recommendations.												
<i>Finance Department</i>															
57. Royal Commission on Indian Finance.	1,20,382	By a Royal Warrant.													
58. Indian Currency Committee.	2,38,163	Secretary of State for India.	From the nature and scope of the Committees, the question of any resultant saving or increase of expenditure does not arise.												
59. Financial Relations Committee.	42,148	Government . . .													
60. Government Securities Committee.	8,600	Legislature . . .													
61. Retrenchment Committee.	1,62,000	Legislature . . .	This estimate which is not quite complete includes about Rs. 65,000 representing the cost of preliminary investigations in India.												
<i>Foreign and Political Department.</i>															
62. Chiefs' College Conference.	15,909	Government . . .	The recommendation of the Conference was for the establishment of an institution for the higher education of boys from the Chiefs' Colleges. The proposal has, however, not yet materialised, and there is therefore no question of a saving or increase of expenditure resulting therefrom.												
63. China-Tibet Conference.	38,180	Government . . .	As no final decision has yet been arrived at as regards the conclusions of the Committee, the resultant saving or increase of expenditure cannot be stated now.												
64. Special Committee in connection with the question of future administration of Ajmer-Merwara.	6,238	Government . . .													
65. North-West Frontier Committee.	82,000	Legislature . . .	The recommendations of the Committee are still under consideration; if those of the majority are accepted they would involve an increase in recurring expenditure of Rs. 1,13,163 as detailed below:—												
			<table> <tr><td colspan="2">Reforms—Pay of Minister and allowances of members . . .</td><td style="text-align: right;">42,500</td></tr> <tr><td colspan="2">Additional Judicial Commissioner and establishment . . .</td><td style="text-align: right;">43,782</td></tr> <tr><td colspan="2">Eventual extra cost of officers obtained from the Punjab . . .</td><td style="text-align: right;">26,880</td></tr> <tr><td colspan="2"></td><td style="text-align: right;">1,13,163</td></tr> </table>	Reforms—Pay of Minister and allowances of members . . .		42,500	Additional Judicial Commissioner and establishment . . .		43,782	Eventual extra cost of officers obtained from the Punjab . . .		26,880			1,13,163
Reforms—Pay of Minister and allowances of members . . .		42,500													
Additional Judicial Commissioner and establishment . . .		43,782													
Eventual extra cost of officers obtained from the Punjab . . .		26,880													
		1,13,163													
TOTAL	68,12,000		There will also be an initial expenditure of Rs. 6,000 for books and furniture.												

ADJUSTMENTS WITH PROVINCIAL GOVERNMENTS.

	Rs.
1913-14, Actual Expenditure	59,74,000
1921-22, Revised Estimate	76,38,000
1922-23, Budget Estimate	63,29,000

The main items included under this head are Rs. 45,74,000 paid to Burma and Rs. 14,00,000 paid to Assam towards the cost of the military police in those provinces. We are informed that the principle underlying these payments is that the Central Government is responsible for the defence of India, and that the present allocation of the cost of military police between the Central Government and the two Provincial Governments concerned is based generally on the recommendation of the Financial Relations Committee of 1920 with reference to the proportion of the military police in Burma and Assam required for the defence of the frontier and for ordinary police duties respectively.

2. This general arrangement must be regarded as part of the settlement between the Central Government and the two provinces in question as a whole. We understand, however, that in the case of Assam it has been arranged that the amount of Rs. 14 lakhs now paid towards the cost of Assam Frontier Military Police should be a permanent fixed assignment not to be increased save in the event of a sixth battalion being formed with the sanction of the Government of India. We are informed that the question of arriving at a similar settlement with the Burma Government is under consideration. It is clearly desirable, where establishments are administered by a Provincial Government, to limit the liabilities of Central Government as far as possible, and we recommend that steps should be taken to come to a settlement with the Burma Government in this matter at an early date. In the settlement due account should be given to the cost of the military police, which, we are informed, is about Rs. 26 lakhs for police actually employed on the frontier and Rs. 7 lakhs for police borne on the political estimates.

CONCLUSION.

The expenditure under the head of "Adjustments with Provincial Governments", is mainly obligatory in character, but we recommend that steps should be taken to determine the amount of the assignment to be made to Burma towards the cost of the Burma Military Police, and to place this on a fixed basis.

PART IX.

EXPENDITURE IN THE MINOR ADMINISTRATIONS DIRECTLY UNDER THE GOVERNMENT OF INDIA.

The administrations directly administered by the Central Government, and the expenditure on which is borne by Central revenues are the following :—

- (a) two Frontier Administrations, namely, the North-West Frontier Province and Baluchistan,
- (b) three districts, namely, the Delhi enclave, Ajmer-Merwara and Coorg,
- (c) the Andamans Penal Settlement and the Nicobar Islands, and
- (d) certain Political Residencies and Agencies, and administered areas such as cantonments, etc., in Indian States.

2. We have in dealing with expenditure under the various heads of account discussed also the expenditure incurred in the minor administrations. It is, however, necessary, in order to obtain a conspectus of the financial position of each administration as a whole, to bring together in one place particulars of its expenditure and revenue. A similar course is adopted in presenting to the Legislative Assembly the budget estimates and the demands for grants.

3. The estimates of the total expenditure and revenue in all minor administrations for 1922-23 compare with the revised estimates for 1921-22 and the actual expenditure and revenue for 1913-14 as follows :—

	Expenditure.	Revenue
	Rs.	Rs.
1913-14, Actuals	2,89,15,000	1,11,23,000
1921-22, Revised Estimates	4,99,55,000	2,12,37,000
1922-23, Budget Estimates	5,76,71,000	2,14,82,000

The expenditure and revenue shown above is subdivided as follows :—

Administration.	1913-14.		1921-22.		1922-23	
	Expenditure	Revenue	Expenditure	Revenue.	Expenditure	Revenue.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
NORTH-WEST FRONTIER PROVINCE	1,22,41,000	47,53,000	2,03,75,000	62,89,000	2,77,21,000	73,40,000
BALUCHISTAN	53,17,000	16,07,000	85,14,000	21,93,000	87,61,000	22,64,000
DELHI	33,99,000	14,91,000	67,00,000	31,39,000	66,18,000	32,57,000
COORG	9,25,000	10,73,000	16,04,000	13,65,000	16,33,000	14,30,000
AJMER-MERWARA	9,09,000	10,50,000	15,13,000	17,08,000	15,33,000	17,37,000
ANDAMANS	20,54,000	8,84,000	51,52,000	13,31,000	50,58,000	16,10,000
RAJPUTANA	12,18,000	15,59,000	21,90,000	17,28,000	20,56,000	16,08,000
CENTRAL INDIA	15,9,000	7,28,000	22,55,000	11,86,000	22,02,000	11,75,000
HYDERABAD	6,57,000	1,02,000	7,27,000	99,000	6,59,000	90,000
BANGALORE	6,00,000	-21,24,000*	9,25,000	21,99,000	14,30,000	9,65,000*
TOTAL	2,89,15,000	1,11,23,000	4,99,55,000	2,12,37,000	5,76,71,000	2,14,82,000

* The minus figure shown against revenue for Bangalore in 1913-14 represents the gross revenue less a payment of Rs. 30 lakhs made out of general revenues under an arrangement by which a share of the surplus revenue is made over to the Mysore Durbar. A similar deferred adjustment accounts for the reduced figures in 1922-23.

4. Particulars of expenditure in each minor administration under the more important heads, and of the reductions which we recommend under each head, are shown in Appendix A.

We now deal with the various administrations seriatim :—

NORTH-WEST FRONTIER PROVINCE.

	Expenditure.	Revenue.
	Rs.	Rs.
1913-14, Actuals	1,22,41,000	47,53,000
1921-22, Revised Estimates	2,03,75,000	62,89,000
1922-23, Budget Estimates	2,77,21,000	73,40,000

5. The great increase in the cost of this administration has attracted much attention in the Legislature and elsewhere and a local Retrenchment Committee was appointed to consider possibilities of effecting economies. Of the total increase of Rs. 1,54,80,000, no less than Rs. 1,35,22,000 has occurred under the following four heads :—

	1913-14.	1922-23.
	Rs	Rs
Political	81,30,000	1,18,51,000
Police	17,05,000	47,78,000
General Administration	5,93,000	17,38,000
Education	4,88,000	11,05,000
TOTAL	59,46,000	1,94,72,000

The increase under ' Political ' and ' Police ' is mainly due to special measures adopted for the defence of North-West Frontier and has been examined in our reports on those heads. The local Retrenchment Committee has recommended reductions amounting to Rs. 11 lakhs under these and other heads and has also made suggestions for increasing the revenue. We have taken these proposals into account in our recommendations summarised in Appendix A.

6. Even, however, with the total saving of Rs. 36,02,000 which we propose and with such additional revenue as it is possible to obtain under excise, stamps and other heads, this administration must inevitably continue to be a heavy charge on the general revenues of India in view of its situation on the most vulnerable part of India's frontier. We consider that steps should be taken to restrict this liability as far as possible and that this can best be done by making a settlement for a period of years with the North-West Frontier Province on the lines of the settlements formerly in force in the Major Provinces. As basis of such a settlement, we recommend that—

- (a) the political charges which relate entirely to the trans-frontier areas and also special charges, such as those for the construction of the important new frontier roads, be borne by the Central Government;
- (b) the remaining revenue and expenditure of the Province be assessed and a fixed recurring assignment made from Central revenues sufficient to cover the deficit as so estimated;
- (c) the Province be provided with a small fixed lump sum grant as a working balance; and
- (d) the Province be then required to work within its income as so fixed by restricting expenditure, or in the alternative by increasing its revenues.

BALUCHISTAN.

	Expenditure.	Revenue.
	Rs.	Rs
1913-14, Actuals	53,17,000	16,07,000
1921-22, Revised Estimates	85,14,000	21,93,000
1922-23, Budget Estimates	87,61,000	22,64,000

7. The increase in the cost of this Administration is said to be attributable, as in the case of the North-West Frontier Province, mainly to the disturbed condition of the Frontier. Of the total increase in expenditure

of Rs. 34,44,000 since 1913-14, Rs. 25,15,000 has occurred under the Political and Police heads as shewn below :—

	1913-14	1922-23.
	Rs.	Rs.
Political	24,15,000	42,25,000
Police	5,11,000	12,16,000
TOTAL	29,26,000	54,41,000

We have recommended reductions in expenditure to the extent of Rs. 4,33,000, and we further recommend that a regular settlement be entered into by the Central Government with Baluchistan for a period of years on the lines recommended for the North-West Frontier Province.

DELHI.

	Expenditure.	Revenue
	Rs.	Rs.
1913-14, Actuals	33,99,000	14,91,000
1921-22, Revised Estimate	67,00,000	31,39,000
1922-23, Budget Estimate	66,18,000	32,57,000

8. Of the total increase of Rs. 32 lakhs in expenditure since 1913-14, about Rs. 14 lakhs has occurred under Civil Works and Rs. 4 lakhs each under Education and Police. The total savings which we have recommended amount to Rs. 4,16,000.

* Expenditure to the extent of Rs. 33,37,000, or more than half of the total cost of Delhi administration, is incurred under the head civil works. The bulk of this expenditure, as also a portion of the expenditure on police, is due to the fact that Delhi is the headquarters of the Central Government and it appears that but for this fact this administration would be practically self-supporting. Steps have been taken to increase the stamp revenue and it should also be possible to increase the excise revenue as we have indicated under that head.

COORG.

	Expenditure.	Revenue.
	Rs.	Rs.
1913-14, Actuals	9,25,000	10,73,000
1921-22, Revised Estimate	16,04,000	13,65,000
1922-23, Budget Estimate	16,32,000	14,36,000

9 Of the total increase of about Rs. 7 lakhs in the cost of this administration, Rs. 3,65,000 is incurred under forests. We understand that portion of this represents expenditure of a capital nature on the development of the Coorg forests from which a substantial increase in revenue is anticipated. A special enquiry was made during the year into the cost of the administration of Coorg and the officer deputed has recommended eventual reductions to the extent of Rs. 1,75,000. We have recommended immediate savings to the extent of Rs. 1,66,000 for 1923-24, and it is estimated that in that year revenue will exceed expenditure by more than Rs. 2½ lakhs. A suggestion has been made that Coorg should be attached to a neighbouring province, but in view of the possibility of a substantially enhanced revenue under forests, we see no necessity on financial grounds for the adoption of this course.

AJMER-MERWARA.

	Expenditure.	Revenue.
	Rs.	Rs.
1913-14, Actuals	9,09,000	10,50,000
1921-22, Revised Estimate	15,13,000	17,08,000
1922-23, Budget Estimate	15,35,000	17,37,000

10. We have recommended economies to the extent of Rs. 40,600. We have, however, been unable, in the time available, to go into details in the case of this small but expensive administration, and we recommend that special enquiry should be made on the spot with a view to effect immediate reductions of establishment as was done in the case of Coorg.

ANDAMAN AND NICOBAR ISLANDS.

	Expenditure	Revenue.
	Rs.	Rs.
1913-14, Actuals	20,54,000	8,84,000
1921-22, Revised Estimate	51,52,000	13,31,000
1922-23, Budget Estimate	50,58,000	16,10,000

11. The bulk of the expenditure is incurred on the convict settlement, Rs 35 lakhs, and forests, Rs 14 lakhs, and has been examined under the relative heads. A reduction of Rs. 4,43,000 is proposed under the former head in 1923-24.

RAJPUTANA.

	Expenditure	Revenue.
	Rs	Rs
1913-14, Actuals	12,18,000	15,59,000
1921-22, Revised Estimate	21,90,000	17,28,000
1922-23, Budget Estimate	20,56,000	16,08,000

12 We have recommended reductions to the extent of Rs 1,76,000 but we think it very desirable that a further local enquiry should be made as proposed in the case of Coorg, *vide* paragraph 10. In particular, the heavy expenditure on civil works seems to require investigation. The bulk of the revenue, namely, Rs. 14,42,900 is on account of tributes.

CENTRAL INDIA.

	Expenditure.	Revenue.
	Rs.	Rs.
1913-14, Actuals	15,89,000	7,28,000
1921-22, Revised Estimate	22,55,000	11,86,000
1922-23, Budget Estimate	22,02,000	11,75,000

13. We have recommended reductions amounting to Rs. 30,000 but here also we consider that a further local enquiry into the expenditure including civil works, is very desirable. Of the receipts, about Rs. 5 lakhs represent tributes.

HYDERABAD.

	Expenditure.	Revenue.
	Rs	Rs
1913-14, Actuals	6,57,000	1,02,000
1921-22, Revised Estimate	7,27,000	99,000
1922-23, Budget Estimate	6,59,000	90,000

14. We have recommended reductions amounting to Rs. 18,500. It may be noted that Rs. 1,33,000 of the expenditure is on account of pensions

BANGALORE.

	Expenditure.	Revenue.
	Rs.	Rs
1913-14, Actuals	6,06,000	21,24,000
1921-22, Revised Estimate	9,25,000	21,99,000
1922-23, Budget Estimate	14,30,000	9,65,000

15. The minus figure under revenue in 1913-14 is due to a deduction from gross revenue of a sum of Rs. 30 lakhs paid out of general revenues under an arrangement by which a share of the surplus revenues is made over to the Mysore Durbar. A similar payment of Rs. 12 lakhs provided for in 1922-23 accounts for the apparent reduction in receipts in 1922-23. The cost of the administration of the Civil and Military Station of Bangalore is met from the revenues of the assigned tract and the balance after providing for developments and improvements is, under arrangement, paid over to the Mysore Durbar. In normal years the expenditure is more than covered by the revenue and we make no recommendation.

CONCLUSIONS.

We have made elsewhere our recommendations regarding reductions in expenditure in the Minor Administrations but we further recommend that:—

- (1) a settlement be entered into for a period of years with the North-West Frontier Province and Baluchistan and these Administrations be required to work within their revenues as so fixed, and
- (2) special enquiries be made locally into the cost of the administration of Ajmer-Merwara, Rajputana and Central India, with a view to effecting further reductions.

APPENDIX A

Particulars of expenditure in the minor administrations under the main heads for 1913-14 (Actual Expenditure), 1921-22 (Revised Estimate) and 1922-23 (Budget Estimate) and of the reductions proposed in the report.

NORTH-WEST FRONTIER PROVINCE.

Head of Account.	1913-14.	1921-22.	1922-23.	Savings proposed.
	Rs.	Rs.	Rs.	Rs.
Land Revenue	4,97,000	4,55,600	5,26,000	1,68,000
Forests	1,31,000	6,77,000	7,50,000	...
Irrigation (Interest on debt, etc.)	7,04,000	10,29,000	10,27,000	...
General Administration	5,93,000	17,27,000	17,38,000	...
Administration of Justice	4,70,000	4,31,000	4,58,000	30,000
Jails	2,10,000	6,05,000	5,68,000	25,000
Police	17,05,000	53,10,000	47,78,000	19,000
Political	31,60,000	49,08,000	1,13,51,000	26,27,000
Education	4,88,000	11,86,000	11,05,000	1,66,000
Civil Works	34,85,000	25,00,000	32,05,000	...
Other heads of account	8,00,000	15,00,000	17,25,000	5,67,000
TOTAL	1,22,41,000	2,03,75,000	2,77,21,000	36,02,000*

*Includes a reduction of Rs 2,18,000 in working expenses proposed in the Report on Irrigation.

NOTE 1.—The expenditure on irrigation shown above includes only interest charges and miscellaneous minor works. The expenditure on working expenses is shown by deduction from gross revenue. Including working expenses the total irrigation expenditure and revenue for these years is:—

	1913-14	1921-22.	1922-23.
	Rs	Rs	Rs.
Working expenses	3,04,000	10,91,000	10,86,000
Interest	6,51,000	9,39,000	9,51,000
Miscellaneous	53,000	90,000	76,000
Gross Expenditure	10,08,000	21,20,000	21,13,000
Gross Revenue	9,25,000	19,02,000	19,24,000

2 The estimates under General 'Administration' for 1922-23 take into account a lump deduction of Rs. 2 lakhs to meet the general cut made by the Assembly. Savings to this extent have been proposed and it is recommended in the report that the expenditure for 1923-24 should be limited to the reduced estimate for 1922-23. Similarly, under the head 'Education' a lump cut of Rs. 2 lakhs is taken into account in the estimate for 1922-23 and further reductions to the amount of Rs. 1,66,000 are proposed in the report. The estimate for the Police expenditure in 1922-23 also takes into account a provisional reduction of Rs 7,91,000 towards meeting the cut made by the Assembly. The report proposes that further reductions of Rs. 19,000 should be effected.

BALUCHISTAN.

Head of Account.	1913-14.	1921-22.	1922-23	Savings proposed.
	Rs	Rs	Rs	Rs.
Land Revenue	2,45,000	3,38,000	3,61,000	81,000
Irrigation	3,26,000	57,000	57,000	...
Interest on debt . . . . .	...	2,69,000	2,09,000	...
Police	5,11,000	11,68,000	12,16,000	...
Political	24,15,000	86,55,000	42,25,000	2,91,000
Education	1,07,000	1,98,000	2,72,000	34,000
Medical and Public Health	1,01,000	2,91,000	3,47,000	57,000
Civil Works	11,62,000	13,78,000	12,94,000	...
Famine Relief . . . . .	...	4,30,000	...	...
Other heads of account	4,50,000	7,35,000	7,19,000	20,000
TOTAL	53,17,000	85,14,000*	87,61,000	4,33,000

DELHI.

Head of Account	1913-14.	1921-22.	1922-23.	Savings proposed.
	Rs	Rs	Rs	Rs
General Administration	1,85,000	2,61,280	3,16,180	32,000
Administration of Justice	1,14,000	1,23,880	1,45,880	..
Police	3,92,000	7,81,020	7,91,410	92,000
Education	1,43,000	4,51,170	5,52,950	1,67,000
Medical and Public Health	1,86,000	4,73,890	4,34,400	54,000
Civil Works	19,16,000	23,90,300	33,37,260	..
Miscellaneous	35,000	14,67,900	2,78,900	45,000
Other heads	4,28,000	7,50,580	7,61,080	26,000
TOTAL	33,99,000	67,00,000	66,18,000	4,16,000

COORG.

Head of Account	1913-14	1921-22.	1922-23.	Savings proposed.
	Rs.	Rs	Rs.	Rs
Land Revenue	1,24,000	2,04,000	2,11,280	47,000
Forests	1,78,000	5,67,000	5,43,000	..
Police	62,000	1,12,200	1,20,780	21,000
Education	68,000	1,24,200	1,50,760	41,000
Civil works	2,79,000	3,09,600	3,06,600	16,000
Other heads	2,16,000	2,87,000	3,00,630	41,000
TOTAL	9,28,000	16,04,000	16,32,000	1,66,000

AJMER-MERWARA.

Head of Account.	1913-14.	1921-22.	1922-23	Savings proposed.
	Rs	Rs	Rs.	Rs.
Land Revenue	1,15,000	1,75,000	1,72,000	1,600
General Administration	70,000	1,1,000	1,49,000	9,000
Police	2,08,000	3,81,500	3,28,000	..
Education	1,02,000	2,37,740	2,30,000	5,000
Pensions	1,64,000	1,69,000	1,63,000	..
Other heads	2,50,000	4,32,760	4,71,000	25,000
TOTAL	9,09,000	15,13,000	15,33,000	40,600

NOTE.—The estimated expenditure for 1922-23 shown above under the heads 'Police' and 'Education' take into account reductions of Rs. 50,000 made under each head to meet the general out made by the Assembly. It is proposed in the report that expenditure on Police in 1923-24 should be limited to the reduced estimate for 1922-23 and that a further saving of Rs. 5,000 under Education should be effected.

ANDAMAN AND NICOBAR ISLANDS.

Head of Account.	1913-14.	1921-22.	1922-23.	Savings proposed.
	Rs.	Rs.	Rs.	Rs.
Forests	3,75,000	14,24,720	14,02,000	..
Convict Settlement	16,13,000	36,00,000	35,18,000	4,43,000
Civil Works	1,67,000	1,36,000	1,35,000	..
Miscellaneous . . . . .	..	1,250	3,000	..
TOTAL	20,54,000	51,52,000	50,58,000	4,43,000

RAJPUTANA.

Head of Account	1913-14	1921-22	1922-23.	Savings proposed.
	Rs.	Rs.	Rs.	Rs.
Police	1,16,000	3,48,460	3,18,410	19,000
Political	5,50,000	6,40,590	6,70,150	91,000
Education	82,000	1,11,690	1,09,770	14,000
Civil Works	4,00,000	8,70,100	7,73,100	40,000
Other heads	64,000	2,19,160	1,78,570	12,000
TOTAL	12,18,000	21,90,000	20,56,000	1,78,000

NOTE.—The estimated expenditure for Police in 1922-23 takes into account Rs. 66,000 provisionally deducted under this head to meet the cut made by the Assembly in the total estimates of this administration; the report proposes reductions of Rs. 85,000, i.e., a further Rs. 19,000.

CENTRAL INDIA.

Head of Account	1913-14.	1921-22.	1922-23.	Savings proposed.
	Rs.	Rs.	Rs.	Rs.
Excise	55,000	1,06,220	1,30,590	...
Police	1,46,000	2,22,030	1,55,370	...
Political	3,63,000	5,98,330	5,38,170	21,000
Medical	1,32,000	67,190	60,900	...
Education	68,000	84,900*	82,940	...
Civil Works	6,46,000	8,91,470	9,00,160	...
Other heads	1,79,000	3,94,810	2,82,870	9,000
TOTAL	15,89,000	22,55,000	22,02,000	30,000

The estimated expenditure on Police for 1922-23 shown above takes into account a deduction of Rs. 39,000 to meet the cut made by the Assembly. The actual expenditure is, however, estimated at Rs. 2,44,000 and it is proposed in the report to reduce this to Rs. 2,00,000 in 1923-24.

HYDERABAD.

Head of Account.	1913-14.	1921-22.	1922-23.	Savings proposed.
	Rs.	Rs.	Rs.	Rs.
Political	1,98,000	2,43,430	2,46,740	...
Education	68,000	23,320	23,330	18,500
Civil Works	1,66,000	1,94,000	1,12,000	...
Pensions	1,47,000	1,32,130	1,33,720	...
Ecclesiastical	44,000	61,090	61,390	...
Other items	59,000	62,980	81,820	...
TOTAL	6,57,000	7,27,000	6,59,000	18,500

BANGALORE.

Head of Account.	1913-14	1921-22	1922-23.
	Rs.	Rs.	Rs.
Police	99,000	2,08,000	2,38,260
Education	2,24,000	2,81,640	3,29,890
Medical and Public Health	1,72,000	2,44,120	3,06,930
Administration of Justice	47,000	89,530	1,02,770
Civil Works . . . . .	...	...	3,55,020
Other heads	64,000	1,01,410	98,130
TOTAL	6,06,000	9,25,000	14,30,000

NOTE.—Reductions in expenditure on Civil works in the Minor Administrations are not shown save in the case of reduction of establishment, as we made a lump reduction on the total provision proposed for 1923-24.

PART X.

PAY, LEAVE AND ALLOWANCES.

The questions of pay, leave and allowances of Government services are subjects of great importance which, we think, can best be dealt with as a whole, so that the relative position of the various classes of employes can be reviewed.

2. The total staff paid from Central revenues, excluding staff employed on Railways, has increased from 474,966 in 1913-14 to 520,762 in 1922-23, an increase of 9.9 per cent. made up as follows.—

	NUMBERS EMPLOYED.			TOTAL PAY AND ALLOWANCES.		
	1913-14	1922-23.	Per cent. increase.	1913-14	1922-23.	Per cent. increase.
	No.	No.		Rs.	Rs.	
<i>Military Services</i>						
Army	301,502	308,750	1.7	12,94,07,000	25,49,18,000	97.0
Royal Air Forces	...	3,143			57,04,000	...
Military works	2,427	3,304	36.2	38,05,000	66,39,000	74.5
Royal Indian Marine*	2,138	2,320	8.6	18,42,000	27,10,000	101.9
Total	306,037	315,517	3.1	13,45,54,000	26,99,72,000	100.2
<i>Civil Service.</i>						
Officers	2,944	3,414	16.3	1,76,61,000	2,75,49,000	56.2
Clerical Establishment	48,740	71,098	45.8	2,86,06,000	5,62,69,000	138.3
Industrial, Technical and other main classes	64,672	71,924	11.2	2,03,49,000	4,18,59,000	105.7
Menials	52,543	58,809	11.9	58,98,000	1,18,47,000	100.9
Total	1,68,899	205,245	21.3	6,75,14,000	13,75,24,000	103.7
GRAND TOTAL	474,966	520,762	9.9	20,20,68,000	40,74,96,000	101.3

*Permanent staff only.

This table shows that whereas the total staff employed has increased by nearly 10 per cent. since 1913-14 the cost of pay and allowances has increased by 101 per cent. The increased cost of pay and allowances in the Military services is, as might be anticipated, relatively much greater than in the civil service, owing to the larger proportion of British personnel employed.

3. We have been supplied with the following analysis of the expenditure separating pay and allowances for the Military and Civil Services :—

	MILITARY SERVICES.			CIVIL SERVICES.		
	1913-14	1922-23.	Increase.	1913-14.	1922-24.	Increase.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Pay proper	12,13,75,000	23,67,91,000	11,54,16,000	5,55,37,417	11,97,60,618	6,42,23,201
Special pay or duty allowances	84,63,000	1,19,29,000	34,66,000	4,22,104	16,25,131	12,03,027
Companary or local allowances	1,44,000	1,40,000	-4,000	13,51,333	29,94,597	16,42,264
House rents	5,000	1,76,000	1,68,000	5,42,319	14,98,265	9,55,946
Travelling allowances	80,59,000	70,01,000	39,43,000	35,09,895	69,97,268	34,87,373
Other allowances	15,05,000	1,39,35,000	1,24,30,000	31,51,701	46,49,168	14,97,461
TOTAL	13,15,54,000	26,99,72,000	13,54,18,000	6,75,14,769	13,75,24,041	7,00,09,272

Of the total increase of Rs. 20,54,27,000 in the cost of pay and allowances Rs. 17,66,39,200 represents increased pay due to additional staff and increased emoluments and Rs. 2,87,68,000 the increase in allowances. Further details of the expenditure are given in Appendices A. and B.

MILITARY SERVICES.

4. *Pay of Officers.*—The rates of pay of British service officers and men of the Army in India are based upon the rates in operation in the United Kingdom. These rates were revised in the year 1919 when the cost of living was abnormal and a high standard of salaries and wages prevailed outside the services. In fixing the present rates it was laid down that 20 per cent. of the pay of officers would be subject to revision in 1923-24 either upwards or downwards in accordance with the rise or fall in the cost of living, and the Government of India when revising the rates of pay for British officer in the Indian Army made a similar stipulation. The Board of Trade index number at the time the rates became effective stood at 109 and, as there has since been a large fall in the cost of living, it would appear probable that a considerable saving in officers' pay may be anticipated in the near future.

The approximate annual cost of a British and Indian officer in 1913-14 and estimated for 1922-23 are given in Appendices C and D, and a comparison of the pay of officers in the fighting services and in the Supply and Transport Corps is also given in Appendix E.

5. We consider that in connection with the proposed revision of pay in 1924, the question should be considered whether the advantage in pay enjoyed by officers in the administrative services, as compared with those in the fighting services, is justified. The pay of officers in the administrative services consists of two portions (a) pay of rank and (b) staff pay. It will be observed from Appendix C that in the Supply and Transport Corps ranks of Captain and above receive less rank pay than in the fighting services, but the composite pay of all ranks is considerably greater than in the case of the corresponding officers in the fighting services of the Indian Army.

We are of opinion that the arrangement now operating in England should apply to officers coming to India for a normal 5 years' service. Under this arrangement officers would draw their basic regimental pay, plus "Corps" pay based upon the allowance in Great Britain plus a "Command" allowance when holding qualifying appointments. If India desires to retain officers for a longer period an additional allowance would be necessary as in the case of British officers in the Indian Army.

6. *Pay of Other Ranks.*—The rates of pay of British other ranks are also based upon the rates paid in the United Kingdom which form part of the terms of enlistment and are therefore not susceptible to reduction. The pay in India is the sterling pay converted at 2 shillings to the rupee and a special allowance of 50 per cent. to cover the loss in exchange, which is liable to adjustment after 6 months' notice has been given.

The approximate annual cost of a Warrant Officer and a soldier are given for the years 1913-14 and estimated for 1922-23 in Appendix C and similar information is given in Appendix D for an Indian Sepoy and a Follower.

7. *Allowances.*—The total expenditure on allowances of the Military Services has increased from Rs. 1,31,79,000 in 1913-14 to Rs. 3,31,81,000 required for 1922-23. Special pay and duty allowances have increased by Rs. 34,66,000 due mainly to the expansion of the Administrative Services of the Army. The increased cost of travelling allowances, Rs. 39,42,000, is mainly due to the enhancement of railway fares and the large increase in "Other allowances", Rs. 1,39,35,000 to concessions to other ranks. Officers have been granted syce and forage allowances for the maintenance of authorised chargers. British other ranks have been granted marriage, family and separation allowances, and, in addition, the kit and clothing allowances have been increased to meet the higher prices now prevailing.

8. *Leave.*—The rules governing the grant of leave to members of the Army are virtually the same as in pre-war except that the right to accumulate privilege leave has been abolished and the period of leave in India has been reduced from 12 months to 6 months.

The normal periods of annual leave admissible in the Army may be summarised as follows:—

Year	Service	AVERAGE ANNUAL LEAVE ADMISSIBLE PER MAN DURING PERIOD OF SERVICE.		
		Days on full pay	Days on half pay subject to maximum	Days on other conditions, if any
1	2	3	4	5
1918-14 and 1922-23	British officers—British and Indian services Departmental Ranks India Unattached List	60 days 90 days if serving at Frontier stations	<i>Nsl</i>	Recreation leave up to ten days Furlough up to a maximum of ten months out of India and four months in India. Once every four years (average)
	British other ranks	30 days	<i>Nsl</i>	Short leave up to seven days.
	Indian officers	60 days	<i>Nsl</i>	Furlough up to 3½ months once every three years. Ditto.
	Indian other ranks	60 days for 33 per cent. per annum of actual strength. 30 days	<i>Nsl</i>	
	Followers		<i>Nsl</i>	Casual leave up to 20 days.

The above leave rules are the maximum admissible, but no members of the Army are entitled to leave and we are informed that it is only granted when the officer-in-charge is satisfied that the applicant's services can be spared.

CIVIL SERVICES.

9. *All-India Services*.—The rates of pay for all-India services are based largely on the recommendations made by the Public Services Commission in 1914-15. Consideration of these recommendations was postponed during the earlier years of the war, but, owing to the rapid rise in the cost of living it became necessary to raise the scales of pay, which were revised generally with effect from 1st December 1919. We are informed, however, that the average increase after allowance is made for the abolition of exchange compensation did not exceed 20 per cent.

Two of the more important questions which necessarily arise in connection with the services are—

- (1) the provincialization of certain of the all-India services; and
- (2) the adoption of differential rates of pay for officers of European and Indian domicile.

It is impossible in the time at our disposal to examine in detail these important questions which would affect the provinces to a greater extent than the Central Government. The appointment of a Royal Commission on the services in India has recently been announced and it was stated that it is contemplated that the Commission will enquire into the organization and general conditions of service, financial or otherwise, of the superior civil services in India. In these circumstances we do not feel justified in pursuing the enquiry. Our colleague Sir Rajendra Nath Mukerjee, however, who was President of the Bengal Retrenchment Committee wishes us to state that he adheres to the recommendations made by his Committee in their Report in the chapter headed "Pay and Services".

10. *Subordinate Services.*—The cost of subordinate services, *i.e.*, Clerical, Industrial, Technical and menial has increased from Rs. 4,98,53,000 in 1913-14 to Rs. 10,99,75,000 or 121 per cent. due partly to additional staff but mainly to increased rates of pay.

In 1920 when the cost of living was at its highest the rates of pay of nearly all classes of Government servants, including those on the Railways, was increased by about 100 per cent., no stipulation being made that the question would be reconsidered when the cost of living came down as was provided for in Great Britain. Comprehensive figures of the fluctuations in the cost of living are not maintained in the Provinces except in a few cases such as Bombay where the Labour Bureau prepares an index figure of the cost of living of the working classes.

The index figure published for Bombay for October 1920, at which time most of the revisions of pay were under consideration, stood at 193 on the basis of a pre-war standard figure of 100. This index figure now stands at 156 from which it would appear that the cost of living in Bombay has fallen by nearly 19 per cent. There is no doubt that the fall in the cost of living is general throughout India, and we consider that the time has now arrived when the whole question should be made the subject of an inquiry and in this inquiry Local Administrations should be associated.

11. *Allowances.*—The total cost of allowances to Civil Servants has increased from Rs. 89,78,000 in 1913-14 to Rs. 1,77,64,000 in 1922-23. The bulk of this increase incurred under travelling allowances consequent upon the enhancement of railway fares and increased mileage and daily allowances.

The class by which a Government servant is entitled to travel by rail is regulated according to his salary and, although the rates of pay have been materially increased, the salary limits entitling Government servants to travel in the higher classes have remained unaltered. For instance, a man drawing Rs. 400 per month before the revision of pay was entitled to two second class fares. His pay after revision is Rs. 550 and he automatically becomes entitled to two first class fares or double the rate he previously drew although his status has not been altered. Further, since railway fares have been increased by 50 per cent. he actually becomes entitled to three times the allowance he would have obtained prior to the revision of his pay. We understand that the Bombay Government have already raised the salary limits entitling officers to first class rates from Rs. 500 per month to Rs. 750 and the limits of the second class from Rs. 100 to Rs. 200. We think that similar action should be taken as regards servants of the Central Government and we recommend that the rules be at once revised accordingly. We are also of opinion that the present practice of allowing an additional fare for incidental expenses when travelling by rail is unsound in principle and we recommend that, except in the case of transfers, officers required to travel by rail on duty be granted the actual fare paid, including a limited number of servants' fares, and a daily allowance.

We are informed that the list of officials entitled to reserved accommodation on railways is under consideration with a view to reduction, and we recommend that the list of officers entitled to saloons be similarly reviewed. It seems questionable whether it is in all cases necessary to reserve saloons for the sole use of individual officers, and we think that a system of pooling should be considered. We are also of opinion that the cost of the maintenance of saloons should be borne by the Department concerned.

We understand that the question of revising the present rules in regard to travelling allowances has been under consideration of Government and that a saving of 20 per cent. or Rs. 13,00,000 on the estimates of the current year would be effected under our recommendations.

12. *Leave.*—During the course of our enquiry it has been brought to our notice that the liberalization of the leave rules brought into force about a year ago has resulted in very large increases of staff owing to many more employes having to be entertained to provide for leave vacancies and has greatly hampered the working of the Departments. The following statement shows that

the very liberal leave granted in 1913-14 has been largely increased, particularly in the case of the staff under the ordinary leave rules :—

	AVERAGE LEAVE ADMISSIBLE PER ANNUM DURING PERIOD OF SERVICE.			
	On full pay		On half pay	
	1913-14. Days	1922-23 Days.	1913-14. Days.	1922-23 Days
Staff under European or Special leave rules	24	37	72	49
Staff under Indian or Ordinary leave rules	28	26	24	52

The leave granted under the above rules is additional to casual leave, holidays under the Negotiable Instruments Act, other gazetted holidays and other occasional holidays granted by executive order such as Wednesday or Saturday half holidays, last Saturday of month holidays, etc. The extent of the leave admissible and the leave taken are shown below for a few offices and departments :—

	Bombay General Post Office and Town Sub-Offices		Secretariat Department, Government of India.		District offices.	
Total Staff employed	2,775		87		74	
	Number of days leave admissible per man.	Number of men days lost.	Number of days leave admissible	Number of men days lost	Number of days leave admissible.	Number of men days lost
Casual leave	20	55,550	20	274	15	325
Holidays under Negotiable Instruments Act.	4	11,100	20	934	12	388
Other Gazetted holidays.	6	16,650	12	715	..	...
Other occasional holidays granted by executive order	...	88,250	39	1,320	13	1,322
TOTAL		166,550	91	3,943	..	3,045
Average days leave taken per man employed	60		45		41	

We have already suggested that an enquiry should be made into the pay of the subordinate services in which the local Administrations should be associated and we recommend that the question of leave conditions generally should be reviewed at the same time.

CONCLUSIONS.

Having reviewed the expenditure on pay and allowances we recommend that—

- (1) the whole question of pay and leave conditions of the subordinate services be made the subject of an enquiry in which local Administrations should be associated;
- (2) salary limits entitling officers to particular classes of rail accommodation be raised; and
- (3) the travelling allowance rules be revised on the basis that officers required to travel by rail on duty be granted the actual fare paid including a limited number of servants' fares and a daily allowance.

APPENDIX A.

Analysis of pay and allowances of the Military Services.

Class	Number		Pay including proficiency pay		Special pay or duty allowance		Compensatory or local allowances		House rent allowance		Travelling allowances		Other allowances		Total pay and allowances	
	1918-14.	1922-23	1918-14	1922-23	1918-14	1922-23.	1918-14	1922-23	1918 14	1922-23	1918-14	1922-23	1918-14.	1922-23	1918 14	1922-23
			Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
British Officers	6,439	6,624	3,69,27,000	6,46,50,000	53,47,000	67,11,000	73,900	2,000	6,765	15,265	26,55,000	61,11,000	5,34,000	39,28,005	4,55,74,000	8,14,62,000
Indian Officers	3,004	2,956	39,38,000	42,81,000	1,28,000	2,31,000	..	500	..	1,584	4,000	4,000	1,272	29,000	33,71,000	45,47,000
British other Banks	79,651	69,208	3,48,29,000	9,59,62,000	5,22,000	3,15,000	..	..	..	..	44,000	1,34,000	7,83,000	81,53,000	3,61,57,000	10,39,96,000
Indian other Banks	1,53,646	1,86,599	3,52,14,000	4,07,19,000	23,15,000	44,98,000	..	..	..	5,760	..	..	..	5,97,000	3,75,29,000	4,58,18,000
Civilians, Clerks, etc.	5,477	10,007	86,38,000	87,40,000	5,000	42,000	7,000	29,000	..	1,000	20,000	69,000	67,000	1,04,000	37,37,000	89,82,000
Followers	59,285	50,266	29,45,000	97,92,000	..	..	..	3,000	..	4,000	6,200	7,800	87,000	2,86,000	80,39,000	1,00,94,000
Total Army	3,01,502	3,06,750	11,68,21,000	22,85,74,000	83,17,000	1,17,95,000	80,900	34,500	6,765	27,679	27,29,200	63,24,800	14,52,272	2,31,62,000	12,94,07,000	25,49,19,000
Military works.																
British Officers	197	225	19,17,000	26,78,000	..	..	20,500	28,050	..	..	..	..	26,000	69,000	19,63,000	27,75,000
British other Banks	250	288	5,95,000	10,53,000	56,400	10,800	20,000	22,000	840	720	3,27,000	5,80,000	..	2,400	18,42,000	38,64,000
Civilians, Clerks, etc.	1,078	1,709	7,17,000	19,81,000	3,240	21,600	14,000	12,000	..	..	..	..	..	..	..	..
Followers	954	1,087	1,09,000	1,82,000	..	..	..	..	..	..	..	..	..	..	..	..
Total Military Works	2,427	3,304	33,38,000	58,94,000	59,640	32,400	54,550	62,000	840	720	3,27,000	5,80,000	26,000	71,400	38,95,000	66,39,000
Air Force		3,143		48,75,000		53,800		38,100		1,000		96,000		6,40,000		57,04,000
Royal Indian Marine (permanent staffs)	2,128	2,320	12,16,000	24,48,000	87,000	48,000	8,454	5,712	744	1,46,580	3,268		26,569	61,410	13,42,000	27,10,000
GRAND TOTAL	3,06,067	3,15,517	12,18,75,000	23,67,91,000	84,65,640	1,19,29,000	1,43,904	1,40,212	8,349	1,75,909	30,59,469	70,00,800	15,04,841	1,39,34,810	13,45,54,000	26,99,72,000

CIVIL SERVICES.

Statement showing the number of staff paid for from the Central Revenues, employed in and under the various Civil Departments, the total amount of pay proper, and the total cost of special pay, travelling, compensatory, house and other allowances separately.

	Number.		Pay proper.		Special pay or duty allowances		Compensatory or local allowances		House rent.		Travelling allowances		Other allowances		Total of pay and allowances	
	1918-14.	1922-23.	1918-14.	1922-23.	1918-14.	1922-23.	1918-14.	1922-23.	1918-14.	1922-23.	1918-14.	1922-23.	1918-14.	1922-23.	1918-14.	1922-23.
			Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
<i>Permanent staff.</i>																
Officers	2,890	3,248	1,47,41,648	2,18,49,690	2,27,644	6,22,872	3,68,446	5,75,146	1,10,108	2,09,305	14,08,664	21,74,762	8,62,698	5,21,279	1,73,59,148	2,59,53,054
Clerical establishment	47,790	67,149	2,00,43,015	4,84,11,811	59,598	6,75,277	4,15,624	6,92,831	2,27,520	6,87,806	9,27,873	23,18,168	15,25,695	25,92,195	2,31,99,820	5,38,88,588
Industrial, Technical or other main branches separately	60,204	68,094	1,68,98,209	3,55,09,988	88,809	2,17,961	4,58,797	13,09,194	1,55,478	4,63,684	8,03,746	16,45,831	10,05,455	11,50,024	1,93,75,494	4,02,96,697
Menials	46,055	53,188	47,00,171	97,41,714	578	21,086	92,169	3,39,944	46,129	1,40,068	2,06,244	3,66,810	2,19,803	3,14,465	52,65,099	1,09,14,037
Total Permanent staff	156,899	191,618	5,63,78,048	11,35,19,198	4,16,624	15,37,166	13,35,036	29,18,115	5,39,235	14,50,368	33,46,527	65,05,571	31,13,596	43,77,968	6,51,29,061	18,04,97,376
<i>Temporary staff.</i>																
Officers	54	173	2,95,729	18,87,170	3,990	47,236	659	6,071	459	8,614	70,450	1,39,753	520	13,113	3,71,807	15,95,957
Clerical establishment	950	8,949	8,89,866	25,69,609	980	28,084	4,115	54,290	1,538	35,397	6,434	2,68,895	4,781	29,410	4,07,224	29,35,685
Industrial, Technical or other main branches separately	4,469	3,830	9,12,887	14,60,038	500	980	11,293	17,158		1,545	24,286	66,773	25,238	15,689	9,73,654	15,63,178
Menials	6,488	5,876	5,61,942	8,20,608		1,665	230	2,963	1,037	2,346	62,198	82,276	7,566	12,987	6,33,023	9,32,845
Total Temporary staff	11,960	13,627	21,59,874	62,47,420	5,460	87,965	16,297	80,462	3,034	47,902	1,63,368	4,91,697	98,105	71,199	23,85,708	70,26,655
GRAND TOTAL	168,859	205,245	5,85,37,922	11,97,66,618	4,22,104	16,25,131	13,51,333	29,98,577	5,42,319	14,98,265	35,09,895	69,97,268	31,51,701	46,49,162	6,75,14,769	18,75,24,031

APPENDIX C.

Approximate annual cost of a British Officer.

	1913-14.				1922-23.			
	British Cavalry	British Infantry	Indian Cavalry	Indian Infantry	British Cavalry	British Infantry	Indian Cavalry	Indian Infantry
	Rs	Rs	Rs.	Rs	Rs	Rs	Rs	Rs
Pay and allowances (excluding Exchange Compensation allowance)	6,696	5,076	7,884	7,200	8,328	8,256	10,980	11,484
Exchange Compensation allowance	408	312	492	420	...	...	.	...
Sycc and forage allowance	...	..	..	..	1,140	204	1,140	288
Capitation payments to War Office	171	171	171	171	385	385	385	385
Transport charges	200	200	..	...	400	400	400	400
Pensions	837	634	985	900	1,041	1,032	1,372	1,436
TOTAL	8,812	6,393	9,332	8,691	11,294	10,277	14,277	13,992

Approximate annual average cost of a British Warrant Officer and a Soldier.

	1913-14				1922-23.			
	BRITISH CAVALRY.		BRITISH INFANTRY		BRITISH CAVALRY.		BRITISH INFANTRY.	
	Warrant and N. C Os	Rank and File.	Warrant and N. C Os	Rank and File.	Warrant and N. C Os.	Rank and File.	Warrant and N. C. Os.	Rank and File.
	Rs.	Rs	Rs.	Rs	Rs.	Rs.	Rs.	Rs.
1 Pay and allowances	895	419	783	362	2,118	1,115	1,900	1,096
2 Free rations	115	115	115	115	190	190	190	190
3. Messing allowance	51	51	51	51	150	150	150	150
4. Clothing allowance and free issues	88	88	74	74	166	166	162	162
5. Equipment and miscellaneous stores	32	32	32	32	92	92	92	92
6. Capitation payments to Warrant Officer	171	171	171	171	385	385	385	385
7. Cost of housing	24	24	24	24	38	38	38	38
8. Fuel and light	13	13	13	13	15	15	15	15
9 Medical charges	60	60	60	60	170	170	170	170
10. Marriage and furniture allowance (average)	...	...	...	...	90	90	90	90
11. Transport charges	40	40	40	40	80	80	80	80
12. Miscellaneous (i.e., N. H. I. contribution and other charges)	8	8	8	8	20	20	20	20
13 Pensions	15	15	15	15	15	15	15	15
TOTAL	1,512	1,036	1,886	965	3,529	2,525	3,307	2,508

APPENDIX D

Approximate annual cost of Indian Officer, Sowar and Sepoy.

	1913-14.				1922-23.			
	INDIAN CAVALRY		INDIAN INFANTRY.		INDIAN CAVALRY		INDIAN INFANTRY.	
	Indian officer.	Sowar.	Indian officer.	Sepoy.	Indian officer.	Sowar.	Indian officer.	Sepoy.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1. Pay and allowances	1,164	170	951	146	1,849	240	1,503	216
2. Food charges	50	50	50	50	146	146	146	146
3. Clothing allowances and free issues	18	18	15	15	91	75	80	64
4. Equipment	23	23	23	23	36	36	36	36
5. Fuel and light	4	4	4	4	15	15	15	15
6. Passage while on furlough	5	5	5	5	21	7	21	7
7. Cost of housing	13	5	13	5	28	13	28	13
8. Medical charges	16	16	16	16	105	105	105	105
9. Pensions	145	21	119	18	231	30	188	27
10. Miscellaneous and incidental expenses	1	1	1	1	2	2	2	2
TOTAL	1,439	318	1,197	233	2,524	669	2,124	631

Approximate annual cost of certain Followers.

	BHISTIS.		SWEEPERS.	
	1913-14.	1922-23.	1913-14.	1922-23.
	Pay	60	108	60	108
Rations	80	146	80	90
Clothing allowance and free issues . . . . .	...	83	...	33
Cost of housing	1	3	1	3
TOTAL	91	290	91	234

N.B.—Bhistis and Sweepers are both common to Cavalry and Infantry Arms of the Service.

APPENDIX E.
FIGHTING SERVICES

Rates of monthly pay of officers of the fighting services British and Indian Army in India

Ranks	BRITISH SERVICE			INDIAN ARMY.		
	Pay.	Command or Staff pay	Total	Pay	Staff Pay	TOTAL.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Second Lieutenant	425	.	425	..		..
Second Lieutenant after two years' commissioned service	475	..	475	475	Varies according to the appointment held.	575.
Lieutenant	475	..	475	475		575
Lieutenant after seven years' commissioned service	550	..	550	550	Company or squadron officer Rs. 100	750
Captain	750	.	750	750	Company or squadron commander, Rs 230.	950
Captain after 15 years' commissioned service	850	.	850	850	Company or squadron Commander,	1,050
Major	950	..	950	950	2nd in command, Rs. 250	1,150
Major after five years' service in the rank	1,050	.	1,050	1,050		1,250
Lieutenant-Colonel	1,250	350*	1,600	1,250	500*	1,750

*If Commandant.

ADMINISTRATIVE SERVICES.

Rate of pay in the Supply and Transport Corps (including Mechanical Transport).

Rank.	Pay per mensem.	Staff pay. (This is dependent upon length of service and class in which graded)	TOTAL.
	Rs.	Rs.	Rs.
Second Lieutenant	425	6th Class up to 9 years' service 250	675.
Lieutenant	475	6th " " 9 " " 250	725
Lieutenant after 7 years' commissioned service.	550	5th " after 9 " " 300	850
Captain	700	5th " " 9 " " 300	1,000
Captain after 9 years' (commissioned service)	750	4th " " 13 " " 400	1,150
Major	900	3rd " " 17 " " 500	1,400
Major after 5 years' service in that rank	950	2nd " " 22 " " 600	1,550
Lieutenant-Colonel	1,150	1st " " 27 " " 800	1,950

PART XI.

GENERAL OBSERVATIONS AND CONCLUSIONS.

The budget of the Government of India for 1922-23, as finally passed, left unbridged a revenue deficit of Rs. 9,16,28,000. This was the fifth of a succession of deficits, amounting in the aggregate to about Rs. 100 crores, and it is now apparent that the current year's deficit will work out at a figure considerably higher than the budget estimate. The causes of these deficits are well known and it is unnecessary to restate them, but it is clear that the country cannot afford the heavy charge involved by further huge additions to the unproductive debt, and that if India is to remain solvent immediate steps must be taken to balance her budget.

2. The problem does not end here. Under the existing settlement annual contributions to the extent of Rs. 983 lakhs are (subject to a temporary remission of Rs. 63 lakhs in the case of Bengal) payable by the Provinces to the Central Government. It is contemplated that these contributions should be progressively reduced and the matter is being continually pressed by the Provinces, which are also suffering from acute financial difficulties, by their Legislatures and by the Press.

3. Since 1913-14 new taxation estimated to yield Rs. 49 crores annually has been imposed, and the extent to which it is possible to impose further burdens on the tax-payer is now very limited. While, therefore, it is evident that an improvement of something like Rs. 20 crores will have to be obtained in order to make the position secure, it is no less evident that the main source of relief must be looked for in the retrenchment of expenditure.

4. We have prepared an analysis of the expenditure in the budget of 1922-23 under the following heads, comparing it with corresponding expenditure in 1913-14:—

	1913-14	1922-23.
	Rs.	Rs.
I.—DEBT SERVICES (INCLUDING INTEREST DEBITABLE TO COMMERCIAL DEPARTMENTS)	21,24,93,000	43,77,65,000
II.—PENSIONS (INCLUDING MILITARY NON-EFFECTIVE CHARGES)	8,45,11,000	13,14,65,000
III.—COMMERCIAL DEPARTMENTS	35,00,92,000	79,19,77,000
IV.—CHARGES FOR COLLECTION OF REVENUE	3,17,64,000	5,74,07,000
V.—CIVIL ADMINISTRATION	8,75,07,000	14,49,06,000
VI.—MILITARY SERVICES (EFFECTIVE)	27,02,91,000	64,47,34,000
VII.—PAYMENTS TO PROVINCIAL GOVERNMENTS	59,74,000	63,29,000
TOTAL	1,04,26,32,000	2,21,45,83,000

5. Of the total expenditure of Rs. 221 crores, debt services, pensions and payments to Local Governments aggregating Rs. 57½ crores are of an obligatory character and are not susceptible of immediate reduction. There is also a limit to which reductions can be made in the charges of Rs. 5½ crores for the collection of revenue without imperilling the revenue. In our examination of railway expenditure we have drawn attention to the fact that the working of the railways resulted in a loss to the State of Rs. 9½ crores in 1921-22 and is expected to result in a further loss of Rs. 130 lakhs in 1922-23, and we have emphasised the necessity of curtailing working expenses to ensure that, under normal conditions, an average return of at least 5½ per cent. is obtained on the capital invested by the State in railways. We have also indicated substantial economies in the administration of the Posts and Telegraphs Department. Apart from these heads, the main field for economy lies in the effective charges of the Military services and in the cost of the civil administration.

6. In reviewing the expenditure of the commercial and *quasi*-commercial departments and manufacturing establishments of Government we have had occasion to observe that in many cases these are not conducted on commercial lines and we wish again to emphasise the importance of maintaining proper commercial accounts for all such undertakings.

7. We also desire to draw attention to the magnitude of the stocks of stores held by many departments, as shown in the following statement :—

Department.	Value of stores held on March 31st, 1922 or nearest date.
	Rs
Army	20,14,71,000
Marine	75,11,000
Military Works—	
Mobilisation stores	87,69,000
Ordinary stores	35,41,000
Telegraphs—	
Mobilisation stores	44,09,000
Ordinary stores	1,53,40,000
Post Office	1,77,000
Indo-European Telegraphs	11,00,000
Mathematical Instrument Office	11,72,000
Railways	34,58,00,000
X-Ray Institute	6,32,000
TOTAL	58,99,22,000

The country cannot, in our opinion, afford the lock-up of capital which this huge sum represents, apart from the consequent expenditure on the establishments engaged on the maintenance of the stores, the buildings for their accommodation and the inevitable loss from depreciation. We recommend that an early and progressive reduction be effected in these large holdings.

8. We now summarise the details of the reductions which we recommend in the expenditure on the various services included under the above main headings :—

	Expenditure.	Reductions proposed
	Rs.	Rs.
I.—DEBT SERVICES—		
Ordinary debt	11,86,02,000	...
Interest and sinking funds debitable to State Railways	25,63,49,000	...
Interests debitable to Posts and Telegraphs	66,00,000	...
Interest debitable to Irrigation	9,51,000	...
Interest on other obligations	3,23,63,000	...
Sinking funds	2,29,00,000	...
TOTAL	43,77,65,000	...
II.—PENSIONS—		
Civil Pensions	3,54,27,000	6,30,000
Military non-effective charges	9,28,96,000	...
Territorial and Political pensions	31,42,000	1,08,000
TOTAL	13,14,65,000	7,38,000
III.—COMMERCIAL DEPARTMENTS—		
(1) Railways—		
Working expenses	67,99,00,000	4,59,00,000
Surplus profits paid to Companies	60,00,000	...
Subsidised Companies	19,83,000	...
Miscellaneous	29,77,000	...
TOTAL RAILWAYS	69,08,60,000	4,59,00,000

	Expenditure	Reductions proposed.
	Rs.	Rs.
III.—COMMERCIAL DEPARTMENTS—<i>contd.</i>		
(2) Indian Posts and Telegraphs	9,53,27,000	1,37,27,000
(3) Indo-European Telegraph department	43,35,000	7,34,000
(4) Irrigation	14,55,000	2,18,000
TOTAL COMMERCIAL DEPARTMENTS	79,19,77,000	6,05,79,000
IV.—CHARGES FOR COLLECTION OF REVENUE—		
Customs	72,74,000	47,000
Income-tax	47,01,000	
Salt	1,73,65,000	19,15,000
Opium	1,86,53,000	20,00,000
Land Revenue	15,64,000	3,97,000
Forests	52,45,000	6,90,000
Excise and Registration	3,32,000	17,000
Stamps	22,73,000	22,00,000
TOTAL	5,74,07,000	72,63,000
V—CIVIL ADMINISTRATION—		
General Administration	1,98,57,000	49,89,000
Audit	83,16,000	3,76,000
Administration of Justice	10,29,000	61,000
Jails and Convict Settlements	44,35,000	4,80,000
Police	81,90,000	1,07,000
Ports and Pilotage	26,32,000	2,11,000
Ecclesiastical	33,83,000	2,00,000
Political	2,93,14,000	45,70,000
Scientific Departments	1,12,60,000	30,02,000
Education	32,96,000	5,19,000
Medical	32,84,000	6,40,000
Public Health	16,32,000	7,79,000
Agriculture	23,36,000	2,86,000
Industries	1,59,000	1,29,000
Aviation	48,000	83,000
Miscellaneous Departments	26,71,000	11,13,000
Currency	80,82,000	
Mint	22,34,000	4,12,000
Exchange	20,60,000	
Civil Works	1,61,87,000	15,30,000
Famine Relief	27,000	27,000
Stationery and Printing	75,56,000	10,37,000
Miscellaneous	69,18,000	14,03,000
TOTAL	14,49,06,000	2,19,09,000
VI.—MILITARY SERVICES—		
Army	56,78,85,000	8,95,30,000
Royal Air Force	1,41,00,000	...
Royal Indian Marine	1,57,22,000	75,00,000
Military Works	4,70,27,000	76,96,000
TOTAL	64,47,34,000	10,47,26,000
VII.—PAYMENTS TO PROVINCIAL GOVERNMENTS		
	63,29,000	...
GRAND TOTAL	2,21,45,83,000	19,52,13,000

9. From the above gross total must be deducted the following items:—

	Rs.
Cost of management of debt transferred from General Administration to Interest	16,35,000
Expenditure formerly included under Army and Military Works and transferred to Royal Air Force	21,25,000
	37,60,000

We have, in our report on pay and allowances, indicated a saving of Rs. 13 lakhs under travelling allowances, and the net total of the reductions which we propose on the estimate for 1922-23 is thus Rs. 19,27,58,000.

10. We recognise that it will not be possible to secure in the ensuing year the complete reductions proposed, as under the rules notice must be given to surplus establishments, large reorganisations cannot be effected immediately, and large terminal payments will be necessary in some cases. It will also be necessary to make provision for increments to establishments on time-scale salaries. We recognise, also, as stated in paragraph 3 of our general conclusions on the Military Services, that some of the reductions proposed represent reductions in stocks of stores and are therefore non-recurring. Even allowing for these factors, however, we believe that our recommendations, if carried out, will go far towards solving the problem of restoring India's finances to a secure basis.

11. The Chairman with the Secretary and Mr. Milne began their work in London in August, continuing it on the passage out to India preparing Questionnaires. We met in Committee for the first time in Delhi on the 8th November and have practically been in constant session since then. After the appointment of the Committee was announced the various departments set about endeavouring to see where expenditure could be reduced and we have been indebted to them for many suggested economies as shown in the various reports. Our labours were greatly lightened by the preparations made by the Finance Department in framing statements showing the Government expenditure under all heads, and throughout the Finance Department have been of the very greatest help. Every other Department of Government has assisted us in furnishing all information asked for and the various officers who have come before us have evinced the keenest disposition to help in the reduction of expenditure.

12. We desire to express our acknowledgments to Mr. H. F. Howard, the Secretary, and Mr. J. Milne, the attached officer, for the invaluable assistance they have rendered to us and for the laborious work they have ungrudgingly performed. We desire also to express our thanks for the great help which has been rendered to us by Mr. R. A. Mant, Mr. A. F. L. Brayne of the Finance Department and Colonel Harding Newman. We are also indebted to our office staff and to the Government Press; the prompt and accurate manner in which the latter has carried out the work has done much to expedite the issue of our Report.

INCHCAPE (*Chairman*).

T. S. CATTO.

DADIBA MERWANJEE DALAL.

R. N. MOOKERJEE.

ALEX^R R. MURRAY.

PURSHOTAMDAS THAKURDAS.

H. F. HOWARD,
Secretary.

J. MILNE,
Attached Officer.

March 1st, 1923.

PRINTED BY
SUPERINTENDENT GOVERNMENT PRINTING, INDIA
DELHI

S2157

REPORT.

The Flood Relief Committee.

1924-25.

THE SOWRASHTRA PRESS,

SALEM

To

**THE FLOOD RELIEF COMMITTEE,
SALEM DISTRICT.**

I have the honour to submit the following report on the relief operations of the District, which have closed so far as our work is concerned.

The relief work of the District had its origin in purely non-official effort, which however soon received an accession of strength by the co-operation of the Revenue Officials of the District, chiefly through the kind intercession of Mr. R. H. Courtney, I. C. S., District and Sessions Judge, Salem.

The Collector, Mr. T. B. Russell, I. C. S., was however very particular that no official should serve on the Relief Committee or take part in the work of collecting funds.

The entire direction and execution of the relief work of the District, therefore, remained exclusively in the hands of a non-official working committee, consisting of a President, three Secretaries and a Treasurer, the committee being answerable only to the District Committee consisting of over sixty of the non-official representative citizens of the Town and District of Salem. (*Vide* Appendix A.)

But all the same the Collector was pleased to instruct his Revenue Divisional Officers and through them the Revenue Subordinates of every grade, to give the committee all the help and advice that they required in the execution of their task, himself taking immense pains to watch the progress of the work by making constant enquiries of the President and others and issuing instructions from time to time to his Revenue subordinates, quite unmindful of the time and trouble involved.

It gives the committee very great pleasure to thankfully acknowledge here the great help they derived from the Revenue Officials of all grades in ascertaining the extent of the damage caused by the floods to lands, crops, irrigation wells and house property and in selecting individuals to be admitted to relief, having regard to their means, position in life and the damage severally sustained by them, although the committee were at the trouble to have an independent investigation of their own made in respect of every one of these matters either by members of their own body or such other non-official agencies as they could command for the purpose. Among the officials who helped the committee in this way Messrs. M. R. Sankaranarayana Aiyar, B.A., and K. C. Manavedan Raja, B.A., Revenue Divisional Officers of Namakal and Sankari respectively, deserve special mention.

The committee also feel that their thanks are specially due to Mr. T. B. Russell for having readily acceded to their request that he should arrange to find and furnish free of cost the lands required for fresh house sites for the sufferers in four of the affected villages, in one of which no fewer than three

separate lands were required for as many different communities. In point of fact he supplied forthwith two of these lands, each measuring about six acres from Government " *Puramboke* " and the promptitude with which this was done, enabled sixtysix of the affected families in Oruvandur, Namakal Taluk, to build very early neat and healthy residences with well laid out streets, sanitary lanes, recreation ground and what not, which might well make them feel that the floods were to them a blessing in disguise. It may be worth mentioning that a sum of Rs 400 has since been sanctioned by the committee for a well for the use of this colony and that a beautiful fresh water well has also been dug, the necessary platform, parapet walls and other accessories being expected to be soon supplied.

The other land intended for the sufferers of Pullakaundampatty, Tiruchengode Taluk, was covered with prickly pear and other noxious growth, which having been since cleared at a cost of Rs 100 furnished by the committee and the ground also rendered otherwise fit for house building, over a hundred families are expected to settle on it as soon as the houses are begun and completed. The committee believe that in time a well may have to be dug for the use of this settlement also. Another land in Pallipalayam of the same taluk measuring 150 acres has been kindly acquired at the request of the Committee by the Ceylon Labour Commissioner at a cost of Rs. 1,000. The Commissioner has kindly undertaken also to dig a well for this colony at a cost of Rs. 300. In the case of the remaining three lands intended for the use of about 200 families of Fishermen, Adidrayidas and Pallars, which had all to be acquired compulsorily under the Act, Mr. Russell is believed to have very early applied to Government for a lump grant. One of these lands intended for the Fishermen of Vellalpalayam, Tiruchengode Taluk, is now in process of acquisition by the Revenue Divisional Officer, Sankari, on the terms laid down in the G. O. since received on the subject. But the acquisition of the other two intended for the Adidrayidas and Pallars of Oruvandur which had been arranged for by Mr. Russell on certain terms with some difficulty, because of the unwillingness of the persons concerned to give up the old village site, has since been given up by Mr. Hilton Brown, his successor because no acquisition could be made under the terms of the recent G. O. except on an unconditional surrender of the old village site.

The result is the Adidhravidas and Pallars of Oruvandur consisting of about a hundred families have put up houses or sheds again on the old village site which adjoins the Cauvery bank and is scarcely five feet higher than the bed level of the river at this spot. The bank having been washed away in parts and considerably corroded in others, the river does and must remain a perpetual source of menace, not only to the houses of these people but also to the adjoining valuable wet " *ayacat* " of the village. It is therefore absolutely necessary that the river bank at this spot to a length of about 300 yards should be strengthened by the construction of a stone rivetment and otherwise, if the houses of these unfortunate people as well as the adjoining wet " *ayacat* " are to receive the protection necessary even against the normal floods of the river. Higher up the river in the same village is another spot where similar protection is necessary in the interests alike of the wet " *ayacat* " and the inhabited portion of the village. The breach at this spot during the late floods led not only to the silting up of

about forty acres of wet land, since cultivated by the owners, after a partial removal of the silt at their own cost, only with dry crops, but also to an inundation of a part of the village which resulted in the total or partial destruction of many of its houses. I am glad to say that the necessity for protection in both these cases has been amply recognised both by Mr. Hilton Brown and Mr. Sankaranarayanaier, the Revenue Divisional Officer, Namakal, for all that I have been able to gather from the opinions expressed by them on the subject. In fact in his letter of the 17th January, 1925, the Collector wrote to me that the Adidravidas (and the Pallars) having preferred to remain in the existing site (at Oruvandur), steps were being taken to extend the *new* rivetment, though for all that I know nothing tangible has yet been attempted or done.

The damage caused by the floods to lands, crops, irrigation wells and house property in the District amount according to the official estimate to about two lakhs and a half, though in popular opinion it may easily be very much more. (*Vide* Appendix B). It is needless however for me to speculate on this question, for with the resources at the disposal of the committee it was impossible that they could turn their attention to any but the poorest of the poor who with their thatched houses, wholly or partially destroyed, had been turned adrift to seek shelter under the trees and to look to public charity for their food. Luckily local charity proved more or less equal to the occasion and did much to house and feed them during and immediately after the floods. The result was that by the time the committee set to work the chief need of these people was, for the most part, only help to rebuild their houses. Out of the one thousand one hundred and sixty-six thatched houses, of which 960 had been wholly destroyed and 206 partially, the estimate of the damage done under both heads amounting to Rs. 35,095, the committee and the Ceylon Labour Commissioner between them have been able to give help in the shape of money doles only in 775 cases, the persons concerned being either bona-fide coolies or petty ryots paying an annual list of less than Rs. 10 to Government and therefore presumably dependent on the wages of their labour, wholly or partially for their support. The money doles thus given averaging only Rs. 10 or thereabouts were barely sufficient in many cases to enable the sufferers to again find shelter of *some* kind and not also to actually rebuild their houses. It may be mentioned here that in addition to these doles the Ceylon Labour Commissioner built houses for 31 of the affected families in Pallipalayam, Tiruchengode Taluk, at a cost of Rs. 520, on land which as already stated he had himself acquired, while the late Mr. Kandasamy Kandar of Nanjadedavar built 14 houses for as many affected families in Anichampalayam, Namakal Taluk, at a cost of Rs. 250. This will bring up the number of cases which received relief to 775+45 or 820 only out of the 1166 thatched houses affected. Particulars as to the relief given will be found in (Appendix D).

The result is that many even of the 775 persons who received money doles as well as the owners of most of the remaining thatched and substantial houses are driven to look to Government for loans, which the latter have generously offered to advance on favourable terms for bona-fide reconstruction of houses. Indeed even before the intentions of the Government in this behalf were announced, the committee can vouch for the fact that many persons admitted by them to relief as well as many others not so admitted had begged of them for help

at least in the shape of loans, as loans could not be raised by them from private sources except at prohibitive rates of interest or under the Loans Acts of Government without much delay and unjustifiable loss. Considering then that there is imperative need for loans from Government, not only for housebuilding but also for repairing damage done to lands and irrigation wells, especially in the dry taluk of Tiruchengode, which had suffered too severely from bad seasons even before the floods came, to be able to recover from the devastations caused by them without outside help, I would respectfully take the liberty to urge the appointment of a tried officer of not less than the grade of a Tahsildar to carry and distribute these loans at the very doors of the sufferers, so that the loans may be given with the necessary promptitude and without any avoidable trouble or expense to the borrowers; and I have no doubt that loans so given will prove doubly useful to those for whom the Government generously intend them. I fancy that the appointment of such an officer is the surest way also to save Government from the loss which they are likely to sustain otherwise when they proceed to recover these loans more especially as in most instances they may have to be advanced on mere personal security. If the appointment of a special officer is considered too much in view of the requirements of this District, which can be met, if I may offer an opinion in such a matter, by loans to the extent of Rs. 50,000 at the outside, a District Official of the required qualifications may be put on special duty for this purpose for a few months. Indeed in his reply of the 17th January 1925 to my letter on the subject the Collector wrote to me to say that the appointment of a special officer had already been recommended by him.

It may be worthy of notice here that Mr. Russell granted free permits for two palmirah trees to each of the affected houses, *irrespective of the condition of the owner*, and this concession the committee believe has been very generally availed of by the sufferers. The help rendered by Government in the shape of lands granted or to be acquired and by free permits issued for timber I estimate at Rs. 5,000, as shown in (Appendix D).

Through the kind help of Mr. E. V. Padmanabha Pillai, District Forest Officer, Salem Central, the committee had arranged for the supply of three wagon loads of bamboos from the Shevaroy's to the flood affected parts but the delay unavoidably caused in the execution of the order and the heavy cost of transport to all but the Cauvery Station, to which alone the South Indian Railway management confined the concession rates kindly allowed by them, led to the cancellation of the rest of the order on the receipt of the first wagon at the Cauvery Station for the use of parts of Tiruchengode Taluk alone.

Coming to the question of funds, the Committee regret to have to observe that the District collections have been the lowest yet known, considering the occasion which called for them. This can be explained only partially even by the successive bad seasons that the District had gone through, as most of the Landlords, Merchants, Local Boards and their Members, not to speak of the District Officials, have kept back from doing their duty by the sufferers on an occasion of so unique a character. It is impossible to resist the impression that this was due at least partly to some misapprehension caused by the official attitude in regard to the collection of funds. A scrutiny of our lists of subscriptions and donations—

(*Vide* Appendix C Series).—will not only bare out the truth of the statement that the District has failed to do its duty but will also show that except for help received from outside, often from the most unexpected sources, among which the Ceylon Labour Commissioner deserves prominent mention, the committee should not have been able to achieve even what little they have achieved in relieving the very real suffering caused by the floods in the circumstances of this District, although the appalling disaster caused by them in Malabar, Tanjore and Trichinopoly had created an unfortunate tendency to be little the same. Next to the Ceylon Labour Commissioner the thanks of the committee are due in this connection to the Madras Central Flood Relief Committee, the Salem District Board, the Tamil Nadu Congress Committee and Indian Labour abroad, who have all made handsome contributions to the Relief Fund, not to speak of other public bodies and private individuals, for whose generous help the committees' thanks are also due. Having spoken of Indian Labour it is impossible to avoid mention of Dr. P. Varadarajulu Naidu, one of the Secretaries of the committee, whose appeal for funds is believed to have drawn considerable amounts from Indian Labour abroad in aid of the flood relief work of South India and his contribution to the Relief Fund of this District is Rs. 540 and it could easily have been very much more except for the much greater necessities of the other affected Districts. The Committee feel that their thanks are due to him for his kind efforts in this behalf. And if, as has been stated a considerable portion of the relief afforded by the Ceylon Labour Commissioner also represents the contribution of Indian Labour in Ceylon, Indian Labour abroad, it is pleasing to note, will alone have contributed over Rs. 2,500 out of a total collection of Rs. 9,844-2-3, for the relief of their fellow labourers in this District, even taking the contribution of Ceylon Labour to be but 50 per cent of the total relief afforded by the Ceylon Labour Commissioner. Also be it remembered that the contribution of Indian Labour to the relief work of this District is the least portion of the aid given by it to the relief work of South India whether through the Labour Commissioner or Dr. P. Varadarajulu Naidu.

It only remains for me to acknowledge the services rendered by individual workers as members either of the General Committee at Salem or of the local committees formed in the interior of the District for the work of collection or distribution or both. A detailed description of such services being however obviously beyond the scope of this report I beg leave merely to mention the following gentlemen for earnest and honourable service done in connection with the flood relief work of the District. (1) Mr. Sangameswara Chettiar, Landlord and Banker, Komarapalayam; (2) Mr. Kuppusami Iyer and (3) Mr. Ardhahari Iyer of Edapady; (4) Mr. S. V. Subbiah, Government Pensioner, Dharmapuri; (5) Mr. Seetharamiah, President, Union Board, Hosur; (6) Mr. C. Rajalingam Chettiar, Zamindar, Elamballi; (7) The late Mr. Kandasamy Kandar, Mirasdar, Nanjadedayar, Namakal Taluk; (8) Mr. S. Venkatapathy Mudaliar, B.A., B.L., High Court Vakil, Namakal; (9) Mr. M. D. Subbaraya Aiyar, B.A., B.L., High Court Vakil, Salem; (10) Mr. Kandasamy Pillay of Salem; (11) and last but not least, Mr. N. Rama Rao, B.A., B.L., late President of the Congress Committee, Salem, who made a through investigation of the condition of the sufferers in the Namakal Taluk and distributed the greater part of the relief afforded to them at a considerable sacrifice of time and trouble. Nos. 1, 6, 7 and 8, Messrs. Sangameswara Chettiar, Rajalingam Chettiar, Kandasami Kandar and Venkatapathi Mudaliar were also the most prominent among those who organised measures to

house and feed the sufferers for days and weeks during and after the floods. The help rendered in this way, though considerable, is not capable of being assessed at a money value, as none of the gentlemen concerned would give an account of the relief afforded in the shape of food and food grains, as this was done in their opinion more as a matter of duty than of charity for honourable mention. The grain bought by Mr Venkatapathi alone for the purpose is Rs 237-8-0 raised out of public subscriptions and this has accordingly been shown in the accounts.

No 10, Mr Kandasamy Pillay did valuable service in investigating the condition of the sufferers in the outlying forest villages of Dharmapuri Taluk which are difficult of access and in assisting Mr. S. C. Venkatsappa Chettiar, B A , B L., Municipal Chairman, Salem and one of the Secretaries of the working committee in distributing relief in these villages under somewhat trying conditions.

Coming nearer home I must gratefully acknowledge the valuable work done by every member of the working committee to the best of his ability and opportunity. The proceedings of the committee have been marked by the most perfect harmony from start to finish and although the committee has been of a very mixed character it has worked throughout in the spirit almost of a family group which seemed at times to render the usual formalities for regulating the proceedings of such a body almost superfluous. It will be very invidious on my part to attempt to distinguish between the work of the several members of such a committee but I fear it would be less than fair if I failed to state (1) that the brunt of the work in every branch of it fell upon the willing shoulders of its active and energetic Secretary, M. R. Ry. K Sivasankara Mudaljar Ayl, Zamindar of Kannankurichi and President, First Class Bench Court, Salem, who in the midst of the numerous calls on his time and attention spared neither himself nor his zamin establishment in the execution of the relief work of the district and (2) that Mr D P. Chennakrishna Chettiar made an ideal Treasurer, the promptitude with which he met every demand of the committee at any hour of the day almost creating an impression that he carried the committee's purse and accounts about his person.

Actuated by a laudable ambition to make the people self-reliant in all social work as much as practicable, Mr. C. Rajagopalachariar of Salem is believed to have given the first impulse to the Flood Relief Movement of the District and the guidance unostentatiously given by him to his co-adjutors of the non-co-operation faith on the Relief Committee has been the most potent factor in bringing about the harmonious co-operation all round which has become a very pleasing feature of the entire relief operations of the district.

I may perhaps state here my sincere feeling that it is not after all for me or the committee to thank those who have helped in this humanitarian work which is receiving daily and hourly the most heart felt thanks of the unfortunate sufferers who have had the benefit of it and through them the blessings of Him in whose service all work of the kind is and must ever be done.

The only outstanding question now is how to dispose of the surplus amount of Rs. 2,392-0-0 which according to the latest figure furnished by the Treasurer, the late but considered action of some of our donors has helped to leave

on our hands. Speaking for myself this sum, is best made over to the Madras Central Flood Relief Committee, so that that body supplementing it with such additional funds as may be necessary may afford the further relief required in the District especially for the clearance of silted lands and irrigation wells, for closing up breaches in the Cauvery bank especially in the village of Oruvandur, Namakal Taluk and for procuring loans for such of the sufferers as may need them for house building or silt clearing. Wells for the Settlements in Pullagoundampatti and Vellalapoliem may also be mentioned here once again as among the requirements deserving the attention of those who are to carry on the further relief work of the District.

A reference to Resolution No. 2 in Appendix A will show that the Committee can well claim to be 'functus officio', having accomplished the relief work for which it was called into existence and all further work in this direction, it therefore feels rightly, must fall on the Central Flood Relief Committee, Madras.

The relief work of the Committee having practically closed before the 15th November 1924, my report on it was ready even on the 5th December following, but the evacuation of the town owing to plague from December to March, my own absence from Salem and the illness which still continues to torment me together with the delay in the final audit of the accounts which has been somewhat complicated by sundry receipts and disbursements since the audit of November 1924, have unavoidably delayed the issue of this report till this day.

T. SUBRAMANIA AIYAR,
President, Flood Relief Committee,

The Salem District Flood Relief Committee, Salem.

Final Audit Statement.

Receipts and Disbursements from 4th August 1924 to 14th May 1925.

No.	Particulars of Receipts	Amount		No.	PARTICULARS OF DISBURSEMENTS.										Total	REMARKS.	
					Taluks.	No. of fami- lies.	Relief given.						Wellsinking or site clearing				
							Cash	Cholam	Bamboo.								
1	Donations from Public Bodies and Associations (<i>Vide</i> Appendix C1)	4,110	0 0	1	Namakal	283	1,037	0 0	237	8 0	400	0 0	Add Rs 1,850 by Ceylon Labour Commissioner 370 bundles of bamboos to 185 cases at 2 bundles each Rs. 100 for site clearing at Pullakavundampatti and 1-0-8 for 2 bundles of bamboo for pegging out sites at Pallipalayam.	
2	Contributions through Committee or Sub-Committee Members or others with their names and the names of the contributors where known (<i>Vide</i> Appendix C2).	3,064	14 3		Omalur	28	280	0 0	...	...	192	11 4	101	0 8	
					Tiruchengode ...	353	3,395	0 0	...	...	..	..	..	..
					Dharmapuri	111	906	0 6	...	...	..	..	..	..
					Total	775	5,618	0 6	237	8 0	192	11 4	501	0 8	6,549		4 6
					(<i>Vide</i> Appendix D)												
3	Direct collections by the Committee personally or through post (<i>Vide</i> Appendix C3).	2,169	4 0	2	Miscellaneous (<i>Vide</i> Appendix F).—												
					(i) Stationery, printing and typing									78	2 3		
					(ii) Postal and Telegraphic charges ..									51	1 6		
					(iii) Travelling expenses ..									218	10 9		
					(iv) Sundries									25	6 3		
					(v) Writing charges ..									10	0 0		
				3	Loss on bamboo as per separate bamboo account annexed (<i>Vide</i> Appendix E).									19	9 0		
				4	Cash with the Salem Urban Co-operative Society, Ltd, in current account No 842 (<i>Vide</i> Appendix F).									2,392	0 0		
	Total	9,344	2 3		Total ...									9,344	2 3		

Vouched and certified correct.

N. V. KRISHNIAH CHETTY,

Secretary,

Salem Urban Co-operative Society, Ltd. 22-5-25.

T SUBRAMANIA AIYAR,

President,

Flood Relief Committee, Salem District.

APPENDIX A.

FLOOD RELIEF.

Public meeting convened by Mr. S. C. Venkatappa Chettiar, B. A., B. L., Chairman, Municipal Council, Salem and other prominent citizens of the town on 31-7-24 at the Town Hall, Salem, to concert measures for Flood Relief.

1. இந்த சபையார் தற்காலம் தென்னிந்தியாவுக்கு அதிவிருஷ்டியினால் ஏற்பட்டிருக்கும் விபீதமான நஷ்டத்தையும் கஷ்டத்தையும் பற்றி மிகவும் அனுதாபப்படுகிறார்கள்.

2. வெள்ளத்தால் ஏற்பட்ட கஷ்ட நஷ்டங்கள் வெகு ஜனங்களைப்பொருத்ததாயிருந்தாலும் அவர்களில் ஆயிரக்கணக்கான அநேகர் தற்காலம் ஜீவனோபாயமின்றி உணவு பொருள்களைத்தேடிக்கொள்ள சகதியற்றவர்களாயும் குடியிருப்புக்கு நிழலில்லாதவர்களாயும் மிகுப்பதை உத்தேசித்து அபயிப்பட்டவர்களுக்குத் தற்கால சாந்தியாய் செய்யக்கூடிய உதவியைச்செய்யவும் இராஜாங்கத்தாரைக்கொண்டு செயலிக்கவும் வேண்டிய எல்லாவித பிரயத்தனங்களையும் செய்யும்பொருட்டு அடியில்கண்ட கனவான்களடங்கிய நிர்வாக சபையை நியமிக்கத் தீர்மானிக்கப்பட்டது.

- M.R.Ry. Rao Bahadur T. Subramania Aiyar Avl, B A, B.L.,
High Court Vakil, Salem. (President).
- „ D. P. Chennakrishna Chettiar Avl, Merchant, Banker and
Municipal Councillor, Salem. (Treasurer).
- „ M. Padmanabha Chettiar Avl., Zamindar, Salem.
- „ S. C. Venkatappa Chettiar Avl, B A, B L, Vakil and
Municipal Chairman, Salem. (Secretary).
- „ K. Sivasankara Mudaliar Avl., Zamindar and President,
First Class Bench Court, Salem. (Secretary).
- „ Dr. P. Varadharajulu Naidu Avl, Editor, Tamil Nadu, Salem.
(Secretary).
- „ Natesa Pandaram Avl., Merchant, Salem.
- „ C R. Veeraraghavachar Avl., Vakil, Salem.
- „ S. Ellappa Chettiar Avl, M. L. C., Vice-President,
District Board, Salem.
- „ C. D. Appavu Chettiar Avl, M. L. C., Salem.
- „ Late Kandasamy Kandar Avl., Mirasdar, Nanjaiedayar, Namakal.
- „ N. Rama Rao Avl, B A. B L., High Court Vakil, Salem.
- „ V. R. Perumal Chettiar Avl., Sowcar and Municipal Councillor,
Salem.
- „ P. Kandasami Pillai Avl, Salem.
- „ T. Arumugam Chettiar Avl, Salem.
- „ Sreenivasalu Naidu Avl., Agent, Asiatic Petroleum Co., Salem.
- „ M D Subbaraya Aiyar Avl, B A, B L, High Court Vakil, Salem.

- M R Ry. Doraisamy Reddiar Avl, Zamindar, Namakal.
 „ C. Rajalingam Chettiar Avl., Zamindar, Elambali, Tiruchengode.
 „ Dr. H. Srinivasiah Avl, L. M. S, Medical Practitioner, Salem.
 „ K. V. Bangaru Chettiar Avl., Salem.
 „ Kandappa Mudahar Avl., Merchant, Salem.
 Janab. Moulvi Tamizuddin Sahib Bahadur, Salem.
 „ S. K. Abdul Rahiman Sahib Bahadur, Merchant, Salem.
 „ Syed Ameer Sahib Bahadur, Merchant, Salem.
 „ T. A. Ameerullakhan Sahib Bahadur, Merchant, Salem.
 M. R. Ry. N. V. Krishniah Chettiar Avl., Secretary,
 The Salem Urban Co-operative Society, Ltd, Salem
 Janab. Sowcar Ghouse Mohideen Sahib Bahadur, Salem.
 M. R. Ry. C. Rajagopalachariar Avl., Salem.

ஹை நர்வாக சபைக்கு இன்னும் அவசியமான அங்கத்தினர்களையும் சேர்த்துக்கொள்ளவும் அதிகாரம் கொடுக்கப்பட்டிருக்கிறது.

3. ஜில்லா முழுவதும் கஷ்ட நிவாரணத்திற்காக தானியம், துணி முதலியவை வசூலிக்கவும் ஹை சபைக்கு அதிகாரம் கொடுக்கப்பட்டிருக்கிறது.

4. அக்கிராசனர், காரியதரிசிகள், பொக்கிஷதாரர் இவர்கள் அவசியமான செலவுகளை செய்யவும் அதிகாரம் கொடுக்கப்பட்டிருக்கிறது.

ஸ்ரீமான் T. சுப்ரமணிய அய்யர் அவர்கள் ஹை சபைக்கு அக்கிராசனராகவும்
 ஸ்ரீமான் சிவசுந்தர முதலியார் }
 „ வெங்கடப்ப செட்டியார் } காரியதரிசிகளாகவும்
 „ வரதராஜசூ நாயடு }
 „ சென்னகிருஷ்ண செட்டியார் பொக்கிஷதாரராகவும் நியமிக்கப்பட்டது.

(Signed) T. SUBRAMANIA AIRAR,
 Chairman.

(True translation is appended)

(True copy)

SALEM, }
 15th May 1925. }

T. SUBRAMANIA AIYAR,
 President, Flood Relief Committee,

(True Translation.)

Minutes of the proceedings of the Public Meeting held at the
 Town Hall, Salem, on 31-7-1924.

1. This meeting deeply sympathizes with the people of South India who have sustained extraordinarily great losses and suffered extraordinarily great hardships from the excessive rain of the present season (and the consequent extraordinary floods).

2. Although the losses and hardships caused by the floods have affected innumerable people considering that thousands of them have now lost their means of livelihood and are unable to find the provisions necessary for the sustenance of life, and the shelter needed for living, with a view to enable these to tide over the crisis by alleviating distress, the following managing committee is appointed to make every endeavour and devise every measure necessary both for affording relief itself and to get the Government to afford it.

MEMBERS OF COMMITTEE.

The names are given in English in the original and they are 29 who, it is hoped, will be found to be very representative men on enquiry.

This above committee is also given power to add others to their number when necessary.

3. The committee is authorized to receive help whether in the shape of money, grain, cloths or otherwise throughout the district.

4. The President, Treasurer and the Secretaries are authorized to spend the collections in administering relief.

- | | | |
|---------------------------------|----------------|--|
| Sriman T. Subramania Aiyar, | (President). | |
| „ K. Sivasankara Mudaliar, | } Secretaries. | |
| „ S. C. Venkatappa Chettiar, | | |
| „ P. Varadarajulu Naidu, | | |
| „ D. P. Chennakrishna Chettiar, | Treasurer. | |

(True Copy)

SALEM,
15th May 1925.

}

T. SUBRAMANIA AIYAR,
President, Flood Relief Committee,

APPENDIX A1.

Second public meeting convened by Mr. Rao Bahadur T. Subramania Aiyar, President, Flood Relief Committee, Salem District to concert further measures in aid of the Flood Relief work of the district and held at the College Hall, Salem on 11-8-24 with Mr. R. H. Courtenay, I. C. S., District and Sessions Judge, Salem, in the chair,

RESOLUTIONS :-

1. This meeting of the Town and District of Salem deeply sympathises with the people who have suffered from the recent floods in South India and reaffirms the resolutions passed at the meeting held in the Town Hall, Salem, on the 31st July 1924.

From the chair. Carried unanimously.

2. This meeting resolves that the following gentlemen be added to the committee already appointed to organise measures for relief.

Proposed by Mr. Rao Bahadur T. Subramania Aiyar.

Seconded by Mr. D. P. Chennakrishna Chettiar.

Names of Gentlemen proposed.

Rev. W. J. Hatch, London Mission, Salem.

Father Bruyer, Salem.

Presidents of all Taluk Boards.

Mr. Iravatha Udayar, Sendamangalam.

„ Veerappa Pillai, Pandamangalam.

„ S. V. Venkatramana Iyer Agent, Imperial Bank, Salem.

„ Baboo Sahib Bahadur, Harur.

„ Abdul Khader Sahib Bahadur, Atur.

„ Veerasami Naidu Garu, Krishnagiri.

„ D. A. Kandasami Chettiar, Dharmapuri.

„ Venkatapathi Mudaliar B.A., B.L., Vakil, Namakal.

„ R. Venkatagiri Iyer Hosur.

„ Dr. P. Subbarayan, Zamindar, Komaramangalam.

„ K. Subbaraya Mudaliar.

„ K. V. Subba Rao B.A., B.L., Vakil, Salem.

„ G. F. F. Foulkes Zamindar and President, District. Bd, Salem.

„ K. T. Paul, Salem.

„ Chidambara Reddiar Zamindar, Namakal.

„ K. T. Parthasarathi Iyengar Mirasdar, Velur.

„ P. Sangameswara Chettiar Banker, Komarapalayam.

„ M. Chinnakrishna Chettiar, Uttankarai.

„ Vijayarangam Naidu Garu, Chintalapadi.

„ R. Muthusami Iyer Mirasdar, Anayambatti.

„ Yejaman Desai Chettiar, Kaveripattinam.

„ P. L. Ramasami Naicker, Pagalpatti.

„ Venkata Rao, Krishnagiri.

„ C. Vijayaraghavachariar Vakil, Salem.

„ K. Narasimiengar B.A., B.L., Vakil, Salem.

„ C. M. Ranga Rao Vakil, Namakal. Carried unanimously.

3. This meeting resolves to appeal to Sir. P. Thyagaraja Chettiar's Flood Relief Committee, Madras, to grant for the present a sum of Rs. 5,000 to supplement the district collections, so that the relief afforded may not be much too inadequate.

Proposed by Mr. K. Sivasankara Mudaliar.

Seconded by Reverend W. J. Hatch. Carried Unanimously.

4. This meeting further resolves that a similar appeal be made to the People's Relief Committee, Madras, for Rs 2,000 or such other sum as they may be pleased to give for the sufferers in this district

Proposed by Mr S. C Venkatappa Chettiar.

Seconded by Mr K Narasimha Iyengar. Carried unanimously.

5 The present working committee consisting of Rao Bahadur T Subramania Aiyar, President; Secretaries Messrs K Sivasankara Mudaliar, S C Venkatappa Chettiar and Dr. P. Varadarajulu Naidu and Treasurer, Mr. D P. Chenna-krishna Chettiar be empowered to appoint local committees wherever necessary for the actual distribution of relief

Proposed by Mr. M D. Subbaraya Aiyar.

Seconded by Mr L S. Narayana Aiyar, Principal, College, Salem.

Carried unanimously.

(Signed). R H COURTENAY.

(True copy)

SALEM, }
15th May 1925. }

T SUBRAMANIA AIYAR,

President, Flood Relief Committee

ANNEXURE I. DAMAGE B.

Names of Taluks affected	IRRIGATION WORKS.		DAMAGE TO PRIVATE PROPERTY.								LOSS OF CATTLE.		DAMAGE TO CROPS AND LAND.				Remarks.
	Amount of damage caused by floods and the ayacut under them		Substantial (well built) houses.				Thatched houses built of stone or mud				Other moveable property damaged or washed away or otherwise lost and estimated value of property	No. of cattle lost and their estimated value.	Value of standing crops lost		Dry and wet lands covered with sand or otherwise rendered unfit for cultivation.		
	Incharge of		Completely destroyed		Partially destroyed		Completely destroyed		Partially destroyed				Completely.	Partially.	Extent	Estimated cost of reclamation	
	P. W. D.	Revenue Dept.	No.	Approximate value of loss	No.	Approximate value of loss.	No	Estimated value of loss.	No	Estimated value of loss.							
Namakal	6	Rs. 750	1	Rs. 150	348	Rs. 10,340	44	Rs. 585	Nil.	Nil.	Rs. 64,834	Rs. 27,674	361—43	Rs. 30,720	This excludes the value of Rs.10,875 for 61 wells which were silted up with sand. Do. 24 wells value Rs. 2,850
Tiruohengode	72	17,070	44	5,530	559	19,910	64	1,040	Nil.	Nil.	16,890	13,140	358	46,070	
Omakur	86	720	...	...	...	...	1,200	..	105	420	
Dharmapuri	5	1,100	29	2,900	17	510	98	1,990	.	....	.	200	..	....
Total	83	19,520	74	9,580	960	31,480	206	3,615	.	....	82,444	41,014	824—43	77,210	

(True copy)

T. SUBRAMANIA AIYAR,
President.

(True copy)

M. R. SANKARANARAYANA AIYAR,
20-11-24
For Collector.

APPENDIX C.

**Abstract of cash collections for the Flood Relief Fund Salem District
from 4th August 1924 to 14th May 1925.**

Details.	Salem Town Collections			Salem District Collections			Outside Collections.			Total.		
Donations by Public Bodies and Associations	250	0	0	1,350	0	0	2,510	0	0	4,110	0	0
Contributions by individuals through members of com- mittee or Sub-committee or others ..	459	3	3	1,737	11	0	838	0	0	3,064	14	3
Individual Collections made directly by the Committee ..	1,586	0	0	511	4	0	72	0	0	2,169	4	0
Total ...	2,295	3	3	3,598	15	0	3,450	0	0	9,344	2	3

APPENDIX C₁.

Flood Relief Fund Salem.

**Donations from public bodies and Associations
received up to 15th November 1924.**

Serial No.	Names of Donars.	Amount.
1.	Madras Central Flood Relief Fund	... 1,500 0 0
2.	District Board Salem	... 1,000 0 0
3.	Tamil Nadu Congress Committee Trichinopoly	... 500 0 0
4.	Taluk Board Namakal	... 300 0 0
5.	Wellington Military Officers	... 200 0 0
6.	Salem Municipal Council	... 150 0 0
7.	Non-Gazetted Officers' Association, Salem	... 100 0 0
	Total ...	3,750 0 0

After the preliminary audit of the 15th November 1924.

8.	Ceylon Government	... 300 0 0
9.	Union Board Tiruchengode	... 50 0 0
10.	Wiltshire Regiment	... 10 0 0
	Total ...	360 0 0
	Grand Total ...	4110 0 0

APPENDIX C₂.

Flood Relief Fund, Salem.

Contributions through Committee or Sub-Committee Members or others,
with the names of the Members and of the Contributors where known.

From 4th August 1924 to 15th November 1924

Serial No	Names of persons through whom received and of contributors where known.	Amount.		
		Rs.	As.	Ps.
1.	Indian Labour abroad through M. R. Ry Doctor P Varadarajulu Naidu			540 0 0
2.	Through M. R. Ry. P. Sangameswara Chettiar Avl., Komarapalayam			386 0 0
	Mr. P. Sangameswara Chettiar	100	0	0
	„ L. K. Govindasami Chettiar	50	0	0
	„ T. A. Arthanari Chettiar	25	0	0
	„ V. Varadappa Chettiar	5	0	0
	„ L. K. Perumal Chettiar	10	0	0
	„ L. Arthanarisami Chettiar	5	0	0
	„ A. V. Palanisami Chettiar	10	0	0
	„ K. Venkatrama Chettiar	5	0	0
	„ T. K. Venkatrama Chettiar	5	0	0
	„ P. Balavenkatrama Chettiar	50	0	0
	„ K. R. A. Ganapathi Aiyar	10	0	0
	„ A. R. Chennappa Chettiar	5	0	0
	„ J. S. Arthanari Chettiar	10	0	0
	„ A. R. Venkatmarayana Chettiar	20	0	0
	„ M. Danabala Chettiar	10	0	0
	„ A. K. Arthanarisami Chettiar	10	0	0
	„ V. Nagamanickam Chettiar	5	0	0
	„ P. P. Marayya Chettuar	10	0	0
	„ L. P. Perumalsami Chettiar, } V. Arthanari Chettiar }	10	0	0
	„ O. R. Perumal Chettiar	5	0	0
	„ G. A. Nagi Chettiar	3	0	0
	„ R. K. Kandasami Chettiar	10	0	0
	„ S. Thammanna Chettiar, } Damodaram Chettiar }	5	0	0
	„ A. R. Lakshminarayana Chettiar	5	0	0
	„ K. Arumugam Chettiar	3	0	0
	Total	386	0	0
		926	0	0

Serial No	Names of persons through whom received and of Contributors where known.	Rs.	As.	Ps.	Amount. Rs. As. Ps.
	Brought forward ...				926 0 0
3	Through M. R. Ry S. Venkatapathi Mudaliar Ayl., Namakal ...				218 8 0
	Mr. S Venkatapathi Mudaliar, Oruvandur ...	25	0	0	
	„ Samanna Mudaliar ...	15	0	0	
	„ Nanjappa Mudaliar ..	15	0	0	
	„ K. Subramanya Mudaliar, ...	15	0	0	
	„ Ramasami Mudaliar, Village Munsiff ...	5	0	0	
	„ K. L. Subramanya Aiyar, Karnam ...	5	0	0	
	„ Ramasamy Aiyar ...	5	0	0	
	„ Sanjeevai Servai ...	5	0	0	
	„ Nallanna Mudaliar ...	2	0	0	
	„ T. S. Subba Aiyar, Hazur Sheristadar, Vellore ...	40	0	0	
	„ Saptharishi Reddiar Zamindar of Kattuputhur ...	25	0	0	
	Mohanur V. E. S. Am. Bank ...	10	0	0	
	„ „ P. S. A. R. A. R. Bank... ..	10	0	0	
	„ Rajalinga Mudaliar, Mohanur ...	10	0	0	
	„ Pujari Muthusami Mudaliar ...	10	0	0	
	Bazaar Street Collections ...	14	8	0	
	„ Manicka Mudaliar ...	2	0	0	
	„ Arumugam Servai ...	5	0	0	
	Total ...	218	8	0	
4.	Mr. Seetharamiah, President, Union Board, Hosur (three instalments) ...				216 6 0
	„ K. S. Naraniar, Revenue Divisional Officer, Hosur ...	5	0	0	
	„ T. P. Chandran, Medical Officer, Hosur	5	0	0	
	„ Munusamappa of Anikal ..	25	0	0	
	„ Gundappa of Alsoor	26	0	0	
	„ Nanjunda Chetty of Kelamangalam	5	0	0	
	„ Venkatasamappa	1	0	0	
	„ Chennappa Reddi of Goparapalli.	10	0	0	
	Carried over	77	0	0	1,360 14 0

Serial No.	Names of persons through whom received and of Contributors where known.	Amount		
		Rs	As	Ps
	Brought forward ...	77	0	0
	1,360 14 0			
Mr.	Narasimmiah of Ballapalli ...	10	0	0
„	Keuchamuni Reddi of Ballapali.	5	0	0
„	Virabadra Pillai of Mathigiri	25	0	0
„	M. Bhashya Naidu	10	0	0
„	Muni Chettiar ...	5	0	0
„	Varadappa ...	1	0	0
„	Venkatasamappa ..	3	0	0
„	Kooganur Munisamappa .	25	0	0
„	Munivenkatappa of Perandapalli.	3	0	0
„	Papiah of Kagganur	1	0	0
„	Pilla Venkatappa	2	0	0
„	Nagappa of Burgur ...	2	0	0
„	Marappa of Machanapali	2	0	0
„	Lakshminarayana Goudu of Kumbarapalli ...	25	0	0
„	C. Surappa Achariar of Hosur .	1	0	0
„	K. Venkatagiri Aiyar	1	0	0
„	A. Subbaraya Chettiar	0	8	0
„	F. L. Marlow, Hosur	20	0	0
	Total	218	8	0
	Deduct amount of M. O. commission	2	2	0
	Net	216	6	0

5.	Through Messrs. S. V. Subbiah, S. R. Dharmalingam and T. M. Dorai- sami Naidu ...				197	0	0
Mr.	Kadurvelu Chettiar, Dharmapuri	100	0	0			
„	S. V. Subbiah	5	0	0			
„	Sankara Naidu	0	4	0			
„	Surianarayana Aiyar	0	4	0			
„	C. Kothandarama Naidu	5	0	0			
„	M. K. Narasimhachariar	2	0	0			
„	L. Subramanya Aiyar	0	8	0			
„	S. R. Dharmalingam	2	0	0			
„	Srinivasan	1	0	0			
	Carried over	116	0	0	1,557	14	0

Serial No	Names of persons through whom received and of Contributors where known.	Amount.		
		Rs.	As.	Ps.
	Brought forward ...	116	0	0
	1,557 14 0			
Mr.	Ponnuranga Mudaliar, Dharmapuri	5	0	0
„	M. V. Subbaraya Aiyar „	7	0	0
„	K. V. Narasimha Aiyangar „	1	0	0
„	B. E. Srikantha Aiyar „	0	8	0
„	R. Sundaram	0	4	0
„	B. S. Narasimha Aiyar	0	4	0
„	S. Venkatachalam	0	8	0
„	V. S. Subramanya Aiyar	0	4	0
„	R. Subramanya Aiyar	0	8	0
„	B. N. Subramanya Aiyar	0	4	0
„	V. Srinivasa Aiyangar	0	4	0
„	T. K. Chakrapani Rao	0	4	0
„	O. V. Subramanya Aiyar	0	4	0
„	T. Subba Rao	0	4	0
„	D. S. Neelakanta Aiyar	0	4	0
„	R. Lakshminarasa Aiyar	5	0	0
„	T. M. Duraisami Naidu	10	0	0
„	K. R. Arunachala Chettiar	10	0	0
„	K. A. M. Chittappa Chettiar	10	0	0
„	M. V. Sivasubbarama Chettiar	10	0	0
„	M. R. VEDIAPPA Chettiar	10	0	0
„	B. Madava Rao	0	10	0
„	P. K. Saikaranarayana Aiyar	0	10	0
„	D. K. Narasimha Aiyar	0	6	0
„	A. G. Nagoji Rao	0	4	0
„	Dharmapuri R. Narayana Aiyar	0	4	0
„	K. Subbaraya Aiyar	0	4	0
„	P. V. Rajagopala Aiyangar	0	4	0
„	Ramasami Naidu	0	4	0
Janab	Janghir Batcha	0	2	0
Mr.	Achuthayyar	0	4	0
„	Ayyasami Aiyar	1	0	0
Janab	Mahamad Ibrahim Sahib	5	0	0
	Total	197	0	0
	Carried over			1,557 14 0

Serial No.	Names of persons through whom received and of Contributors where known.	Amount		
		Rs	As.	Ps.
	Brought forward ...		1,557	14 0
6.	Messrs. Kuppusami Aiyar and Arthanari Aiyar, Edapadi ...		153	0 0
	Mr. K. Pattabi Chettiar, Edapadi .	2	0	0
	Janab J. K. Gulam Mohideen Sahib ..	3	0	0
	Mr. Jayarama Chettiar ..	1	0	0
	„ T. V. P. Venkatrama Chettiar ...	4	0	0
	„ S. Chinnu Rowther ...	1	8	0
	„ S Subramanya Chettiar	1	0	0
	„ A Narayanasami Chettiar	0	8	0
	„ Subba Rao	0	8	0
	Janab Meera Sahib ...	0	8	0
	Mr. R. Chenroya Mari Bathar ...	5	0	0
	„ A. M. S. K. & Sons. ...	5	0	0
	„ Chinnamanali A. V. Muthu- Bathar ...	5	0	0
	„ Do. Arumuga Bathar ...	5	0	0
	„ Chevantha Arumuga Bathar ...	4	0	0
	„ P. Karia Bathar ...	5	0	0
	„ Marimuthu Chettiar ...	3	0	0
	„ Santhana Muthayya Bathar ...	2	0	0
	„ T. Chinna Kanna Bathar } and Seetharama Aiyar } ...	5	0	0
	„ Thiru Annamalai Bathar ...	2	0	0
	„ P. Iruva Bathar ...	2	0	0
	„ Sabapathi Asari ...	1	0	0
	„ Maligai P. L. Pattabi Chettiar ...	1	0	0
	„ Pa. S. K. Bank	10	0	0
	„ Pa. S. V. P. Bank	10	0	0
	„ V. R. Bank ...	10	0	0
	Janab N. Nannu Batcha Sahib	5	0	0
	Mr. S. R. Venkatachallam Chettiar... ..	5	0	0
	„ Gurupatha Mudaliar ...	3	0	0
	„ M. R. Sons ...	5	0	0
	„ Ayanj Perur Munsiff Melmugam	5	0	0
	„ Perupuchi Bathar	0	8	0
	„ Yedapadi Asari Street collections	10	0	0
	„ P. S. Venkatrama Aiyar	0	8	0
	Carried over ...	123	0	0
			1,710	14 0

Serial No.	Names of persons through whom received and of Contributors where known.	Amount.		
		Rs.	As.	Ps.
	Brought forward	123	0	0
	Mr. Sengottuvela Goundar, Mitta Zamindar, Konganapuram	25	0	0
	„ Marimuthu Naicker	5	0	0
	Total	153	0	0
7.	„ C. Tm. Alagappa Chettiar, Hensura, Burmah			186 0 0
8.	Through Mr. L. S. Narayana Aiyar, Principal, Salem College			129 2 9
9.	Through Headmistress P. Somasundaram- mal on behalf of the pupils and teachers of Government Secondary Girls' School, Salem as I instalment			106 14 2
10.	Mr. K. Ranganatham Chettiar c/o S. P. Sm. R. M.			100 0 0
11.	Through Mr. V. T. Ramasami Aiyar, Tiruchengode			100 0 0
12.	Through Mr. A. Ramanatha Aiyar, Board High School, Krishnagiri			79 8 0
13.	Through Mr. V. Vedanayagam, Headmaster, London Mission High School, Salem			78 4 4
14.	Through the Superintendent of Police, Salem, Salem Police			57 8 0
15.	Mr. V. T. Govindasami Naidu, Tom John-mali, Malacca			51 8 0
16.	Through Mr. Venkatapathi Mudaliar			45 0 0
	Mr. V. K. Peerbatcha Sahib	35	0	0
	„ N. Krishna Rao	5	0	0
	„ N. S. Parthasarathy Aiyangar	5	0	0
	Total	45	0	0
17.	Circus contribution through Mr. V.S. Nara- simha Achariar, Tahsildar of Omalur			40 4 0
18.	Through the Superintendent of Police, Salem, Omalur Police			31 8 0
19.	Circus contribution through Mr. Kupp- sami Aiyar of Edapadi			40 0 0
20.	Through Mr. T. Srinivasa Aiyangar of Omalur			29 4 0
	Mr. Kuppanna Aiyangar	5	0	0
	Carried over	5	0	0
		2,735	11	3

Serial No.	Names of persons through whom received and of Contributors where known.	Amount		
		Rs.	As.	Ps.
	Brought forward ...	5	0	0
	Mr. V. S. Narasimha Achariar,	2,735	11	3
	Tahsildar ...	5	0	0
	„ T. S. Arthanari Aiyar ...	5	0	0
	„ K. Kandasami Mudaliar ...	5	0	0
	„ V. Ramasesha Aiyar, Stationary Sub-Magistrate ...	3	0	0
	„ A. Venkatrama Chetti ...	1	0	0
	„ Ramasami Chetti ...	2	0	0
	„ V. Srinivasa Sadanandam ...	0	4	0
	„ N. Somaskandam ...	0	4	0
	„ A. P. Saminatha Aiyar ...	0	8	0
	„ E. B. Steevans ...	2	0	0
	„ A friend ...	0	4	0
	Total ...	29	4	0
21.	Through Mr. Kandasamy Pillai ..			27 8 0
	Mr. R. Muthusamy Aiyar, Anayam- patti ...	10	0	0
	„ S. M. Srinivasam Pillai, Forest Ranger ...	5	0	0
	„ K. V. Rangachari, Sub-Registrar ...	3	0	0
	„ S. V. Ranga Rao, Rev. Inspector ...	2	0	0
	„ Manickam Chetti, Village Munsiff ...	2	0	0
	„ Venkatanarasa Aiyar, Sub- Inspector of Police ...	3	0	0
	„ Varadappa Chetti ...	1	0	0
	„ Govindasamy Naidu ...	1	0	0
	„ R. Sreenivasa Aiyangar, Clerk, Sub-Registrar's Office ...	0	8	0
	Total ...	27	8	0
22.	Through the Harur Tahsildar ...			22 6 0
23.	Through the Superintendent Central Jail, Salem ...			22 1 0
24.	Through Mr. Arthanari Aiyar of Edapadi ...			22 0 0
	Carried over ...	2,829	10	3

Serial No.	Names of persons through whom received and of Contributors where known	Amount		
		Rs	As.	Ps.
	Carried over			2,829 10 3
	Mr. Selvanaika Mudalar	10	0	0
	„ N. Muthusamy Chetti, Edapadi	5	0	0
	Janab Kadir Hussain Sahib, Bhavani	10	8	0
	Mr Arumugam Chetti	6	8	0
	Total	22	0	0
25.	Through Mr Balakrishna Naidu, Revenue Inspector, Rasipur			20 8 0
26.	Janab Thoddapatti Syed Manwar Sahib			18 4 0
27.	Through Mr. Venkatrama Aiyar, the Agent, Imperial Bank of India, Salem			13 0 0
	Mr. C. V. Srinivasa Rao	5	0	0
	„ K. Velu Pillai	1	0	0
	„ N. V. Ramasamy	1	0	0
	„ S. V. Ramasamy	0	8	0
	„ V. Krishnasamy	0	4	0
	„ M. V. Chennakesavan	0	4	0
	Janab Noortheen Khan	0	4	0
	Mr. J. M. C Dawsen	1	0	0
	„ V. Narayana Chetti	0	8	0
	„ T. R. Parasurama Aiyar	1	0	0
	„ T. S Venkatrama Aiyar	0	4	0
	„ K. P. Krishna Achar	0	4	0
	„ V. Gopinatha Rao	0	4	0
	Janab T. M. Mustafa Sahib	0	4	0
	Mr. V. Muthukaruppa Pillai	0	8	0
	„ Gopal	0	4	0
	„ C. Chennakesavalu	0	4	0
	Janab Kadarkan Sahib	0	4	0
	Total	13	0	0
28.	Through Mr K. V. Gopalakrishna Aiyar, Superintendent, Head Quarter Hospital, Salem			12 5 0
	Government Head Quarter Hospital	8	2	0
	Queen Alexandra Hospital	4	3	0
	Total	12	5	0
	Carried over			2,893 15 3

Serial No.	Names of persons through whom received and of Contributors where known.	Amount		
		Rs	As	Ps.
	Carried over		2,893	11 3
29.	Through Mr R Muthusamy Aiyar, Anayampatti		10	5 0
30.	Through Sub-Registrar of Sendamangalam		10	0 0
31.	Through Mr G. H. Vaughan		9	0 0
	Mr. G. H. Vaughan	5	0	0
	Staff	4	0	0
	Total	9	0	0
32.	Through the Assistant Engineer, Dharmapuri		8	2 0
33.	Through School Master Velup		7	14 0
34.	Through the Sankari Overseer		7	0 0
35.	The London Mission Church, Yercaud		6	0 0
36.	The Viraganur Teacher's Association		5	0 0
37.	Through the Sub-Registrar, Tiruchengode..		4	14 0
38.	Through Mr. N. S. Ramasamy, Yercaud...		4	2 0
39.	Hosur Taluk Office collections		2	4 0
	Total		2,968	4 3

After the Preliminary Audit of 15th November 1924.

40.	Mr. P. K. P. Ethirajula Naidu, Waw		40	8 0
41.	Through Miss. P. Somasundaram, on behalf of the pupils and Teachers of Government Secondary Girls' School, Salem as II instalment		18	0 0
	Do. as III instalment		1	0 0
42.	Through Mr W. E. Heart, D. F. O., North Salem		12	0 0
43.	Through Mr Seetharamiah, President Union Board, Hosur as the 4th and last instalment		9	14 0
44.	Yercaud Deputy Tahsildar and Staff		7	4 0
45.	The Teachers' Association, Valappadi		5	0 0
46.	Through Mr. K. Rangasamy, Ariyalur Teachers' Association		2	0 0
47.	Through Mr. N. Rangasami, Jalakantapuram Teachers' Association		1	0 0
	Total		96	10 0
	Grand Total		3,064	14 3

SALEM, }
15th May 1925 }

T. SUBRAMANIA AIYAR,
President, Flood Relief Committee,

APPENDIX C₃.

Direct collections by the Committee personally or through post

Serial No.	Subscribers	Amount.		
		Rs	As	Ps.
1.	Mr. Rajalingam Chettiar, Zamindar of Elamballi ...	250	0	0
2.	„ M. S. Gopalasami Chettiar, Zamindar ..	100	0	0
3.	„ M. Padbanabha Chettiar, Zamindar ...	100	0	0
4.	„ Rao Bahadur T. Subramanya Aiyar, B. A., B. L.,	100	0	0
5.	Doctor P. Varadarajulu Naidu,	100	0	0
6.	Mr. D. P. Chennakrishna Chettiar	100	0	0
7.	„ R. H. Courtenay I. C. S. District Judge	100	0	0
8.	„ T. B. Russell I. C. S. Collector	100	0	0
9.	„ C. A. Latham	100	0	0
10.	„ Chidambara Reddiar, Zamindar, Muthugapatti	100	0	0
11.	Kavoor Sithamma, Krishnagiri Alambadi	78	4	0
12.	Mr. Maduradas Jannathas Visanje	51	0	0
13.	„ K. Sivasankara Mudaliar, Zamindar	50	0	0
14.	„ C. Vijaraghavachariar, B. A.,	50	0	0
15.	„ S. P. Somasundara Mudaliar, Ammapet	30	0	0
16.	Captain T. S. Sastry, District Medical Officer	30	0	0
17.	Mr. K. Vythilinga Pandaram	25	0	0
18.	„ S. C. Ethirajulu Naidu	25	0	0
19.	„ S. V. Ramasami Reddiar, Valakumba, Ceylon	25	0	0
20.	Reverend W. J. Hatch	25	0	0
21.	Mr. V. Rakappa Nadar, Penang	25	0	0
22.	„ Srinivasalu Naidu, Suramangalam	25	0	0
23.	„ S. Ellappa Chettiar, M. L. C.	20	0	0
24.	„ P. V. Kandasami Chettiar	20	0	0
25.	„ S. K. Satagopa Mudaliar, Zamindar	20	0	0
26.	„ S. C. Venkatappa Chettiar, B. A., B. L.,	20	0	0
27.	„ M. D. Subbaraya Aiyar, B. A., B. L.,	20	0	0
28.	„ K. Marimuthu Mudaliar, Ammapet	20	0	0
29.	„ G. Ramachandra Naidu	20	0	0
30.	„ S. Ramasami Mudaliar	20	0	0
31.	„ B. Ranganatha Rao	20	0	0
32.	„ C. S. Bhaskar, M. A., Bar-at-Law	20	0	0
33.	„ K. C. Manavedan Raja, Deputy Collector, Sankari	20	0	0

 Carried over 1,809 4 0

Serial No.	Subscribers.	Amount.		
		Rs.	As.	Ps
	Brought forward	1,809	4	0
34.	Father J. Bruyer, Roman Catholic Church, Suramangalam	20	0	0
35.	Mr. T. C. Sethumadava Aiyar, B A, B L,	15	0	0
36.	„ K. Narasimmayya, Shevapet	15	0	0
37.	„ S. Venkataramana Aiyar, Agent, Imperial Bank.	15	0	0
38.	„ Beegon Virasami	14	0	0
39.	„ H. Srinivasaya, L. M S	10	0	0
40.	Messrs S. A. Gopalsami Chettiar & Brothers	10	0	0
41.	Mr. K. Narasimha Aiyangar, B. A., B L,	10	0	0
42.	„ K. Ramasami Mudaliar, Ammapet	10	0	0
43.	Janab Syid Amin Sahib	10	0	0
44.	Mr. K. N. Kesava Pillai, Omalur	10	0	0
45.	„ L. N Srinivasa Aiyar	10	0	0
46.	„ T. S. Jagaraj Pillai, B. A, B. L.,	10	0	0
47.	„ K. V. Gopalakrishna Aiyar, L. M. S.	10	0	0
48.	„ A. Balasubramanya Chettiar	5	0	0
49.	„ K. Muniappa Chettiar	5	0	0
50.	„ T. S. Adinarayana Chettiar, Bar-at-Law	5	0	0
51.	„ T. M. R. & M. V. Gopal	5	0	0
52.	„ R. S Manickam Chettiar	5	0	0
53.	„ P. Veniatha Mudaliar, Ammapet	5	0	0
54.	„ T. Kuttiappa Mudaliar, Ammapet	5	0	0
55.	„ Govindasamy Pillai	5	0	0
56.	„ Messrs Krishna & Co,	5	0	0
57.	„ C. Kandasami Gupta, Tinnevely District, Tisyane Velai	5	0	0
58.	„ Mariappa Pillai, Dootor, Velur.	5	0	0
59.	„ K. R. Seetha Raju	5	0	0
60.	„ K. Ramachandran, Sub-Assistant Surgeon, Sankai	5	0	0
61.	„ V. V. Subramanya Aiyar Do Etapur	5	0	0
62.	„ Krishnamurthi Do Harur	5	0	0
63.	„ D. P. Gopala Aiyangar, B A, B L,	5	0	0
64.	„ Kandasami Kandar, Kunjandiur	5	0	0
65.	„ Mari Odayar, Pujaripathi	5	0	0
66.	„ N. V. Krishnayya Chettiar	5	0	0
67.	Messrs. R. V. Venkatrama Chettiar and Sons.	5	0	0
	Carried over	2,078	4	0

Serial No.	Subscribers.	Amount		
		Rs.	As.	Ps.
	Brought forward	2,078	4	0
68	Mr. S. Gopala Aiyar, B. A., B. L., Pl. District Munsiff	5	0	0
69	Station Master, Bommidi	4	8	0
70.	Messrs. S.N. Padbanabba Chettiar, P.R. Jayagopala Chettiar	4	0	0
71.	Mr. S. Ramalinga Mudaliar	4	0	0
72	„ S. Ramasami Chettiar	3	0	0
73	Messrs. K. Sundaram Chettiar and Sons	3	0	0
74.	„ S. N. Ramasami Chettiar and Brothers.	3	0	0
75.	Mr. P. S. Venkatrama Chettiar	3	0	0
76.	Janab Hajee M. S. Babji Sahib	3	0	0
77.	Mr. Ponneri Vyra Mudali, Bodireddipatty	3	0	0
78.	Puduchatram Sub-Registrar's Office Collections	3	0	0
79.	Janab Abdulla Boi Sait	2	0	0
80.	Mr. S. Balavenkatrama Chettiar	2	0	0
81.	„ K. G. M. Adikesava Chettiar	2	0	0
82.	Janab P. Kadirbatcha Sahib	2	0	0
83	Tinnevelly District Tisaiyan Vilaf Desia Bhajana Sangathar	2	0	0
84.	Mr. T. M. Chinnia Pillai, M. A., B. L.,	2	0	0
85.	„ T. Krishnasami Aiyangar, B. A.,	2	0	0
86.	„ P. S. Narayana Rao, B. A., B. L.,	1	0	0
87.	„ Rajulayya	1	0	0
88.	„ K. S. Varadarajan, B. A., B. L.,	1	0	0
99.	„ Srinivasachariar, Overseer, Tiruchengode	1	0	0
90.	„ R. Ayalu Chettiar, Negapatam	1	0	0
91.	„ C. M. Ponnaya Pillai, Namakal	1	0	0
92	„ K. Rangasami Aiyar	1	0	0
93.	„ R. Krishnasami Aiyar	1	0	0
94.	„ N. V. Balu, Omalur	0	8	0
	Total	2,139	4	0

After the preliminary audit of the 15th November 1924.

95.	Mr. T. C. Ranganatha Pillay, B. A., Hazur Sarishtadar	5	0	0
96	„ S. Doraisami Aiyar, B. A., B. L., Vakil	5	0	0
97.	„ Sivahasi S. David Nadar, B. A., Deputy Collector	5	0	0
98	Janab Mohamed Amir Sahib, Sub-Overseer, Namakal	5	0	0
99	Mr. T. M. Swaminadha Aiyar, B. A., B. L., Vakil	5	0	0
100.	„ G. F. Mahadeva Aiyar, L. F. Overseer, Harur	5	0	0
	Total	30	0	0
	Grand Total	2,169	4	0

SALEM, }
15th May 1925 }

T. SUBRAMANIA AIYAR,

President, Flood Relief Committee.

APPENDIX D.

**Abstract of Relief given to the sufferers from the Cauvery
floods in this District.**

	Rs.	As.	Ps.
(A) By Government:—			
(1) Land measuring about six acres for house site at Mohanur, Namakal Taluk	1,500	0	0
(2) Do. do. do. at Pullakavundampatti, Trichengode Taluk	1,000	0	0
(3) Land to be acquired at Vellalalayam Tiru- chengode Taluk	1,000	0	0
(4) Palmirah trees supplied to those admitted to relief	1,500	0	0
Total	5,000	0	0
 (B) By the Ceylon Labour Commissioner, Trichinopoly.			
(1) Money doles distributed by the Assistant Com- missioner, Mr. I. K. Higginbotham perso- nally in the villages of Oruvandur and Velur, Namakal Taluk ...	1,850	0	0
(2) Price of land purchased by the Commissioner at Pallipalayam Tiruchengode Taluk, . .	1,000	0	0
Stamp, Registration and other charges	35	9	0
(3) 31 houses built by the Commissioner on the site in question under the personal super- vision of Mr. I. K. Higginbotham	520	0	0
(4) Well for the colony.	300	0	0
Total	3,705	9	0
 (C) By the late Mr. Kandasamy Kandar of Nanjavedayar.			
(1) 14 houses built for the sufferers in the neigh- bouring village of Anichampalayam at a cost of about Rs. 250	250	0	0

(D) By the Committee.

XII 30

Rs. As. Ps.

(a) (1) Site clearance at ^{of} Pullakoundampatty, Tiruchengode Taluk	100	0	0
(2) Money doles in fine of the villages of Tiruchengode Taluk for 358 cases . .	3,395	0	0
(3) 370 bundles of bamboos in 185 of the above cases at cost price	192	11	4
(4) 2 bundles Do. used up in pegging out- sites on the Pallpalayam land at cost price	1	0	8
Total	3,688	12	0

(b) 28 cases in two of the villages of the Omalur Taluk	280	0	0
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(c) 111 cases in two of the villages of the Penna- garam Taluk and its suburbs ..	906	0	6
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(d) (1) 283 cases in the Namakal Taluk Rs 2,887 less Rs. 1,850 by the Ceylon Labour Commissioner ...	1,037	0	0
(2) Cholan bought at Oruvandur for distri- bution	237	8	0
(3) For a fresh water well in the new colony at Mohanur, Namakal Taluk	400	0	0
Total ...	1,674	8	0

Total Relief afforded by the Committee
alone for the 4 Taluks for 775 families... 6,549 4 6

Grand Total of Relief granted in cash and kind by all the agencies
concerned to 775 + 45 or 820 families out of the 1166 owners of thatched houses
affected is therefore :-

	Rs.	As.	Ps.
(1) By the Government	5,000	0	0
(2) By the Ceylon Labour Commissioner, ...	3,705	9	0
(3) By the late Mr. Kandasamy Kandar of Nanjaiedayar	250	0	0
(4) By the District Flood Relief Committee ...	6,549	4	6
Total ...	15,504	13	6

SALEM, }
15th May 1925. }

T. SUBRAMANIA AIYAR,
President, Flood Relief Committee.

APPENDIX E.

Bamboo Account.

	Rs.	As.	Ps.	Rs.	As.	Ps.
640 bundles of Bamboos F. O. R. at the Bommidi Railway Station delivered at cost price by the Government Forest contractor, Mr. T. S. Chakrapani Naidu at 5 annas per bundle	200	0	0			
Railway Freight to the Cauveri Station	76	11	0			
Unloading charges	1	0	0			
Cartage to Pallipalayam	20	0	0			
Cartage to Komarapalayam	29	13	0			
Distributed 370 bundles for the use of 185 houses at cost price				192	11	4
Used up in pegging out house sites on Pallipalayam land, bought by Ceylon Labour Commissioner, 2 bundles at cost price				1	0	3
By sale of 183 bundles to Ceylon Labour Commissioner at cost price				96	14	0
By auction sale of 78 bundles by the Revenue Inspector, Komarapalayam at Komarapalayam				17	4	0
Loss on 4 bundles lost in transit and on the 78 bundles sold by auction				19	9	0
Total	327	7	0	327	7	0

SALEM, }
15th May 1925. }

T. SUBRAMANIA AIYAR,
President, Flood Relief Committee.

APPENDIX F.

Miscellaneous expenditure incurred by the Committee in connection with the work of collection and distribution and the balance on hand with the Treasurer, kept in deposit in the Urban Bank at Salem

	Rs.	As	Ps.
(a) (1) Stationery, printing and typing	78	2 3
(2) Postal and Telegraphic Charges	51	1 6
(3) Travelling expenses	218	10 9
(4) Sundries	25	6 3
(5) Writing Charges	..	10	0 0
(6) Loss incurred by loss and depreciation of Bamboq bundles	19	9 0
Total	..	402	13 9

Note.—Every Member of the working Committee owning a motor car of his own, the cost incurred on account of their tours consisted only of the value of petrol consumed, while the outside honorary workers, one of whom Mr. N. Rama Rao travelled about 300 miles and spent about two weeks into the bargain, would receive no more than the actual expenses incurred by them, these working out to two annas on each mile travelled all told.

(b) The Balance on hand is therefore :—

	Rs.	As	Ps.
Total cash receipts of the Committee	... 9,344	2	3
Total expenses including relief granted and miscellaneous expenditure incurred	.... 6,952	2	3
Balance on hand, in the Urban Bank, Salem	.... 2,392	0	0

N. B —(1) The Preliminary and final audits have yet to be paid for, as also the cost to be incurred in printing and circulating this report and the statements appended thereto.

(2) The office of the Committee has been at Kanaka Villa, the residence of Mr Sivasankara Mudaliar, Zamindar, at Hastampatti, Cherry Road. But the accounts of the Committee and the vouchers obtained for disbursements made by them with proper attestations and the fingerprints of the receipters where they are marksmen, as regards relief given, will be open to inspection at Chennakrishna Vilas, the residence of the Honorary Treasurer, at Sivaswampuram, Salem, by any one interested in the matter for six months from the date of issue of this report at any reasonable hour of the day and such inspection can be had on due notice to Mr Chennakrishna Chettiar, the Honorary Treasurer.

SALEM, }
17th May 1925 }

T. SUBRAMANIA AIYAR,
President, Flood Relief Committee.