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C O N T E N T S .

1. Four Lectures on Imperial Commerce, delivered in Rangoon in October, November and December 1919. By E.R.Holdsworth. pp.1-34. *X5-1-3-N2* *Subject*
2. Report on the Inquiry regarding the Manufacture of Gold Thread and Allied Embroidery Goods in Europe. By B.J.G.Shastrri. 1923. pp.35-67. *X9(MF118).5.N2*
3. Annual Report: Land Records Department, Bombay Presidency, ending 31st July 1923. pp.68-91. *Z231,211 F3*
4. Report: Land Records Administrations of Burma, ending 30th June 1924. pp.92-121. *Z438,211 F4*
5. Note on the Administration of the Registration Department U.P. of Agra and Oudh, 1923. pp.122-132. *Z252,198 F3*
6. Notes on Vaccination: U.P. of Agra and Oudh, ending 31st March 1924. By C.L.Dunn. pp.134-153. *L: 4231:5.252 Y*
7. Presidential address of the 4th Conference of the U.P. Secondary Education Association, Lucknow, 1924. By Shafaat Ahmad Khan. pp.154-194. *T2, 252, N24*
8. Report by the Mt.Hon. V.S.Srinivasa Sastrri regarding his Deputation to the Dominions of Australia, New Zealand and Canada, 1923. pp.195-202. *V1-3: 45(F73P15)*

FOUR LECTURES ON IMPERIAL COMMERCE-

Delivered in Rangoon in October
November and December 1919
under the Auspices of the
Imperial Idea Committee

BY

E. R. HOLDSWORTH, A.C.A.



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First Lecture.

THE connection in which I propose to consider the word " Empire " is with relation to commerce which may be divided under two main heads, *viz.*, trade with other members of the Empire and trade with foreign countries. The word itself suggests the union of many people in different parts of the world who, although of different nationalities, are bound together in the same way as a tribe which is composed of many different families, but is united under one head. It will, I think, be agreed by everybody that although individual effort may achieve great results yet greater results can be attained by co-operation. I will take as a concrete instance a factory which produces motor-cars. In the manufacture of a car there are an enormous number of different processes to be gone through before the machine can be put on the road in running order. In order that various parts may be produced as efficiently and economically as possible different persons perform different operations with the result that each individual part is produced by some one who, by constant practice and training, is especially fitted to perform a particular operation and as a result when the various parts are assembled the finished article is as perfect as it is possible to make it. In addition, however, to the actual manufacture of the car other specialists are continually engaged in experimenting with a view to improving various details for the machine. It will thus be seen that although there are an immense number of persons engaged upon work of a totally different nature they are all working to one common end, and the work of one is dependent upon that of another, for if one part of the machine is imperfect it necessarily follows that the whole machine is imperfect

and consequently is either not as efficient as it might be, or it may even be quite inefficient. I do not suggest that the employees in a factory are concerned with the production of goods merely with the disinterested idea of producing the best possible article for their employer. They are naturally concerned in advancing their own interests and making as much money as they can for themselves. In order, however, that their own interests may be advanced it is obvious that their work must be as good as possible, and thus in benefiting themselves they also benefit their employer. It follows that if a certain factory is able to manufacture goods of a high quality at reasonable rates the demand for the production of the factory will increase, so that it will be possible for the Company to make larger sales year after year. In order to cope with an increased demand it follows that more persons are employed in the factory, and in consequence more money will be paid month by month in wages, so that by efficient working the employees in a factory create increased work for their fellow-townsmen. I will now consider how this question affects a country such as Burma. It might be argued that Burma would have progressed in exactly the same manner as she has done if she had not been a member of the British Empire, but had been left to develop by herself. A few moments' consideration will show that this is not so. Before the commerce of a country can develop to a large extent it is necessary that a considerable amount of capital be sunk in the country, and a capitalist before venturing to sink his capital must have some reasonable expectation that the country into which he puts his money will afford him that protection which he is entitled to expect. It will, I think, be agreed that a British investor would rather lay out his capital in a country that is administered under the guidance of his own fellow countrymen. In order that a country may become wealthy it is

necessary that its exports should be greater than its imports, for unless this is so it naturally follows that year by year its wealth will decrease. So far as the country itself is concerned, it is immaterial whether its exports are sent to other members of the same Empire or to foreign countries, but as regards the Empire as a whole the same rule applies, *viz.*, that in order to acquire wealth it must export more than it imports. It will be seen therefore that a country is primarily concerned in producing what is necessary for its own consumption, in so far as it is able to do so, after which its surplus production is exported. Such exports should be so far as possible exported to other countries belonging to the same Empire. In some cases products of an Empire are given preference by means of tariffs over products of foreign countries. Such preference enables the exporting country to deal on more favourable terms than foreign countries, and for this reason membership in a large Empire is beneficial. After selling as much as possible to the other parts of the Empire any balance left over is available for the export to foreign countries. In recent years cases have arisen in which the prices offered by foreign countries are so large that in the absence of any restrictions exports would have been made to foreign countries before satisfying the needs of the Empire. In cases such as these it has been found necessary to prohibit the export of certain articles to foreign countries in order to satisfy the needs of other countries within the Empire. This course naturally results in the producers not realising so much for their exports as they would have done if no restrictions had been imposed but at the same time it benefits the countries to which the exports are made. The country in whose favour these restrictions are imposed is the one which feels the benefits that accrue from being members of the Empire, and the country on whom the restrictions are imposed suffers by not being able to take

full advantage of the high prices ruling in other countries, but it must be remembered that in future years the positions may be reversed and the country which was benefited previously may be the one to confer benefits.

I will now proceed to deal with commerce as a whole but with special reference to the commerce of an Empire. It may be presumed that the primary object of all who are engaged in commerce is to make money and it would be useless to say that this is not the case. In the olden days when civilization was not so far advanced and when commerce did not play such a large part in the supremacy of nations trade was regarded as being an occupation only fitted for the lower classes and traders as a whole were looked upon as persons whose sole aim and object in life was to amass wealth. As time went on and civilization developed the quality of goods produced became better and those engaged in the production of such goods began to take more and more pride in the quality of their workmanship and they formed themselves into unions or guilds. The formation of such guilds was a source of power to merchants and trade began to be looked upon as a more honourable occupation. I stated before that the primary object of any one engaged in trade was the making of money, but I would emphasise that a trader who takes no interest in his business for the sake of the business itself and its use to his country is not likely to be such a useful citizen as one who while working for his own interests realises that his country has a right to expect something of him. We have often heard the words "Burma for the Burmans" and of late years there have been signs that the inhabitants of this country are desirous of taking a more active part in the commerce of the country. It will be interesting to examine for a moment the feelings which prompt such aspirations. Every one who is proud of his country naturally desires to see his own countrymen take

as large a part as possible in the development of that country, and he is consequently keenly interested in seeing that his fellow-countrymen are as united and self-reliant as possible. This spirit is worthy of encouragement up to a certain point, but it may easily be carried too far, with the result that the development of the country is retarded because owing to the aversion to profit by the ability and experience of outside persons the industries of the country are not managed upon up-to-date lines.

It will perhaps be as well to take an instance of what I mean. A country may be capable of producing a commodity such as cotton, but owing to the fact that the industry has not been scientifically developed the cotton of that country is not of such a good quality as that of other countries who have been scientific producers of cotton for many years. It is clear that in the markets of the world the inferior article will fetch a lower price. The country producing the inferior article would surely be foolish not to profit by the experience of others in order to learn how to improve the quality of its products. The only ways in which such knowledge can be attained are (1) by visiting the other cotton producing countries, or (2) by experienced people coming to the country and producing the cotton in question in the most up-to-date manner. In the first case the necessary knowledge is acquired by going to other countries whilst in the latter case the knowledge in question is brought into the country, but in whatever way the industry is improved the part taken by the inhabitants of the country in such improvement and the subsequent commercial activities which result therefrom depends upon the time and money expended by the people themselves. In this world it may be taken as a general rule that you get nothing for nothing and no one can expect to profit by the industry and ability of others unless they are themselves prepared to work and to pay for the knowledge

imparted to them. It is therefore unreasonable to ask why outsiders should come to the country to exploit its industries, and thus earn the profits to which the indigenous race are entitled, and every one must admit that no one who is a true patriot would desire his country not to advance for absence of advance means stagnation. If in a certain district there was a large tract of land which the inhabitants were unable to cultivate because nothing would grow satisfactorily on it, and an outsider came and found that certain crops would grow well there it would be unjust and foolish to resent his presence in the district because he was exploiting its possibilities. The inhabitants should be grateful to him for showing them a new source of income and should learn from him how to cultivate similar crops. It will, I think, be conceded that in commercial methods the West is more advanced than many parts of the East and before the commercial relations between any two countries or persons can be equally satisfactory to both parties, it is necessary that their commercial capabilities and standards should be as nearly equal as possible. If in addition to a desire to benefit themselves, there is a joint desire to benefit the Empire to which they both belong the relations between the two parties are likely to be more productive of good than if there was no such bond between them. We have all of us heard of late years of the desire of the inhabitants of India to develop the industries and commerce of their own country themselves, as they were averse to seeing others make large profits out of the commerce of India and as I have said before this feeling has spread to Burma. Until recently Burma has been almost entirely agricultural and such industries as she had were carried on in a small way without any proper co-ordination. This type of industry although probably quite sufficient for the needs of the inhabitants cannot produce wealth for a country, for the type of goods

manufactured under these conditions is variable, and the quantity is usually small so that there is little or no surplus available for export. In addition to this it is difficult for small producers to market their goods outside their own country. The persons who carry on industries in this manner, without uniformity and on old fashioned lines may be likened to a number of small countries which are individually of little account in the world, but which, if united, would form a powerful Empire. An individual manufacturer or trader of the type I have mentioned above has not as a rule the opportunity or the means to develop his business, and work it on up-to-date lines, but if several manufacturers of a certain class of article combined together their united efforts should enable them to make real progress. Let us for a few minutes consider a concrete case, and for this purpose I will take the silk industry. In one district there may be forty persons who weave silk. Their products may be good, but owing to the fact that each is working by himself the quality of the product varies; moreover, the amount manufactured by each person is in itself inconsiderable with the result that the local market is the only place where their goods can be sold. We will now suppose that these forty persons combine together and agree to manufacture a certain quality and pattern of silk, uniform in texture and width. The result will be that there will be a considerable quantity of silk of a certain kind available for the market. This can either be sold direct by the manufacturers or through an agent. If the product is good in quality and reasonable in price a market will be created for it and in that case the demand will increase and the manufacturers will benefit in consequence. I have said before that the primary object of the trader is to make money, but that there are other things which a good citizen must consider as well. I will illustrate my meaning from the above example. We will

suppose that a demand has arisen for the silk made by the abovenamed combination of manufacturers, and that the whole of their available production can be readily sold, but that certain of them in order to make larger profits either sacrifice the quality to the quantity of their products or else deliberately manufacture an inferior article. It is true that their immediate profits will be greater, but the result is inevitable for the buyers will be disappointed and will stop purchasing the goods, and the result of the selfishness of a few members of the combination may be the ruination of the industry. It will thus be seen that these manufacturers who have combined together for the purpose of their mutual benefit, must cease to consider their own selfish ends for they owe a duty to the rest of the people with whom they have combined. This is also the case with the members of an Empire, for no country which is a part of an Empire is entitled to expect the benefits accruing from such membership without realising the responsibilities of membership. It is the same principle that is at the root of all co-operative societies, and if any member merely used the society to which he belonged for his own ends regardless of the injury which he was doing to other members he would soon find out that he was not desired as a member of any society at all. The old saying " Union is Strength " is as true to-day as it ever was and an Empire is a union of a number of different countries or races but each member must play the game and realise that he is not playing for himself alone. An example which will be clear to all is a game of football. One of the members of the team may be exceedingly brilliant but if his love of applause makes him selfish he may easily cause his side to lose the game. Every player is keen to do as well as he can, but if he is to be really useful to his team he must remember that he is only one member among several and that his efforts must be directed to assisting

his side to win the match and not to showing what a much better player he is than the others on the field. A player who plays well for his side and is unselfish will in the end be more successful than the selfish player for the defects of the latter will far outweigh his individual brilliancy and the result will be his exclusion from the team.

I have endeavoured to show by the above remarks that membership in a large Empire is beneficial to the members but that there are obligations on both sides. In these days an Empire depends largely upon its commerce and it is with the commercial side of the Empire that I am at present dealing. Before going further it will be as well to examine how the present methods of conducting commerce have arisen, and how they originated. The most primitive method of trading was by barter or exchange, *i.e.*, one commodity was given in exchange for another. It is clear that this method of doing business is only possible on a comparatively small scale and some better means was devised and the value of the various articles in which people traded was represented by means of tokens which corresponded to money as now used. In using the word "money" I would point out that I am referring to it in its narrowest sense, *i.e.* coined money. I will explain later what is meant by money in modern commerce. The use of money however although it improved matters was found to be inconvenient for many reasons, *e.g.*, it is easily stolen and has to be carefully guarded.

It is clear that if a country wishes to develop its commerce to any large extent it must deal with other countries and it naturally follows that, if money is difficult to keep in any place without being properly guarded, it is very much more dangerous and inconvenient if it has to be transported long distances for the purchase of goods. The Jews in the Middle Ages were the chief financiers and they realised that some method of finance which did not involve

the use of actual coin was an absolute necessity and they are credited with being the inventors of Bills of Exchange.

¶ When the commercial activities of Great Britain began to expand the traders themselves were faced with a very serious difficulty, which increased as their business grew. How were they to find the ready money with which to buy and to maintain huge stocks of commodities? Was it to be that only men who were very rich already should become traders? It is clear that if a trader has £5,000 to start with and he supplies goods to the value of £100 to each of fifty smaller traders, unless the great majority of those traders pay him in ready money he will soon have no cash with which to purchase more goods and continue to develop his business. Many a trader is ruined even nowadays for this reason; he gets all his money 'tied up' (as it is called) and his business stagnates for lack of new customers and new stock; for it is obvious that a large part of trade can never be ready-money trade. Clearly then, before commerce can develop very extensively, traders must have a system of credit and of banking. They must be able to borrow money, and they must also be able to place their surplus cash in safe keeping. A system of credit and a system of banking did indeed grow up almost concurrently. Traders who had cash which they desired to put in a safe place usually sent it to the London offices of the Goldsmiths Company, who at first simply stored it for a small fee. After a time however it occurred to the Company that this money might be lent to other traders who would pay interest for the use of it. In this way the Company made a large profit, and nobody was any the worse so long as the interest was paid, and so long as the Company always had enough cash left to pay any one who might suddenly want his money back. This is the beginning of English banking and credit. The Company's receipts actually passed from trader to trader

like banknotes, of which they are the forerunners. The traders also who deposited their money with the Company, instead of paying for goods in cash began to give their creditors a note to the officials of the Company asking them to pay the bearer named; this is the origin of the system of payment by cheque. It will be interesting to consider briefly how the present system of banking has developed, how vitally necessary it is for the commercial development of a country, and how an Empire extending all over the world like the British Empire is of assistance to its members in all matters of commerce. I will take as an example a trader A who has a reputation throughout his district of being an honourable man possessed of means. He is we will suppose interested in the purchase and export of the produce of his country and he hears that in a certain place there is a large amount of certain produce which he requires. This of course must be paid for but instead of sending some one from his place of business with actual money he writes to another trader B in the place where the goods are to be bought asking him to pay for the goods on his behalf. B does what he is asked because he knows that he will be duly repaid by A, and that his money is safe because A has a good reputation, *i.e.*, A's credit is good. The first part of the transaction has now been completed, *i.e.*, the produce has been purchased by A, but A has not sent any money from his place of business B having supplied it. The obvious question now is—How is A any better off for he owes B the money which has been disbursed and if he wants to pay him he must send the money to him. This would be so if commerce was composed of a number of individual transactions which could not be brought together and balanced one against the other. In considering who to ask to pay out the money on his behalf A will be guided by considerations as to who is most favourably situated to act as his agent in

paying out the money necessary to purchase the produce in question, for it is not to be supposed that any one would do the business for him in the ordinary way for nothing. He may therefore write to several persons in B's town asking them how much they will charge for paying out the money he desires. As a result of his enquiries we will suppose that he discovers that B desires to pay the same amount of money to some one in A's town and consequently is ready to oblige A provided that A reciprocates by paying the same amount to B's creditor in A's town. This of course A is ready to do, so that neither trader is put to any expense or risk in remitting money and yet their respective creditors are satisfied. I have made the example very simple on purpose but the whole of banking and exchange is worked on the principle set out in the above example and the movement of actual coined money is thus reduced to a minimum. It may be asked what benefit it is to the sellers of the goods that A and B should manage their finances as set out in the example quoted above, and the explanation is that A knowing what he can realise for the goods he buys calculates how much he can afford to pay for them and naturally the greater his expenses are the less price can he afford to pay for the actual goods. By reducing or actually eliminating the cost of remitting money he is in a position to pay more to the producer and yet earn a profit. It may be argued that in effect he will probably retain the extra profit himself and of course he will naturally endeavour to retain as much as possible, but it must always be remembered that this is an age of competition and the person who offers the best price gets the goods. If therefore A has not the expense of remitting the actual money he can offer a better price than the trader who cannot save that expense, so that the producer does in fact reap some of the benefit of A's methods of finance. But if

must be remembered that this method of finance if it is of benefit to A and B in their trade is equally beneficial to the persons who sell the produce to A and in fact to any one engaged in trade so that for the proper carrying on of commerce a system of banking and credit is necessary. I will before leaving this question give an example which may serve to make my meaning clearer. On a recent visit to Kalaw I needed some ready money and there were two courses open to me (a) to send a cheque to my Bank in Rangoon and request them to send me notes by registered and insured post and (b) to find some one in Kalaw who wanted to pay money to some one in Rangoon to whom a cheque on a Rangoon Bank would be useful. I adopted the latter course and was able to obtain notes in exchange for a cheque at a lower cost, with less risk, and more speedily than by having them remitted from Rangoon by post. It will be seen from the above examples how traders and others avoid the necessity of sending money from place to place in order to pay for their purchase but the examples quoted above although typical of the method in which the system of credit is operated give but a very faint idea of the extent to which it is employed in modern commerce. In the first example which I quoted above the transactions between A and B and their respective creditors have been settled without the necessity of remitting money from A's town to B's or *vice versa*. In other words the value of the goods sent to B has been set off against the value of the goods sent to A so that instead of money being sent from one district to another A's goods have been bartered for B's. I said above that barter was the most primitive method of conducting commerce and it may therefore seem strange that I should say that A's and B's transactions are in the nature of barter, but there is an essential difference between the ancient and the modern system of barter for in the old days

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a trader exchanged his goods direct, *i.e.*, if one man had an axe which he wanted to exchange for a coat he had to discover another trader who wanted an axe and who had a coat to offer in exchange whereas at the present time the value of the goods of one country is set against the value of the goods of another country and the balance between those two values is dealt with and adjusted through the medium of Banks.

Before I go further I think it will be advisable for me to deal very briefly with another aspect of this question. I stated in an earlier part of this lecture when alluding to " money " that I only used it in the narrowest sense, *i.e.*, coined money. The present system of banking and exchange has another reason besides convenience for its origin, namely the impossibility of financing commerce by coined money owing to the fact that there is not enough bullion in the world to do the work. Actual payments in coin are but a small percentage of the total payments through banks and other clearing houses. Unless therefore commerce was financed by means of banks it would be impossible for it to be carried on to its present extent owing to the lack of coined money. It therefore follows that the trade of any country whose inhabitants refuse to avail themselves of the facilities offered by banks is bound to suffer. The habit of hoarding money or investing it largely in jewellery is one of the greatest stumbling blocks to commercial development that exists. Money invested in this way is absolutely idle, and produces no benefit to the owner and equally of course no benefit to the country or the Empire. In this instance again we see that what benefits the individual also benefits the Empire. It is an acknowledged fact that if the hoarded wealth of India was utilised in the commerce of the country much could be done which is impossible at present for lack of necessary finance.

To return now to the consideration of the question of eliminating coined money from commercial transactions it must be remembered that the present system of Western finance has been built up by the experience of hundreds of years, and at the cost of many failures which brought ruin to numbers of people. Countries such as Burma are in a position, if they so desire, to profit by the failure of others but it must not be forgotten that in commerce specialization is essential and that much time and labour is necessary before a man can hold his own in the markets of the world. I have shown how business is conducted on credit to a large extent. I would point out that credit must have a solid foundation otherwise failure is almost inevitable. The commerce of the Empire is based on the credit of the Empire and it must be clear that such credit is better than the credit of a small country standing by itself. This statement may be challenged and I am prepared to admit that the credit of a small country may be good until something unforeseen happens such as a crop failure or a financial crisis in either of which cases if the country can obtain no help from outside either large numbers of the inhabitants may starve or the credit of the country may be destroyed, eventualities which will give the country a set back from which it may take years to recover. Now if that country is part of a large Empire it can safely reckon on a helping hand being extended to it in its time of trouble to enable it to carry on until better times. It may be asked by some people why I state that if a country is a member of an Empire it can be sure of being helped to tide over a crisis for it has often been said that business is not run for the sake of philanthropy. The reply is that persons who have sunk their capital in commercial enterprises in any country are naturally concerned to see that their capital is not lost, and consequently it is to their interest to see that assistance is forthcoming to avert disaster. This I admit is a more

or less selfish reason for aiding any one who is in difficulties but is nevertheless cogent. I can however quote instances of disinterested help given to members of the Empire when it is badly needed, *e.g.*, in the event of serious earthquakes which have caused wide-spread damage enormous sums of money for the relief of the sufferers have been raised in London the centre of the Empire.

I have in this first lecture attempted to give a sketch of the principles on which modern commerce is conducted with the smallest use and interchange of actual money. In my next lecture I propose to go further into the manner in which the produce and manufacture of various countries are financed and paid for and to show how necessary it is for a country to be up-to-date in commercial matters if it desires to conduct anything but an internal trade.

Second Lecture.

IN my first lecture I described briefly and in general terms how traders at the present time dispense with the use of actual coined money, and showed how necessary it was for the commerce of a country that there should be adequate banking facilities available. I have often heard complaints that there are few banking facilities in Burma, but it must be remembered that so long as the inhabitants of a country refuse to support banks by depositing money with them it cannot be expected that the banks will be able to develop their business in the country. I am afraid that many of the people who complain of the lack of banking facilities are in reality complaining of the fact that there are no banks in the districts from which they can borrow money.

It will be of interest to consider how a bank obtains its funds and how they are employed. For the purpose of this lecture I will deal with a bank formed under the Companies Act, *i.e.*, a Limited Company. The first funds which it obtains are from persons who subscribe for shares. These subscriptions form the foundation of the funds of the bank. In order, however, that the bank should be in a position to conduct business on a profitable scale, it is necessary for it to supplement the shareholders' money by funds obtained from other sources. This additional money is obtained from the general public, who either have current accounts with the bank or place their money on fixed deposit. A current account is, as the name implies, an account into which money is paid from time to time and from which money is drawn out, whereas money placed on fixed deposit is handed over to the bank for a certain period, so that the bank knows that it will have the use of

if for a definite time. It must be clear to every one that money which is liable to be drawn out at any time or to use a commercial term is payable " on demand " is of less use to the bank than money which is not to be repaid before the expiration of a fixed period. It is for this reason that a bank allows a higher rate of interest for money placed on fixed deposit than for money which is payable on demand, *i.e.*, on current account. It may seem strange indeed that a bank should be in a position to allow interest on money which it is liable to pay out at any time, but it must be remembered that every body does not want their money at the same time and consequently a bank can always rely on having a certain sum of money on current account. It is only when the depositors lose confidence in a bank that they all desire to draw out their money at the same time and when this happens we say that there is a " run " on the bank. If a bank's credit is good the depositors feel quite sure that their money will be repaid when they have need of it and it will thus be seen that the amount of money which a bank can obtain from the general public depends very largely upon the credit of the bank ; and if the credit of the bank is good it naturally follows that a large number of people will desire to place their money with that particular bank. The result of this is that such a bank does not pay such a high rate of interest for its deposits for there are naturally limits to the amount of money that the bank can usefully employ, so that if the general public desire to place more than that sum on deposit with the bank it will be in a position to accept the money from those depositors only who are satisfied with a lower rate of interest. I do not wish you to think that because a bank pays a comparatively high rate of interest its credit is therefore not good. Certain banks are in a position to pay higher rates than others, so that an intending depositor will, if he is wise, find out for himself if there are special circumstances in

connection with any particular bank which enable it to pay more than the usual rate. In the absence of such special circumstances he will be well advised to be very cautious in making his deposits. We see therefore that the three main sources from which a bank obtains its funds are from the shareholders, from fixed deposits, and from current accounts. I do not propose in this lecture to go deeply into such questions as Reserve Funds. I think that all I need say about such funds is to explain briefly how they originate. We will suppose that at the end of a year the bank ascertains that its profits amount to Rs. 5 lakhs. The Directors, as prudent men, desiring that the credit of the bank should be as good as possible, decide that out of this sum one lakh of rupees shall be set aside and not distributed amongst the shareholders, or in other words, they place one lakh of rupees to reserve. Similar transactions to this occur every day in the case of private individuals provided they are prudent, for we will suppose that a clerk in an office who receives a hundred rupees per month decides to set aside Rs. 10 each month to provide for unforeseen expenses. His action is precisely similar to the bank which places part of its profits or income to reserve. The clerk's income is Rs. 100 and out of this he sets aside Rs. 10 so that as the years go on his financial position and his credit become better and better. To return now to the bank which we have been considering, it is clear that it will be unable to pay the interest to its depositors or dividends to its shareholders unless it employs the funds placed at its disposal. There are a variety of ways in which those funds are employed. In the first place it must keep sufficient funds available to meet any ordinary demand for money that is made upon it, and as these funds are in cash or notes it follows that so much of its funds as are employed in this manner are idle, *i.e.*, they earn no interest. In the next place some of the funds

of the bank will be invested in securities such as Government Loans or as it is usually called "Government Paper" upon which money can be borrowed should if be found necessary to adopt this course. Such securities must of course be what is known as "gilt edged," that is to say, they must be absolutely safe investments, and in consequence the interest thereon will not be high. It is clear therefore that the balance of the funds available must be employed in some more profitable manner than either of those set out above. I do not propose to go into details but it will be sufficient to say that this balance is lent to various people for different purposes, the chief of which is for use in trade or commerce. It will thus be seen that the more funds that are placed at the disposal of the bank the greater part can the bank play in financing the commerce of the country or the Empire, so that a citizen who places his money with a bank is in fact assisting in the commercial development of his country and the Empire; whereas, the man who hoards his money is doing the exact opposite and in addition to this he is running the risk of having his savings stolen. I said in my previous lecture that in commerce union is essential, and this statement is borne out by my description of the method in which a bank obtains and employs its funds, for it is clear that an individual with Rs. 1,000 can do very little by himself to assist in the financing of the commerce of his country. This fact may be put forward as an excuse for not depositing money in a bank for it may be urged that such a small sum of money can make no difference one way or the other in financing the commerce of a country. We see here again the benefits which accrue from the union of a number of persons for if one thousand persons with a thousand rupees each deposit their money with a bank, that bank will find itself in possession of 10 lakh of rupees, a sum of money with which commerce

can be assisted very appreciably. The above instance again bears out what I have said before, namely, that a person in benefiting himself also benefits his country and the Empire for he benefits himself by reason of the fact that his money instead of being idle is increased year by year by the amount of interest which it earns and he benefits his country and the Empire by providing funds with which to finance commerce. It may be asked why it is better to place one's money in a bank in preference to investing it oneself, or lending it to other people and a convincing reply can be given from the example quoted above. Each of these one thousand persons who deposit a thousand rupees with the bank has the advantage of having his money spread out over the whole of the investments of the bank and those investments are made by men who are experts in finance ; whereas supposing each of these persons lent their money to one man or invested it in one Company their chance of losing it altogether is much greater for it is clear that the wider the field over which a person's money is spread the less chance there is of losing it. The officials of a well conducted bank are financial experts and they are careful to see that the bank's funds are invested as safely and as profitably as possible, so that the risk of a large loss is minimised. There have been many instances where a bank has failed merely because its investments were in only one class of securities, with the result that a temporary set back in those securities has resulted in the embarrassment of the bank and its consequent inability to meet its liabilities. Such embarrassment, it is true, may be only temporary, but as soon as the general public discover that the bank is in difficulties its credit disappears with the result that it is unable to get any fresh funds and the depositors will withdraw their money as quickly as possible. The science of banking is the result of the experience of hundreds of years and to

learn it properly needs constant application and hard work, so that the inhabitants of a country which has no proper banking system must realise that they have much to learn before they can engage in the business of bankers. It may not be apparent at the moment what these remarks have to do with the subject of my lectures, but I will now explain their relevancy. I have said in my first lecture that a country in order to acquire wealth must export more than it imports. If a country exports goods it naturally follows that these exports must be paid for. These payments are made not by the transmission of actual money but through the medium of banks. We will suppose that a seller in Rangoon sells a thousand tons of rice to some one in London, for which he desires to get payment at once. The first thing he does is to have his rice loaded on board a steamer and naturally when he has done this he obtains from the shipping company a document to the effect that a thousand tons of rice have been loaded on board the ship named in the document, the destination of which is London. This document is known as a "Bill of Lading." This document has to be produced at the end of the voyage to the shipping company and after being duly endorsed is given over to the company in exchange for the goods mentioned therein; in other words, it is the evidence which the shipping company insists upon to satisfy itself that it is delivering the goods to the proper person. At the time of making the arrangements to sell the rice the seller will make an agreement as to the price to be paid and the method of payment. For the purpose of this example we will suppose that the seller has arranged that payment shall be made in exchange for the Bill of Lading. He will write out a document setting out the terms of payment and demanding that the buyer shall hand over to the owner of the bill of lading the sum agreed upon in exchange for the bill of lading. This second document

is called a ' bill ' and the procedure is called, " drawing a bill." The position therefore is that the seller has got the Bill of Lading and has drawn a bill on the buyer for the agreed price. We will suppose now that he desires to obtain payment at once and goes to a bank with the document named above and requests the bank to pay him the value of the rice. If everything is in order the bank is ready to do this as it is part of its ordinary business. The bill of lading is attached to the bill drawn on the buyer so that the bank has the security of the goods shipped, against the money which it has advanced to the seller, but it must not be forgotten that the bank cannot itself get the proceeds of the rice until it arrives home. Consequently the seller must expect to pay the bank for giving him the proceeds of the rice at once, that is to say the bank gives him rather less than the face value of the bill. The bank therefore pays out money in Rangoon and receives it in London. It is clear therefore that unless the bank conducts other business of a similar nature with reference to imports into Burma its funds in Burma will become less and less and at the same time it will be amassing a large sum of money in England. In considering this example I am only dealing with a bank which has offices in Burma and in England. Most of the large banks engaged in Eastern trade have a large number of branches in various parts of the East, but I will deal with this question later on. A bank is therefore concerned to balance as nearly as possible the financing of exports from and imports into Burma, so that it shall not find itself in the position of having too much money in either place. If it finds itself with surplus funds in London it can of course adjust its finances by remitting actual money to its branch in Rangoon. Most of you have probably heard that the price of silver has gone up very largely so that if it is desired to remit say hundred thousand ounces of silver from London to Burma it will cost very

much more now than it would have cost when the price of silver was low, and this is one of the causes for the rise in the exchange. A further examination of the instance given above of a rice shipper will show how this comes about. I have explained how the bank pays money in Rangoon and receives it in London, and we will suppose that the whole of this money received in London has to be sent to Rangoon. The bank will have to pay very much more for the necessary bullion at the present time than it would have paid when the price of silver was low. It therefore follows that the money it receives in London is not worth so much when expressed in Indian currency as it was formerly, so that the amount in rupees which it pays to the Indian exporter is bound to be less than it was before, or in other words, instead of one shilling and four pence being worth one rupee as it used to be, the value of a rupee is now two shillings. The effect of this is that unless an increased price is realised for exports sufficient to cover the rise in exchange the exporting country receives less for its produce than it did before. It is obvious of course that so far as imports are concerned one rupee will purchase more than it did when exchange was lower, but I would point out that if a country exports more than it imports it will in the above case lose more than it gains. The increased price in silver is due to the enormous demand for it and it will be interesting for a moment to consider one of the reasons for this large demand. The chief produce of Burma is rice which is sold in form of paddy to the rice millers. The payment for the paddy is made, to a large extent, in cash and we will suppose that a certain mill purchases paddy worth a lakh of rupees for which it pays in cash, *i.e.*, partly in currency notes and partly in actual rupees. This money has to be sent from Rangoon into the districts and in a country whose inhabitants made a practice of keeping their money in banks the majority of

this cash would ultimately find its way back into the coffers of the banks and would thus be available for re-issue. If however the inhabitants of the country have formed the habit of hoarding every rupee they possibly can it follows that the cash sent from, we will say, Rangoon into the districts either does not come back to the banks at all or only a part of it comes back so that the cash in the possession of the banks becomes less and less as time goes on. This cash has to be replenished by the issue of further rupees so that it must be clear to all that year after year rupees are being sent out into the districts where they disappear. The Government of India consequently has to buy huge amounts of silver to replace the rupees that have disappeared. It is well known that the larger the demand there is for any particular commodity the higher the price will be unless its production can be increased to a corresponding extent. If therefore the demand for silver could be decreased to an appreciable extent it follows that the price would also decrease with the result that the rate of exchange would in all probability go down. It will therefore be apparent to you all that the practice of hoarding money is not only detrimental to the individual by reason of the fact that his wealth is unproductive but it is also detrimental to the country as a whole because it causes a fall in the value realised for the exported produce of the country ; and it is possible that this decrease in the price of a country's produce may mean that its exports do not realise a profit for if at the lower rate of exchange an exporter realised Rs. 10 for certain goods which cost him Rs. 9 he is making one rupee profit ; whereas if owing to the high rate of exchange he can only realise Rs. 8-8-0 he is making a loss and consequently it is useless for him to continue carrying on business as he has done before so that the production of the country decreases.

It may perhaps be of advantage to consider the manner

in which the high price of silver affects the rate of exchange from another stand point. The Government of India manufacture rupees from silver purchased in the open market and it naturally follows that if the price of silver goes up the cost of each rupee will be correspondingly increased, so that the same amount of money in England will purchase a smaller number of rupees when the price of silver is high than it will when the price of silver is low. Before leaving this subject it may be interesting to explain what is meant by the words " Council Bills " or to use the abbreviated word " Councils." Many of you have doubtless seen allusions to the sale of Council Bills in the newspapers but probably have no idea of what is meant by the term. The Secretary of State for India who, as you doubtless know, lives in England, has to make large payments in English money in London on behalf of the Indian Government and in order to enable him to do this he has to be provided by the Indian Government with English money. In the previous part of this lecture I have shown you the other side of the picture, namely, that there are people in London who have large sums of money belonging to persons resident in India which they desire to remit to India. The Government of India mint rupees in India out of silver which they purchase, but of course these rupees are not used for the payment of debts in English money. The Secretary of State for India issues orders or as they are technically called " Council Bills " instructing the treasuries in India to pay out a certain number of rupees to the persons named in the bills. In exchange for these orders the persons in London who have funds there and who desire to remit to India pay the value of these bills to the Secretary of State in British money. The Secretary of State therefore is enabled to pay the debts of the Government of India in British currency and the Government of India pays its English debts by means of rupees

handed out to persons who want those rupees in exchange for British money which they possess in England.

It may I think be safely said that London is not only the financial centre of the British Empire but also of the whole world for it is an undoubted fact that payments for goods can as a rule be more readily made through London Banks or Financial Houses than through any other agencies. The reason of this is that the financial activities of the British Empire extend all over the world and I have shown you previously that instead of actual cash passing in respect of sales and purchases of goods the values of these goods are set off against one another. I would remind you of the example given in my previous lecture of the manner in which two merchants avoided the necessity of remitting money from one place to another in order to pay their debts. We will for the moment suppose that neither of these traders **A** and **B** have any other place of business except in the towns in which they each reside. The effect of this is that the number of people who they can oblige by the class of operations which I explained before must of necessity be limited, for **A** who lives, we will say in Rangoon, can only oblige persons who desire to pay to or receive money from other persons in Rangoon and of course the same applies to **B**. If, however, **A** has a number of other branches in different parts either in his own country or in foreign countries, it follows that the number of persons whom he is in a position to oblige will be very much increased and his name will become very much better known, and if in addition to this his method of conducting business is satisfactory and his payments are prompt his credit will become better and better as the years go on. The effect of this will be that traders who desire to pay money will find that documents upon which **A**'s name appears are favourably regarded by other traders. If we apply this line of reasoning to the business

of the United Kingdom we find that owing to the enormous area over which the commerce of the British Empire is spread London as the centre of the Empire is more favourably placed for financing the various commercial activities of the world, or in other words, there are so many banks and banking institutions in London that a trader is always sure of finding some one in London who will act for him in the manner in which **A** acted for **B**. Some of you, however, may say that these same facilities would be available to Burma even if she were not a member of the British Empire and may ask what is the advantage of belonging to the Empire from a commercial point of view if these advantages are also at the disposal of others who are not members of the Empire. Let us for a moment consider if such a line of reasoning is in fact sound. Supposing for instance Burma was an independent country with its own King and its own system of government and education, I hardly think that in such a case the number of English speaking Burmans would be so large as it is at present nor would the inhabitants of this country have such facilities for studying in or doing business with the United Kingdom as they now have. If any Burmans desired to go to the United Kingdom to study they would merely be foreigners in a strange country and they would be forced to look after themselves as best they could; whereas at present when they go to the United Kingdom it is recognised that they are members of the British Empire and they have facilities which would not be available to them if they were merely foreigners who had come to the United Kingdom.

It will I think be of advantage to consider what is meant by the words "exports and imports." In the published reports of imports into and exports from any particular country the only figures that are shown relate to actual goods but it is quite incorrect to draw any conclu-

sion from the comparison of these two figures. I will take for a moment the case of the United Kingdom where the imports are shown as being very much in excess of the exports. It might be thought from this that year after year the United Kingdom would have to pay out larger sums of money than it received so that its wealth would be decreasing year after year. I would here remark that in considering this question I am not dealing with the imports into and the exports from the United Kingdom during the war as in those years the figures are abnormal. The actual goods imported and exported are by no means the whole of the true imports and exports of the United Kingdom. An example of this is the amount of freight paid by other countries to steamship companies in the United Kingdom for goods carried in British ships. In this case the United Kingdom has not sold goods to other countries but it has done work for them or in other words it has sold or exported its services and the other countries have to pay for those services in the same way that they have to pay for goods sent to them. These services therefore are from the point of view of the United Kingdom on exactly the same footing as exports of goods. When we consider the enormous amount of freight earned by British shipping companies it will be clear that any conclusion arrived at in respect of the trade of the United Kingdom which is based on actual imports and exports of goods only must be incorrect. In addition to this the United Kingdom has large investments in other countries from which it has to receive each year considerable sums by way of interest or dividends. This money is paid to the United Kingdom because capital has been provided for enterprises in other countries, that is to say, it is another case of payment for services rendered. Figures relating to this part of the country's trade cannot of course be compiled, but from the above remarks it will be clear

that exports may be divided into two classes :—

- (1) Visible, *i.e.*, actual goods for which money must be paid to the exporting country ;
- (2) Invisible, *i.e.*, services rendered or money lent which also have to be paid for ;

so that anything which causes money to be due to a country is an export from that country. Similarly imports are :—

- (1) Visible, *i.e.*, goods for which the importing country has to pay money to another country ;
- (2) Invisible, *i.e.*, services received and money borrowed for which the receiving country has to pay ;

so that anything which causes money to be due by a country is an import. I have thought it necessary to give this brief explanation in view of my previous statement that a country if it desires to acquire wealth must export more than it imports, for any one who studied the published figures of exports and imports in relation to the United Kingdom might be led to think that the wealth of the country was decreasing year by year. If this had in fact been the case the financial position of the United Kingdom could not possibly have been what it is at the present moment. In this connection I should like for a moment to go back to what I called invisible exports of and in particular to the dividends and interest received from capital invested in other countries. I need hardly say that what is an invisible export from one country is an invisible import into another country. This will I think be clearer from an example. We will suppose that the exports from Burma are shown as being Rs. 100 and that its imports are Rs. 95 it might be thought that the wealth of Burma had increased by Rs. 5, *i.e.*, the difference between Rs. 100 and Rs. 95. We will suppose however that $\frac{3}{4}$ ths of the exports were financed by capital from Siam and that

the profit on that part of the exports was Rs. 7, it follows that this sum of Rs. 7 does not remain in Burma but has to be sent to Siam to which country those profits are due. The result of this is that instead of Burma keeping the whole of the Rs. 100 which it receives for its exports it only keeps Rs. 93 as the remaining Rs. 7 has to be paid over to the persons in Siam who have provided the capital necessary to finance those exports so that in the absence of other considerations it has got at the end of the period Rs. 93 for its exports and has to pay out Rs. 95 for its imports and instead of being Rs. 5 richer it is Rs. 2 poorer. The lesson to be learned from this example is that if the exporting country is to reap the full value of its exports it must finance them itself. If therefore the inhabitants of a country have its best interests at heart they should do their best to provide the capital for financing their own industries. This principle is the foundation stone of the Co-operative Movement in Burma, the ultimate object of which is to enable the Burmans to finance their own agricultural operations and thus reap the full benefit of their industry. Of course where one member of the Empire finances another member, the Empire as a whole does not suffer but where Burma, for instance, is financed by foreign capital both Burma and the Empire lose that part of the profits from their commerce which are sent to other countries for capital provided and in some cases it does not only suffer by the loss of a certain amount of wealth which is bad enough, but that wealth may be amassed and used in attempts to crush it. As you know both Germany and Austria had sunk a large amount of capital in the industries of India and particularly Burma and it is unnecessary to explain how that wealth was used. You may say that the British Empire should have taken precautions against such things happening and not allowed foreign capitalists to share in its commerce. This may

be true to a certain extent, but the commerce of the British Empire has not been built up behind protecting walls. The soundest commercial supremacy is obtained by successful competition on equal terms with others and each citizen or country should aim at showing his superiority in open competition with all comers in preference to engaging in commerce behind a wall of protection. I will give you an instance from the world of sport which will I think be clear to all. An individual or a team is always more proud of a trophy won in an open competition than one which was obtained in a competition wherein the competitors were limited, but as you all know open competitions are hard to win and involve much hard work and often self sacrifice; similarly the commercial supremacy of the Empire and its various parts can only be obtained by constant and in many cases unselfish labour.

Third Lecture.

I HAVE up to the present dealt with the method in which the commerce of the Empire is financed, and before leaving the subject I should like to deal with the financing of the producers as apart from the persons who place the produce on the market either in a raw or manufactured form. I will at present deal with agricultural produce seeing that this country is mainly agricultural. As you all know a crop takes some time to mature after it has been planted but, even before planting, work has to be done and expenses have to be incurred in purchasing seed and preparing the ground for sowing. With such a large crop as the rice crop of Burma you will realise that the amount of money that is necessary for its production is very large, and it is provided in various ways, for the agriculturalist himself may be able to provide the necessary money, but if he cannot do this he has to borrow it, and from whatever person this money is received by the agriculturalist himself, a large proportion of the funds necessary to finance the crop is obtained from the Banks in the first instance. Various crops mature at different times of the year and it consequently follows that the money necessary to finance these crops is not required all at once so that the Banks who finance the crops can use the same money several times in the year and thus the funds of the Bank are not kept idle but are being continually used. Money is in fact an article which should never be given any rest at all. The more it is used the better it is, and as I have shown you before it should never be left idle. A human being or a machine needs rest from time to time for recuperation, but money can be made to work continually nor will a wise man ever give it a rest. It is a common practice for commercial firms to have only so much capital as is ordinarily necessary

for financing their businesses, and to borrow any additional funds that may be necessary from time to time as and when they require them. By the time that the produce arrives at the state when it is put on the market or exported the number of persons or companies dealing with it is very much smaller, for whereas the grower of the produce deals in hundreds of pounds or baskets the exporter as a rule deals in hundreds or thousands of tons. Although the number of persons dealing with the produce is smaller, the total quantity is unchanged and the need of funds to finance it before selling it to the consumers is just as great. We see therefore that capital is necessary—

(1) to grow the crop, and

(2) to put it on the market.

I will give you an example which I think will make my meaning clearer and will take a company which is engaged in cotton ginning. In case any of you do not know what this is I must explain that a cotton ginning company buys the raw cotton from the grower, cleans it, and separates the actual cotton from the seeds, packs it and sells it to the weavers who make cotton thread from it. Such a company has to buy the raw cotton from the growers and pay cash for it, and of course cannot realise the sale proceeds until it has ginned and sold the cotton. In order to enable it to do this it must have a large amount of ready money but as the cotton crop is only gathered once in a year these funds are not needed all the year round. It would therefore be unwise for a company always to keep enough money in hand to buy the raw cotton it needs, for if its credit is good it can borrow money for the period necessary and pay it back as soon as the ginned cotton is sold. The persons who finance commerce have always got calls upon their funds and they can constantly employ their money whereas such a company as I have instanced above is not as a rule concerned in the financing of other ventures. We

see therefore that in putting goods or produce on the market there are two different classes of operations—(1) those in connection with the purchasing, preparing and selling the goods, and (2) those in connection with the provision of funds, and under the present system of conducting commerce each is usually done by experts with the effect that the results are more satisfactory than they would otherwise be. Moreover as I said before the funds necessary to finance different crops are wanted at different times of the year so that the same money can be used to finance more than one class of produce in a year. I have already alluded to the fact that Banks and Financial Houses have many branches and shown how beneficial this is and what I have just said will enable you to realise this fact better for often a branch which has surplus funds can send them to another branch in a different place or country which needs them. It is clear that if the same funds can be used several times in a year to finance different goods the cost of such finance will be less than if these funds were only used once and were idle or else only earning a low rate of interest so that if the cost of financing is lower the cost price of the goods is lower and consequently the goods can compete better in the markets of the world. I will digress for a moment here to explain a phrase that you may have seen but not clearly understood, *vis.*, “dear money.” Some of you may think that a rupee is a rupee and it cannot be dear or cheap but the meaning of the words “dear money” is that money is in great demand and consequently high interest is paid for the use of it. The word ‘dear’ therefore means that a high price has to be paid for the use of it, and on the other hand if there is a small demand for money those persons who want to lend it are willing to do so at a low rate of interest and we are told that money is cheap.

Before leaving the question of finance I should like to

give you an example which I think will enable you to form a picture of the financial side of commerce. The example I have in mind is the Irrawaddy which as you are aware rises up country and is a small stream at its source but as it flows downward to the sea is fed by other small and large streams which flow into it, and increase its size. On its course downward towards the sea it supplies water for irrigating crops and further on in the delta the main stream is broken up into a number of smaller streams which fertilise a large area. The parallel is almost exact for the original stream may be likened to the shareholders' money in the Bank which is small compared with the whole funds of the Bank, whilst the tributaries are the persons who deposit money without which the Bank would not be enabled to benefit the country in which it exists. Without wishing to labour the parallel I would point out that even though the waters of the river empty themselves into the sea the likeness still remains for the river is fed from rain which is drawn up by the heat of the sun from the sea so that the water goes round in a cycle and does its beneficial work continuously. I think that the above remarks should make it clear how commercial people economise in the use of funds for financing their undertakings, but it may be difficult for you to realise the amount of capital required to finance Burma's rice crop and I very much doubt if it could be realised by the mere quotation of figures. Many of you however have travelled up-country in the train and have seen mile after mile of growing paddy. This paddy that you see is but a small portion of the whole of the crop and when you think that the seed for this has to be purchased, the land prepared and ploughed by the aid of bullocks which have to be bought and add to these the pay and expenses of the labourers it may help you to get some idea of the outlay necessary before the crop can be sold

to the millers. After this the millers have to mill the rice and sell it and as I said before it cannot be expected that the miller would have sufficient funds ready and waiting to purchase the paddy although their resources are as a rule greater than those of the agriculturalist. I could of course multiply instances to show the large amount of capital necessary to finance the produce of a country but will content myself with quoting one more, *viz*, teak. In this case the period which elapses before the wood can be sold is longer than in the case of rice for the trees are felled in the jungle and have to be floated down to Rangoon and I believe on the average it is about two years before a log felled up-country arrives in Rangoon and is sold. In the meantime money has to be spent on it in the shape of wages and other expenses and it must also be remembered that a large company or firm cannot close down and re-open just as it likes, so that if the produce cannot be sold at once large stocks accumulate which all represent capital sunk. You will see therefore that in the majority of commercial enterprises there are two things which go to make up the articles sold—(1) Capital and (2) Labour and neither one can do without the other but as the Capital is necessary before the Labour can be paid I should say that it was if anything the more important. It may be argued that Capital without Labour would be useless but on the other hand Labour without Capital would not be able to exist for lack of funds with which to keep itself alive. Labour therefore should not hate Capital as such and Capital should not use its power to oppress Labour. Of late years Labour has in fact realised that Capital is essential and the Labour Unions have made a point of accumulating as large funds as possible in order to strengthen their position.

I have dealt with the financial side of commerce and tried to explain on broad lines how the necessary money is

provided for various commercial enterprises and I now come to another essential part of commerce, *viz.*, accounts. Before going further I would remark however that I do not propose to deal in this lecture with the various methods of keeping accounts but will confine myself to explaining in general terms what is meant by the word "accounts" and of what vital importance they are not only to business men but to practically every one.

Let us consider for a moment what is meant by the word "accounts." One person will tell you that there is nothing difficult in them and that they are merely record of what is received and what is spent, whilst another will say that it is useless trying to explain or understand them because they are so complicated that only an accountant can possibly comprehend them. Between these two classes of opinion the truth lies, but whatever opinion may be held about them I think that no one will deny that they are essential in a greater or smaller degree in any matter that involves the receipt or disposal of money or goods. It will I think enable you to realise one of the many uses of accounts if I give you an example. Supposing any of you owned a shop like one of the large general stores in London such as William Whiteley's where it is said you can get anything from an elephant to a needle, you could not carry on business for a single day if you did not arrange your goods neatly and keep different classes of goods in different departments, for no one would know where to find anything they wanted, and consequently it might take hours before a person who wanted a packet of needles could be supplied with them; or again imagine how hopeless it would be waiting even in a smaller shop whilst the proprietor searched through the whole of his premises for the particular kind of button a customer wanted. In a well managed shop it is possible to produce at a moment's notice any article that is in stock. Similarly the accounts of a business are

a systematically arranged record of the goods and cash received or disposed of in the course of any undertaking which involves the handling of goods or money. I have asked you to picture a shop in which the goods were not arranged in any sort of order and how the customers would be inconvenienced, and in the light of that example I will ask you to consider the condition of a business man, who simply noted down in one long list everything that he had paid or received during a day and also the goods he had bought or sold. If his business was small he might be able to grasp in a vague way at the end of any particular day what he had done, but if he was shown these daily lists of transactions for a period of a year he could not be expected to arrive at any result from their perusal. It is therefore necessary to arrange the record of these individual transactions in such a manner that it will enable the trader to see how his business is going on during the year and to ascertain what has been the result of his labour at the end of a year. This summary of his accounts is most important to a trader for unless he has this it is practically impossible for him to know if he is making or losing money and what his financial position is. It may be likened to a picture of a large and elaborate building which shows the details of the structure and enables any one looking at it to form an accurate idea of it. Supposing someone attempted to describe the building in words the idea that the listener would get of it would in all probability be quite incorrect and at the best he would only be able to form but a vague idea of what had been described to him. If however as I said above a well painted picture were shown to him he could study it in detail and also realise what the whole building looked like. The better the picture of course the better would he be able to realise the nature of it and similarly good accounts will convey more to a trader than bad ones.

In olden days when goods were exchanged or were sold for cash there was not the same necessity for an elaborate system of accounts as there is at the present time, when the activities of a single firm may extend over the whole world. I propose first of all to deal with accounts in their easiest form and to show that in the most simple business some form of accounts are necessary. Let us consider a man who buys rice and retails it in small quantities for cash. The information he requires is whether he is making a profit, and, if so, how much, for if his profit is insufficient to cover his daily expenses his capital will become less and less and eventually he will become bankrupt. The accounts which such a trader has to keep are very simple but if a business of this sort necessitates accounts how much greater is the need of accounts in larger and more complicated businesses. It may be argued by some persons that in the past successful businesses have been run with practically no knowledge of accountancy, but an examination of such cases will usually show that either the profits were so large that the businesses were bound to be successful or that the proprietor of the business was a man of exceptional ability. In any new country, as I have said before, the inhabitants of which are not educated in commercial matters goods of considerable value could be exchanged for goods of little or no value, so that enormous profits would be made by traders who had little or no business knowledge. At the present time however with telegraphs, railways, steamers, etc., competition is very keen and a man has to be well versed in commercial matters before he can hope to make a success in business. Some of you may think that it is a trader's own concern if he is a failure in business but this is not so for the failure of one trader may have far reaching effects and may, and very often does, spell disaster for others. Moreover the prosperity of a country depends upon its commerce and if that commerce is being

unprofitably carried on by individuals it is obvious that no prosperity can result therefrom. If the commerce results in failure it means that the traders engaged therein have been labouring to no effect, and consequently their country and the Empire can derive no benefit from their efforts.

It will be of interest to consider a few concrete cases in order to make my meaning clearer. First of all I will consider an agriculturalist. In this as in practically all other businesses a certain amount of capital is required. In many cases in Burma this capital is borrowed but in order that the example may be as simple as possible I will presume that the cultivator has a sum of Rs. 2,000 with which he purchases the necessary implements, etc., with which to cultivate the ground he owns or has leased. These implements although they may last for some time will not of course last for ever and he will eventually have to purchase new ones. A man who has no idea of accounts or business may go on from year to year and spend on himself or his pleasures all the surplus cash he realises from his produce thinking that the difference between the cost of cultivating the land and the price of his produce must be his profit. As I said above the time will come when he has to renew his implements and if he has spent all his surplus receipts he is not in a position to do so. What then is the result of his labours for these years? He began with Rs. 2,000 and at the end has nothing so that he is worse off at the end of the time than at the beginning. Now the prudent man who has some idea of accounts will realise that provision has to be made for the renewal of his implements and will set aside or save something each year to meet the cost of such renewals. This man's labour is of some use to himself and his country. The accounts required in this case may be very simple but the principles of accountancy are present and they are an essential to success. It might be said that I am merely advocating thrift, and that

accountancy does not enter into the question at all, but my reply would be that a thrifty man in practically every case will be a man who takes an interest in accounts. His thriftiness will make him desirous of seeing his position year by year and he cannot do this without some form of accounts, so that he is compelled to acquire some knowledge of the subject. In the instance I have quoted above of the man who finds himself without funds with which to renew his implements the result will probably be that he borrows the money with which to make the necessary purchases and of course has to pay interest on the money he has borrowed. That being so he is not reaping the full benefit of his labours for the capitalist who lends the money shares in these profits and in a country such as this where interest charges are high, the borrower may easily be reduced to working for a wage on land which is his own. Moreover in the calculation of interest alone the trader may be overreached by the money lender who is usually an acute business man. I will give an example to show how exorbitant rates of interest may be charged without the borrower realising in the least that he is being hardly dealt with. I will suppose that a man borrows Rs. 29 and pays back Re. 1 per day for 30 days, a form of loan which is by no means uncommon. The average person will say that this is quite a moderate rate of interest to charge, but if the rate is calculated we shall find that it is about 80% per annum. It is instances like these which show that a knowledge of figures is essential in any business.

I will now deal with a business which necessitates the use of machinery such as a factory in which finished goods are produced from raw material. Everyone knows that machinery is not everlasting, and consequently that included in the cost of the finished articles must be a proportion of the value of the machinery utilised in producing such articles. There are many other charges in any business

which cannot be directly allocated to particular goods or processes but which have to be allowed for in calculating the cost of a finished article. Now it is clear that any business man who manufactures and sells goods must be in a position to say how much these goods have cost him for in these days of competition the man who can produce cheapest fixes the price of the goods sold. In former years when profits were very large if a trader lost 20 per cent. by carelessness he would probably still have a profit of 30—40 per cent. left so that the need for a knowledge of accounts was not so necessary, but to-day when the percentage of profit is say 5 per cent. if a man loses only 6 per cent. by lack of knowledge of accounts his position is deteriorating each year, and his labour will be in vain.

It will I think not be disputed that the commercial development of Great Britain is more advanced than that of this country so that it follows that this country will be benefited by the introduction of British Commercial methods and the benefit to Burma is of necessity a benefit to the Empire. There are many signs that there is a real desire to introduce up-to-date business methods into the country and the inhabitants of Burma are in a number of cases eager to take a part in the development of Burma, but I would point out that the method in which present day commerce is conducted has been so highly developed and it runs so smoothly as a general rule that the many problems which face a business man are not even suspected by the uninitiated.

Let me for a moment remind you of what I said was the primary object of all commercial enterprises, *viz.*, to make money and then consider how a trader is to ascertain if he has made a profit and if so how much. He must have some sort of accounts to enable him to find out what he wants to know. I will take the most simple form of trading conceivable, *viz.*, a man who buys and sells for

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cash and never keeps any stock of goods. He may know he has made a profit but in order to find out the amount, he must ascertain how much his cash in hand at the end of a year has increased and in the absence of other considerations such as money paid on his living expenses any increase will represent his profit. This man may keep no accounts during the year but he ascertains his financial position at the end of a period and by comparing it with that at the beginning of the period finds out his profit. I say that the principles of accountancy exist even in a business run on the above lines but such cases are few and far between and as the trader's dealings become more numerous and involved so also should his accounting methods be improved. I have often been told by a trader that he keeps no accounts because he is the sole proprietor of the business and so proper accounts are unnecessary, but such a man is not only a danger to himself but also to the community, for in the majority of businesses goods are bought and sold on credit as well as for cash. He is a danger to himself because in a business of any size it is impossible without accounts to ascertain his financial position and consequently he may continue to trade even after he is bankrupt, and he is a danger to the community because his ruin may mean heavy loss to his creditors who themselves may not be able to avoid bankruptcy in consequence thereof, and a financial crisis may easily be brought about by the failure of a few traders in the first instance. The effect of a financial crisis in a country is harmful not only to the country in which it occurs but also to the Empire to which that country belongs for if the country's credit is injured its commerce is bound to suffer and it naturally follows that the Empire's commerce receives a set back, but in considering this aspect of the question I would remind you that a country which is a member of the Empire will probably in its time of trouble receive help from the rest

of the Empire, so that the effects of a financial crisis will be more readily repaired than if the country stood alone and friendless. At the same time however help cannot be expected unless an earnest effort is made to improve those defects which led to the disaster. The man who trades without keeping proper accounts and alleges that there is no need for him to do so because his business is his own may be likened to a man who builds a house of faulty design and bad construction and defends his action by saying that he is going to live in it himself so that if it is unsafe it is his own concern. His house naturally falls down one fine day and buries him in the ruins which of course is bad enough, but its collapse may also kill any of his friends who are in the house at the time and any persons who happen to be passing by.

Many persons I know look upon an accountant as an unfortunate individual who spends his days in writing and adding up unending columns of figures. These people are either ignorant of the importance of accounts or have never troubled to consider how the results of the accountant's labour are attained. When looking at a fine building no sensible person would say either that it was easy to build it because it was only a lot of bricks, stones, and mortar put together, or that such edifices were not worth building because of the tedious work of putting so many bricks on the top of each other. I admit that the writing up of accounts is sometimes dull and that the mechanical work of entering up books and totalling long columns of figures is not exciting, but no one can expect to be able to run before they can walk, and what is often considered to be mere drudgery is a very necessary training for the higher and more interesting branches of accounts. Many young men who enter offices as clerks find that they are put to work in the accounts department, and are perhaps given one particular job to do which to them seems very uninteresting.

and in consequence they either do their work in a mechanical manner or else seek other employment in disgust. In the former case the quality of the work is often poor and consequently they do not earn promotion. Every book which is maintained has some useful purpose, and no clerk who is really anxious to get on should be content to write day after day in any particular book without attempting to ascertain the use to which his work is being put. A clerk who takes an intelligent interest in his work is worth very much more than one who merely writes down or adds up a given number of figures each day because he is paid a certain number of rupees each month for doing so.

I have shown you briefly how important it is that a trader should know how his business has fared during the year and what his financial position is but there are other forms of accounts which are quite as important. Let us consider for a moment a man who manufactures, we will say, boots. He naturally wants to sell as many as he can, but of course he must compete with other boot manufacturers and in order to do this he has to produce the best article at the cheapest possible price. For the purposes of his business he has to purchase leather, thread and all those things that are used in the manufacture of boots so that he does not sell the goods he buys in the same form as he receives them. He must therefore calculate how much each pair of boots which he manufactures costs him in order to enable him to fix the selling price. He cannot do this properly unless he has accounts and figures upon which to base his calculations, and if those accounts are incorrect his calculation of the cost price will also be wrong and if in consequence he fixes the selling price too low he may lose a very large sum of money before he discovers his error. Here again we see how a trader is dependent on his accounts. You will realise therefore that

in commerce the question of accounts arises at every point and I would impress upon you that in the accounts of a business every single transaction is or should be recorded so that the maintenance of adequate accounts is no small matter. An expert accountant needs just as good training as any other professional man. It has often been remarked that the legal profession is very popular in India, but it would be well if some of those who aspire to enter that profession thought for a moment what is one of the main sources of lawyers' fees, *viz.* commerce. If there was no commerce there would be but a comparatively small amount of work for the lawyer, so that a young man should not lightly refuse to earn his living in commercial pursuits because he considers that his position will be improved by entering some such profession. Many of the professions are largely or even entirely dependent upon commerce for their existence, so that it can hardly be said that the trader who employs the professional man is inferior to him merely because he is a trader. Unfortunately of late years there has been a tendency to think that trade or manual labour was in some kind of way derogatory. This spirit is most harmful to a country and is likely to injure its prosperity, and in this connection I would remind you of what was once said of the British Nation, *viz.*, that it was a nation of shopkeepers. The remark was of course meant to be disparaging, but what was really implied was that the British were traders, and I think that no one who looks back on the History of the British Empire can help admitting that the nation has not suffered through being traders, and that good honest trade has never yet done any one harm, nor does it follow that because a man is a buyer or seller of goods, he is inferior to any one who earns his living by his pen or his tongue. At the same time however it should be remembered that modern commerce is highly

developed, and that much hard work is necessary before a man can make a success of his business. I myself have come across many young men working as clerks in offices who have told me that before they became clerks they had been traders of some sort, usually paddy traders, but that being unable to carry on their business profitably they had become clerks. I am sure that in the majority of cases the businesses were started without any particular preliminary knowledge or training so that practically every one was almost sure to fail. Such a state of affairs is bad for a country for if its inhabitants do not seriously attempt to develop its commerce, they must not be astonished if outsiders come in and supplant them. I do not wish to discourage any one by pointing out the difficulties which a trader has to overcome nor should these difficulties deter any one, but they should rather induce him to make further efforts to succeed, for doing something easy is worthy of little praise, whereas success in the face of difficulties is really meritorious.

Fourth Lecture.

AT the conclusion of my last lecture I explained that those who earn their living by engaging in commerce should not for that reason be regarded as holding an inferior position to those who earn their living by the exercise of a profession or in Government service. I will go even further than this and say that it is a calamity for any country to regard trade as being in any way derogatory. In building up either an individual business or the commerce of a country as a whole it is useless to think only of the present. A successful business like a well-constructed house must stand on a firm foundation and this foundation, so far as a business is concerned, is the confidence of the general public, and, so far as the commerce of a country is concerned, the confidence of the rest of the world. Such confidence can only be obtained by honest and straightforward dealings. It is therefore essential that the commerce of a country should be in the hands of the best possible class of persons. If for example any of you were to purchase goods from a shop and found that they were either inferior in quality to what they were represented to be or that the full quantity had not been supplied, you would naturally feel annoyed and as a result would either cease dealing with that particular shop or would take precautions to see that you were not be cheated in future. The commercial dealings of a country, in so far as they relate to its exports, more nearly approach to the dealings of a person in the districts with a shop in Rangoon, for in both cases the buyer and the seller do not come into personal contact with each other, so that any differences or disputes which may arise are very much more troublesome to adjust. If the buyer in the districts

finds that the goods supplied by a particular shop are not what they are represented to be, he will run no further risk of suffering loss or inconvenience but will simply refuse to purchase anything more from the shop in question. Similarly if a purchaser in another country discovers that the goods he buys from, we will say, Burma are variable in quality or in any way unsatisfactory he will cease to purchase those articles from this country, and his example will be followed by others with the result that the demand for this country's goods will decrease. If however the quality of the goods supplied is uniform and the business is carried on in other ways in a satisfactory manner, the result will be a steady demand and the produce of the country will have a good name in the markets of the world. It often happens that a firm makes a contract to supply goods at a certain price the delivery of which has to be spread over a period. Before all the goods can be delivered some unforeseen circumstances arise which may not only deprive the seller of all his profits, if he keeps to his bargain, but may even cause him to suffer loss. In cases such as these there is a great temptation to minimise such loss by supplying inferior goods or by some other unjustifiable means. It is practices such as these which shake confidence of buyers. Unfortunately many people seem to think that the code of morals which governs their home life is different to that which governs their commercial life. This is not the case and commercial immorality is in no way different from any other immorality. Even if it is regarded from the lowest standpoint, namely, from the point of view as to whether it pays or not, I have no hesitation in saying that in the end straightforward dealing will, in the vast majority of cases, be found to be more profitable. It will not be disputed, I think, that British goods hold a high position in the estimation of the world at large, and one of the chief reasons for this is that the

quality of these goods can be relied upon, and bargains once made are kept in spite of adverse conditions. It will be seen therefore that those who are engaged in commerce should have high ideals if such commerce is to be a benefit to their country, and I would ask you to consider whether it is likely that such high ideals will be found among the lower or the upper classes in any particular country. In many cases a man will suffer almost anything in order to preserve untarnished the name and reputation of his family, and there is no reason why his name and reputation in business should be put on any lower level than his reputation as a private individual.

In the former lecture I dealt with the necessity of united effort in order to ensure that adequate supplies of various articles should be available for export. There is however another aspect of this question with which I did not deal explicitly, namely, the necessity of uniformity in quality. A country such as Burma exports to a large extent raw material or sends it to Rangoon for treatment and from this raw material the finished products have to be manufactured. The process of manufacture involves, as a rule, the use of a considerable amount of machinery. Unless the supply of raw material is uniform in quality the same machinery will not be able to handle it satisfactorily. I will take for example rice. There are a large number of different kinds of rice and the shape, size and quality of the various kinds are in many cases quite different. Every effort, therefore, should be made by cultivators to find out which is the best kind of paddy to grow in particular districts in order to obtain the best possible results from the cultivation of the crop. If this is done the result will be that a uniform quality of paddy will be produced in each district so that its treatment in the mills will be facilitated, and under normal circumstances a more satisfactory price will be realised as a whole than if individual cultivators grew

whatever sort of paddy they fancied. Before leaving this subject I might mention another industry which has recently come into great prominence in consequence of the war, namely, sugar. During the war the supply of sugar was very much curtailed owing to the fact that large quantities of it have to be imported into this country. This industry is one which should be capable of large development in Burma, for there are considerable tracts of land which are suitable for the cultivation of sugar cane. It seems extraordinary therefore that each year large sums should be paid for the supply of sugar which could quite well be grown in this country and I would also add that in this case much of the money paid for imported sugar does not even remain within the Empire, for large quantities of Java sugar are imported each year. It is true that there are many acres of ground under sugar cultivation at the present time but there is no properly organised system of cultivation, which would enable a sugar factory to be established in any particular place with the certainty that it would have adequate supplies of sugar cane with which to deal. There is no doubt that, given adequate supplies of sugar cane, factories would be established and thus enable this country to produce an appreciable amount, at any rate, of the sugar it requires. This case is a very striking instance of the uselessness of individual action in the case of small producers. In Java, I believe, as far as sugar is concerned, the importance of that industry is so much appreciated that the Government actually regulates the cultivation of the sugar cane and forbids two successive crops of cane being raised from the same ground, for the land has either to be given an entire rest or an alternative crop has to be grown thereon. I quote this example to show how commercial matters are regulated in other countries.

From the above remarks you will see that there are

many things to be considered in connection with the products of a country and that much research and scientific education is necessary in order to enable a country to utilise to the fullest extent its natural advantages. It is hardly to be expected that the cultivators themselves can acquire all the necessary technical and scientific knowledge, and it is for this reason that those who have the welfare of their country and the Empire truly at heart should realise that the better educated amongst them are not lowering their position in the community by commercial pursuits, but that in engaging in those pursuits and utilising their money and education in commercial enterprises they are rendering valuable aid to their own country and no right minded person could look down upon another who was engaged in such an occupation.

I have up to the present in these lectures dealt mainly with the provision of funds and the general system of conducting commerce and the importance of commerce both to a country and an Empire. I propose now to deal with one aspect of commerce which has been very prominently before the public in all parts of the world, *viz.*, the prices at which goods are bought and sold. It has often been said that prices will depend upon supply and demand and that these two things will adjust themselves: This is a correct statement in the ordinary way, but there are a number of exceptions and these exceptions are so important that they merit some comment. I would state that in discussing this aspect of commerce I am not dealing with goods that come under the head of luxuries, *i.e.*, articles that are unnecessary for the well being of the average man or woman, but my remarks are meant to apply to the actual necessities of life and those things of which the average person would feel the deprivation if he could not obtain them.

I have often heard people say that the prices of certain

goods in the shops of a town such as Rangoon are very high, and that they can be obtained very much more cheaply in the districts. In many cases although such a statement is perfectly correct the extra prices can be justified. If goods are bought direct from the manufacturers the price will be cheaper than if they are purchased in a shop for before they can be displayed on the counters or in the shop windows they have to be bought from the manufacturers and expenses incurred in bringing them to the shop where they are sold. If any of you bought goods at an auction and carried them to your own houses yourselves there would be no coolie hire to pay and consequently the cost price of these goods to you would be less than if you paid coolies to carry them for you. Similarly if you go and buy goods in the places in which they are produced they should be cheaper than if you purchased them in a place hundreds of miles away. Moreover a shop has to run the risk of goods being damaged and not realising their cost price, and many other similar contingencies which have to be allowed for in fixing the selling prices. It will thus be seen that the goods sold in a shop which has to procure them from the different parts of the country or even from other countries of the world must of necessity be more expensive than if they were purchased either in the place where they were produced or direct from the producer. The final price to the consumer depends in ordinary circumstances very largely upon the number of hands through which the goods have to pass, for each person who handles the articles naturally expects to make some profit for himself. In the above remarks I have explained how the price paid by the consumer is larger as a rule than the price received by the producer and the explanation applies to what happens in normal circumstances. There are however a number of factors which govern the price of goods to the consumer and these call for special

consideration. During the war the supplies of the necessities of life were very much curtailed with the result that prices increased in a number of instances. Advantage was taken by retailers of the scarcity of supplies to increase the price of such goods as they had in stock out of all proportion to their real value merely because the owners of the goods knew that the consumer had to purchase the goods in order to live. This practice became so common that it introduced a new word into the English vocabulary, namely, "profiteer". This method of conducting trade cannot in my opinion be defended by any possible excuse. A man who is prepared to extort from others a vastly enhanced price for the necessities of life in order to enrich himself and because he happens to possess large quantities of those particular goods must of necessity regard his business as being merely carried on for the purpose of enriching himself and for no other reason whatsoever for if the ordinary necessities of life increase in price so that individuals are unable to purchase a sufficiency it follows that the community must suffer and if the community suffers so also does the Empire. I have often heard a large increase in price justified on the grounds that if the particular person in question sold his goods at a reasonable profit others would buy them up, and re-sell them at a very largely increased rate, so that it did not matter if they themselves increased their prices. This class of argument is quite fallacious for I hardly think that any body would attempt to justify a theft on the grounds that if he had not stolen a particular article some one else would have done so. Again let us consider the question in another light. You will have doubtless often heard people commenting on the fact that it is unsporting to kick a man when he is down, but this unjustifiable raising of prices is a similar kind of action for in the first place the unfortunate consumer is in the position of having his supplies of the necessities of

life curtailed, and in addition to this the person who holds stocks of these necessaries compels him to pay prices out of all proportion either to their real value or their cost to himself. It will be interesting for a moment to consider what is the result of a large rise in prices. Those of the community who are salary or wage earners find that their income is insufficient to provide them with the necessaries of life and consequently they demand higher wages. They are justified in doing this for suppose that before the rise in prices a man could live upon Rs. 100 a month it naturally follows that, if prices are doubled, his expenditure in a month, if he lives upon the same scale, will be Rs. 200. There are two courses open to him : (1) to reduce his cost of living, so that he can live within his income, or (2) obtain an increased salary. The first alternative is, in many cases, impossible, and if the high prices are the result of profiteering it is clearly unjust to expect the community to reduce their scale of living and even suffer privation in order that a few people may enrich themselves. If, on the other hand, his salary is increased, the cost of the work which he does for his employer is also increased, and if his employer is a manufacturer the cost price of the goods manufactured becomes larger. If the cost price is increased, the selling price must be correspondingly increased, so that an increase in wages means an increase in the cost of production and prices will rise still further, the result of which is that the purchasing value of a particular sum of money is considerably less and the wage earner is again faced with the problem of how to live within his income. Many people think that they must be better off if they receive higher wages, but this is not so, for as I have shown you if a man is in receipt of Rs. 100 a month upon which he can live and his wages are doubled, because prices as a whole have doubled, it follows that it will cost him Rs. 200 a month to live and he is no better off than

he was before. From the foregoing remarks it may seem to you that this problem is impossible of solution and that no remedy can be found but this is not so. A country should always strive to create wealth, that is to say, it should be the endeavour of every person to produce as much as possible, and it should be the aim of the employers of labour to pay a fair wage for their employers' work, but there is an equal responsibility on the side of the employees to see that they give their employers good value for their money. It is only by increasing, or at any rate keeping up production, that the prosperity of a country can be insured. I am aware that in the past many employers have aimed at paying salaries or wages which were only sufficient to enable the workers to exist under the most unsatisfactory conditions, but it has been recognised for some time now that it cannot be expected that workmen will do their best, if they are not paid wages sufficient to enable them to live comfortably and respectably. During the war extraordinarily high wages were paid because it was recognised that the production of certain articles at a certain rate was of vital necessity to the nation and that it was impossible to risk a failure of supplies by refusing demands for what were in many cases unjustified increases in wages. The Government therefore was faced with having to choose between the paying of largely increased wages, in order to ensure supplies of the necessary material with which to prosecute the war, or to refuse to grant the increases asked for and run the risk of not having the necessary supplies. In such a case as this there could be but one answer, namely, the granting of large increases in order to ensure that the necessary work was done. I will now ask you in the light of these remarks to consider what I said in the earlier portion of this lecture about the charging of unwarranted prices for the necessaries of life, *i.e.*, profiteering. A man who takes advantage of the

Empire's need in order to secure for himself wages out of all proportion to the value of the work done is no less a profiteer than a man who refuses to sell the necessaries of life unless he receives exorbitant prices. I have shown you how increased wages cannot by themselves increase the wealth of a wage earner, but that his prosperity depends to a large extent upon himself and the quality of the work he performs provided his wages are adequate. It will be interesting for a moment to consider what will be the inevitable result of a continued increase in wages and the consequent increased cost of production. I have shown you that successful competition in the markets of the world depends upon the ability of the competitors to produce satisfactory articles at the cheapest possible rate. If a particular country, owing to the very large wages paid to its inhabitants, is unable to produce goods so efficiently and so cheaply as other countries there will be no demand for her products. The result of this is that the trade of the country decreases and there is less work for the workers to do. The consequence of this is that instead of the workers having benefited themselves by successful demands for increased wages they have only succeeded in depriving themselves of the opportunity to work and to be paid wages. The only way in which the financial position of the Empire can be improved is by *the creation of wealth*, and the increased production of goods at such prices that they can compete in the markets of the world. There is also another manner in which each one of you can assist in this work for I have already explained to you how a country in order to become prosperous must export more than it imports. Those of you who are not actively engaged in the actual production of goods may think that you can do nothing to help in the work of increasing the balance of exports over imports but this is not so. This balance may be increased in one of two ways ; either by increasing the exports or by

decreasing the imports. There are many articles imported into a country which are used by many of the inhabitants but which are by no means necessary to their well-being, *i.e.*, luxuries. If there is a decreased demand for these goods it follows that they will be imported in decreased quantities, and in this way the balance of exports over imports may be increased.

It will I think not be out of place to consider for a moment the effect of the present war upon the economic conditions of the British Empire. The daily cost of the war has often been stated in the newspapers, as also has been the amount of the National Debt of the United Kingdom, but I fear that the mere perusal of figures will not assist you to realise the financial burden imposed upon the Empire. It may help you however if I tell you that the daily cost of the war to the United Kingdom was about the same as the Revenue of the Province of Burma for a whole year. In view of this statement I would ask you to remember that actual warfare was going on for over four years and you may then be able to realise what the war has cost in actual money. This huge cost has had to be met to a large extent out of the Capital of the Empire. This phrase needs some explanation. The Capital of the Empire is the wealth accumulated and saved as the result of years of hard work and corresponds to the savings of a private individual. I would ask you however to consider the nature of the expenditure and in order to enable you to appreciate the point which I am trying to convey to you I will give you an example. Supposing a man owned a rice mill in the districts, and one night he was attacked by dacoits who destroyed part of his mill but were driven off eventually; the mill owner has, it is true, saved his life and part of his mill but he will be forced to spend time and money in replacing what had been destroyed. The expenditure thus incurred by him will only replace what

he had before, so that he is spending time and money on restoring what he had lost instead of adding to what he had before. Similarly the British Empire has not been spending vast sums of money during the past years with the idea of creating wealth for herself, but only in the endeavour to prevent her property from being forcibly taken from her. It was essential that this vast expenditure of money and lives should be made, but with the end of the war the necessity for work does not cease. The work which has to be done is fortunately of a different sort for it is creative instead of destructive. Those of you who have suffered from severe illness or have had friends or relations who have been very ill must know that after the patient has got over the actual illness a period of convalescence follows during which the patient must be watched and cared for with the same amount of solicitude as when his illness was at its height for unless this is done all the work of saving the patient's life may be undone, and if he is not looked after properly he may have a relapse which proves fatal. The cases are parallel for the convalescence consists in the creation of fresh strength for the patient and the need for creative work is now of vital importance to the Empire. The above example of the mill owner may be used to illustrate my remarks about high wages for we will suppose that the mill in question was used for milling the paddy grown in the district and that there was no other mill available. The owner of the mill would have to hire labourers in order to restore the damage and the fact would of course be known to all his neighbours. The neighbours might be perfectly willing to help in restoring the mill until some crafty person pointed out to them that the mill owner could not possibly restore the mill himself and that consequently they could take advantage of his ill-fortune to insist on being paid highly for the work. The result might very easily be that the mill owner could not pay the

prices asked and consequently the work of restoration could not be properly done with the result that the paddy grown in the district either could not be milled at all or only a part of it could be milled. The neighbours will have benefited themselves temporarily by doing a small amount of work for high wages, but they will find that their labour in growing paddy is wasted for lack of a mill which can convert it into rice. This country has been spared from being the scene of actual warfare, but it can share in the work of restoring the prosperity of the Empire and one of the lessons of the war is that organised effort is essential in everything. It was the soldiers of the Empire who prevented at the cost of or at the risk of their lives the worst danger that has ever threatened it, but they could not prevent the enormous economic damage which has been done. That damage is not irreparable but it will need years of hard work to remedy it, and it is work that no one need be ashamed of although there may not be so much apparent honour and glory in it. You may think that in these lectures I have advocated the conduct of commerce entirely for the benefit of the Empire and not for the individual and I should not like you to think that I have advocated ideals which are unattainable. As I said before the primary object of a trader is to make money and I still maintain that this is so but what I have endeavoured to impress upon you is that not only is the making of money important but also the method of making such money, for unless profits are made by honest and fair dealings no lasting good will result for the trader or the Empire. During the last hundred years there have unfortunately been many instances of wealthy firms or companies using their power to crush their smaller rivals or to compel consumers to pay extortionate prices for the necessities of life. It is practices such as these which have caused so many people to regard all those engaged

he had before, so that he is spending time and money on restoring what he had lost instead of adding to what he had before. Similarly the British Empire has not been spending vast sums of money during the past years with the idea of creating wealth for herself, but only in the endeavour to prevent her property from being forcibly taken from her. It was essential that this vast expenditure of money and lives should be made, but with the end of the war the necessity for work does not cease. The work which has to be done is fortunately of a different sort for it is creative instead of destructive. Those of you who have suffered from severe illness or have had friends or relations who have been very ill must know that after the patient has got over the actual illness a period of convalescence follows during which the patient must be watched and cared for with the same amount of solicitude as when his illness was at its height for unless this is done all the work of saving the patient's life may be undone, and if he is not looked after properly he may have a relapse which proves fatal. The cases are parallel for the convalescence consists in the creation of fresh strength for the patient and the need for creative work is now of vital importance to the Empire. The above example of the mill owner may be used to illustrate my remarks about high wages for we will suppose that the mill in question was used for milling the paddy grown in the district and that there was no other mill available. The owner of the mill would have to hire labourers in order to restore the damage and the fact would of course be known to all his neighbours. The neighbours might be perfectly willing to help in restoring the mill until some crafty person pointed out to them that the mill owner could not possibly restore the mill himself and that consequently they could take advantage of his ill-fortune to insist on being paid highly for the work. The result might very easily be that the mill owner could not pay the

prices asked and consequently the work of restoration could not be properly done with the result that the paddy grown in the district either could not be milled at all or only a part of it could be milled. The neighbours will have benefited themselves temporarily by doing a small amount of work for high wages, but they will find that their labour in growing paddy is wasted for lack of a mill which can convert it into rice. This country has been spared from being the scene of actual warfare, but it can share in the work of restoring the prosperity of the Empire and one of the lessons of the war is that organised effort is essential in everything. It was the soldiers of the Empire who prevented at the cost of or at the risk of their lives the worst danger that has ever threatened it, but they could not prevent the enormous economic damage which has been done. That damage is not irreparable but it will need years of hard work to remedy it, and it is work that no one need be ashamed of although there may not be so much apparent honour and glory in it. You may think that in these lectures I have advocated the conduct of commerce entirely for the benefit of the Empire and not for the individual and I should not like you to think that I have advocated ideals which are unattainable. As I said before the primary object of a trader is to make money and I still maintain that this is so but what I have endeavoured to impress upon you is that not only is the making of money important but also the method of making such money, for unless profits are made by honest and fair dealings no lasting good will result for the trader or the Empire. During the last hundred years there have unfortunately been many instances of wealthy firms or companies using their power to crush their smaller rivals or to compel consumers to pay extortionate prices for the necessities of life. It is practices such as these which have caused so many people to regard all those engaged

in commerce or trade as being merely desirous of making money in any way possible without regard for others, but, as I have already shown you, Labour with all its alleged grievances against Capital has shown that it is capable of profiteering in just as bad a manner as Capital. The future of the Empire depends to a large extent upon its commerce and it is the duty of every one so far as is possible to help the prosperity of his country and the Empire. The difficulties which we now have to face can only be overcome by the whole hearted co-operation of each individual member of the Empire, and if the energies of the Empire are devoted to arguing about and criticising the actions of others whilst other countries are devoting themselves to work, we shall find it difficult or even impossible to maintain that supremacy of which each one of us is so justly proud.

PREFACE

THIS is a report on the inquiry regarding the manufacture of Gold Thread and allied embroidery goods in Europe that I undertook in the company of Mr. J. K. Chapadia of the Gauri Gold and Silver Works Co., Surat, and represents our combined efforts and views.

An attempt is made to describe the various European processes of manufacture studied by us and to show how far and in what way they are applicable to the Indian needs. An account is also given to show what attempts have been made to improve the Indian industry and what remains to be done. Although a large variety of machines were studied, only those, whose owners have authorised it, have been illustrated.

Indian methods of manufacture have not been described at length, as some very valuable information regarding them has been supplied in the various Government Monographs on Wire and Tinsel Industry written by Messrs. Burdon, Nissim, Mallinath Ray, Headaway, Gwyne, De and Mehta and also in Messrs. Chadwick and Black's "Indo French Trade" and Sir George Watt's "Indian Art at Delhi".

A glossary of technical terms in use in the trade with their English, French and German equivalents and a list of dealers in the machinery required for this manufacture are added as appendices.

In the course of the present inquiry and my endeavour to tackle the problems of the Gold Thread Industry, I have received very valuable help from various people to whom in general I offer my best thanks. I must, however, particularly thank the Honourable Dr. Paranjpye, the Minister of Education and Industries, Bombay, for the encouragement and the support I have received from him and without which the inquiry which is the subject of this report would not have been possible. I have also to thank Messrs. C. M. Gandhi and G. B. Trivedi, Members of the Legislative Council, Bombay, for their kind assistance in bringing the needs of the industry to the notice of Government. I am also much obliged to Mr. R. D. Bell, Director of Industries, Bombay, for his assistance and sympathy resulting from the great interest he has continued to take in the improvement of the Gold Thread industry, ever since the matter came to his notice, as also to his assistants, Messrs. Thiselton Dyer and Bharucha from whom I have received very valuable help.

In England my thanks are due to Mr. F. Noyce, the Officiating Indian Trade Commissioner and his assistant Mr. B. D. Asli, for the ready assistance of all sorts that they kindly gave me whenever it was sought. I am also indebted to Mr. Ryan, the Director General of Indian Stores, and Mr. R. M. Kohan, British Consul-General at Leipzig, for their kind help.

SURAT,

20th April, 1923.

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B. J. G. SHASTRI.

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 German.
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CHAPTER I INTRODUCTORY

History.

THE manufacture of gold wire and thread seems to be one of the earliest arts of our race, being connected with the human fondness for pomp and show that have been the characteristics of regal and church paraphernalia from the earliest times. History amply supports this view, as there are a number of references to gold thread in some of the most ancient books in Sanskrit literature, and also some ancient relics of Egyptian cloth exhibited in the Textile Museum at Lyon contain it. It is very likely that originally only pure gold wire was used as it would not tarnish. The art of producing non-tarnishing cheaper wire and thread from gold plated silver seems to be a later invention, testifying to the development of a taste for it in the upper strata of society. The manufacture of imitation wire and thread from plated copper is of very recent origin due to the ever increasing demand of the poorer classes for a cheaper article of show quite in accordance with the democratic spirit of our age.

It is very difficult to point out the exact birth-place of the industry, as very ancient references to it can be traced in Egypt, Babylon, China and India. Coming to modern times, however, it seems to have been well established in India under the Mahomedan influence. It was, and even now is, largely practised and patronised by the Mahomedans all over the country. Indian gold thread and cloth seem to have travelled to the West, and reached, through the Moors, Italy, Germany and France, and very likely the industry itself followed the same course, taking permanent root in Lyon in the 15th century under the royal patronage. Louis XVI specially encouraged it along with the sister industry of silk. In the hands of the cunning workers of Lyon, it went on improving from day to day and continued to utilise the recent inventions of art and science. It adopted power machinery and the process of galvanising in the earlier part of the 19th century and has been ever since developing labour-saving machines. It gradually travelled to Germany and England where also it is undergoing improvement.

The influence of foreign competition

The inevitable happened. Not being satisfied with their own market the Western manufacturers, specially French and German, turned their attention to India, where the industry had not, broadly speaking, much developed since the days of the Moguls. The foreign article gradually became popular and ousted the native stuff in a number of places. The Indian manufacture of gold thread would certainly have collapsed altogether, had the European war not intervened and handicapped the European competition for the time being.

Attempts at improvement

Foreign competition, however, led to attempts at the improvement of the local industry. Ruby and sapphire dies for drawing wire and steel rolls for flattening it were some of the earliest mechanical improvements that found favour. On the other hand, some laboratory experiments were made here and there in gilding silver threads without any commercial results. A gentleman from Madras imported some machinery from France and attempted to compete with the foreign manufacture, but failed. Shastri Rajaram Lele's attempt at Benares is said to be successful, though it is not known whether it includes latest methods all throughout.

The problem appealed to the author in a different light altogether. It appeared to him that to compete successfully with the foreign article, the Indian processes and machinery will have to be greatly modified or replaced by the European ones and that an amount of technical research will have to be undertaken. So about 13 years back he got together a few co-workers and started an experimental factory at Surat under the name of the Gauri Gold and Silver Works Company. Gilding of metallic wires and threads was made a commercial success and was widely adopted by other manufacturers at Surat, Benares, and other places with the result that it has, along with the handicap placed by the Great War on the European manufacturers and the 30 per cent. import duty on the foreign articles, substantially succeeded in meeting the foreign competition to some extent.

The following tables and the accompanying graphs (given at the end of the chapter) will show the extent and tendency of foreign imports for some time past. The graphs for the values of gold and silver thread and lametta are rather irregular in their course, as the values depend not only on quantities, but also on the cost of manufacture, which itself is dependent on a number of highly fluctuating conditions, such as the price of silver, the wages of labour, freight, import duties, etc. But the graph for the quantities of lametta imported show a decided post-war tendency to the deterioration of imports, some causes of which are the circumstances noted above, as the demand does not seem to have appreciably diminished. The figures for the quantities of gold and silver thread are not available, but looking to the figures of their values and their prices, it is not very difficult to conclude that their graph, had it been plotted, would have followed that for lametta. As regards the use of gold and silver thread and other embroidery goods, it is a pity no statistics are available, but the observation of those acquainted with the trade says that the consumption has not shown signs of deterioration, so the decrease in post-war imports seems to lead to the conclusion that the indigenous article is replacing the foreign one, even though gradually. This process must be stimulated by progress on right lines, if it is to be permanent and complete in its operation.

Investigations in Europe

The question of the improvement of machinery was, however, not an easy one. It was found that some European machinery will be necessary.

but the difficulty was as regards its selection and working. Some machines were actually imported but could not be worked satisfactorily. To overcome this difficulty it was necessary that the European machinery should be studied systematically and then be either imported or adapted to local needs. This was a costly programme much beyond the means of a private experimental factory. So the matter was brought to the notice of the Department of Industries, which after three years' thorough investigation came to the conclusion that the best plan to help the solution of the problem was to award two special travelling scholarships to the author and his colleague, Mr. J. K. Chapadia to enable them to carry on the necessary investigations in Europe. Hence their voyage to Europe and this report.

GOLD AND SILVER THREAD (FOREIGN) IMPORTS.

Year.	Value.*	Year.	Value.*
	Rs.		Rs.
1905-06	31.63	1914-15	28.98
1906-07	33.26	1915-16	47.97
1907-08	44.86	1916-17	45.81
1908-09	33.35	1917-18	28.67
1909-10	36.15	1918-19	31.86
1910-11	45.74	1919-20	16.96
1911-12	44.67	1920-21	72.54
1912-13	45.49	1921-22	22.76
1913-14	45.42		

(Figures prior to 1905 are not separately enumerated in Customs records.)

LAMETTA (FOREIGN) IMPORTS.

Year.	Quantity.*	Value.*	Year.	Quantity.*	Value.*
	lbs.	Rs.		lbs.	Rs.
1889-90	246	4.69	1907-08	317	5.37
1890-91	320	5.75	1908-09	454	7.22
1891-92	303	5.58	1909-10	390	6.14
1892-93	322	5.79	1910-11	506	8.26
1893-94	385	7.03	1911-12	568†	9.03
1894-95	319	5.99	1912-13	559	9.00
1895-96	363	6.30	1913-14	474	8.29
1896-97	265	4.32	1914-15	205	3.45
1897-98	326	4.49	1915-16	262	4.72
1898-99	386	5.26	1916-17	244	6.26
1899-1900	407	6.18	1917-18	99	4.47
1900-01	318	5.23	1918-19	217	10.79
1901-02	334	5.45	1919-20	81	2.97
1902-03	383	6.02	1920-21	246	11.82
1903-04	366	5.53	1921-22	201	7.26
1904-05	425	6.02			
1905-06	277	4.06			
1906-07	282	4.35			

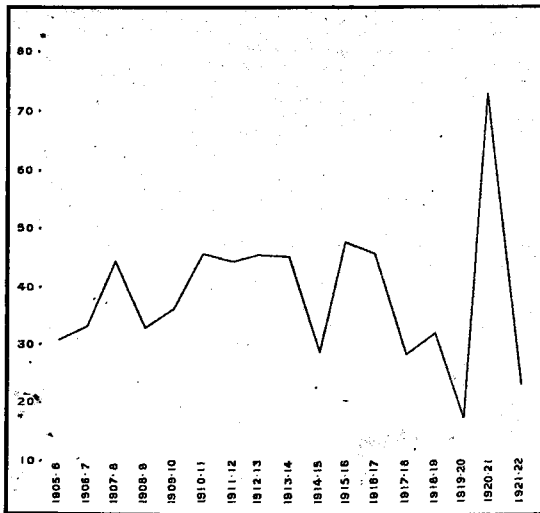
† Figures prior to April 1912 relate to copper lametta.

* The figures are in thousands.

GRAPH I.
Gold and Silver Thread (Foreign) Imports
 1905-1922.

Horizontal Axis .. Years.
 Vertical Axis .. Values of imports in tens of thousands of rupees.

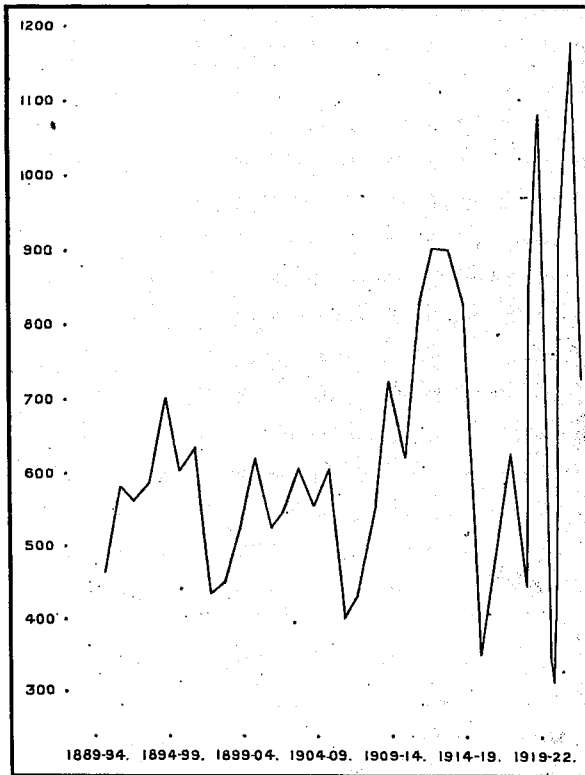
1. The average imports are about Rs. 40,00,000.
2. The maximum for 1920-21 is due to larger imports in view of a brisk marriage season and their higher cost.
3. The minima for 1906-7 and 1919-20 correspond with years of poorer marriage season in some parts of India. The minimum for 1914-15 is evidently due to interrupted imports on the declaration of war.



GRAPH II.
Lametta (Foreign) Imports
 1889-1922.

Vertical Axis .. Values of Imports in thousand of rupees.
 Horizontal Axis .. Years.

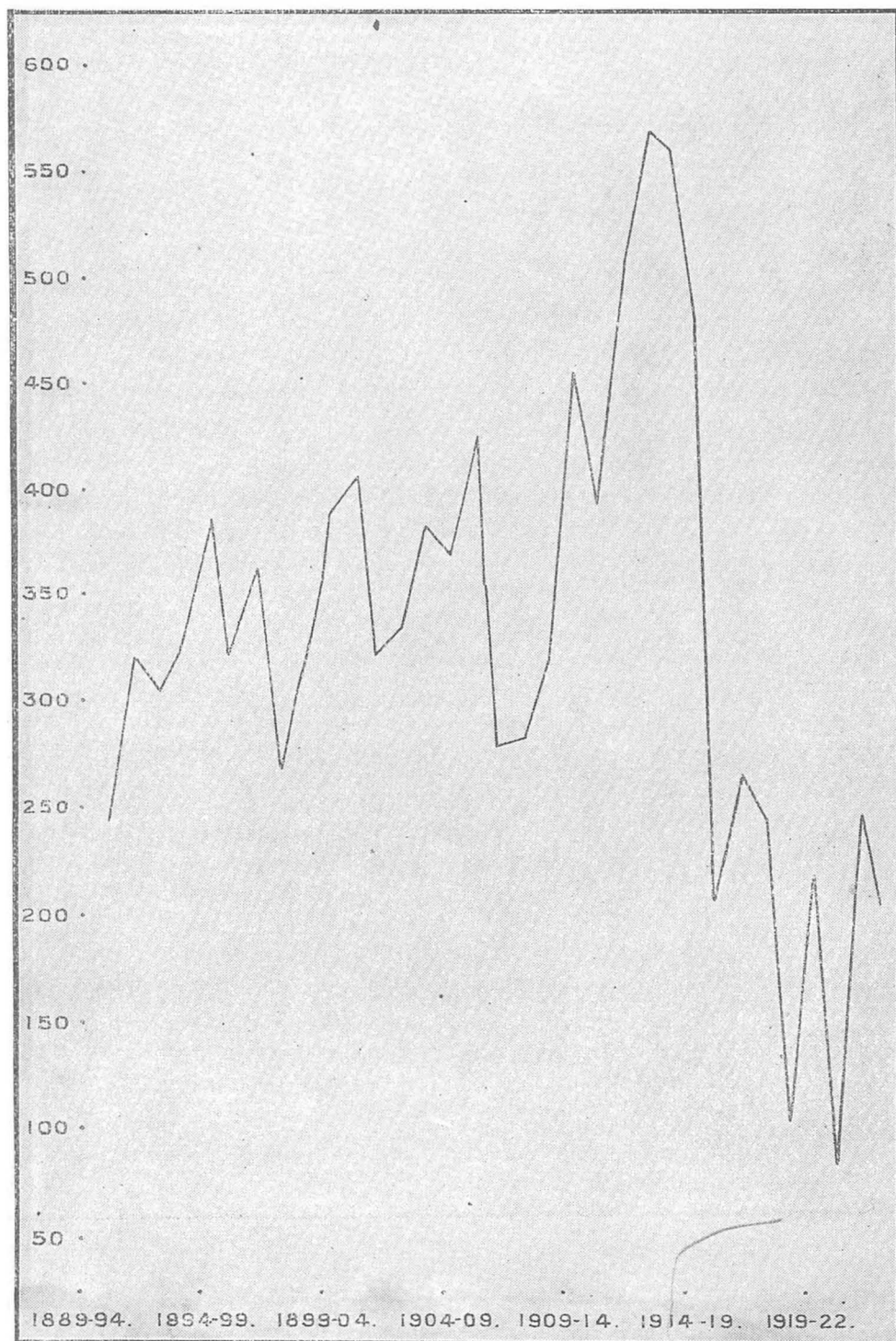
1. The average imports are about Rs. 6,00,000.
2. The maximum for 1920-21 is due to the higher cost of imports.
3. The minima for 1905-6 and 1919-20 correspond with years of poorer marriage season, while those for 1896-7 and 1914-15 are due to interrupted imports owing to plague and declaration of war respectively.



GRAPH III. Lametta (Foreign) Imports. 1889-1922.

Vertical Axis .. Quantities of imports in thousand lbs.
 Horizontal Axis .. Years.

1. The average imports are about 350,000 lbs.
2. The maxima for 1910-11 to 1913-14 correspond with the years of prosperous Indian trade.
3. The pre-war minima for 1896-7 and 1905-6 correspond with the years of plague and poorer marriage season respectively.
4. There is a decided post-war tendency to reduction in imports.



CHAPTER II

THE SCOPE OF THE REPORT

This report will deal with metallic wires and threads used in embroidery and their products—the various embroidery goods, laces, embroideries, metal cloths, etc. There is no one word for these manufactures in European languages. The words “Gold Thread” alone will not cover the whole field, though they signify a principal item.

Distribution of the Industry in Europe

England is not much interested in this industry, there being only 7 or 8 small factories, making gold thread or laces—four in London and the rest in Preston and its surroundings. Switzerland does not manufacture the goods, but offers some good machinery to make them. Warsaw once used to be a centre of very fine imitation gold thread, the manufacture of which suffered a fatal shock during the War from which it has not as yet recovered.

France and Germany have developed this industry to a very great extent. In France the ancient industrial town of Lyon is the chief centre, while some good hand made laces are manufactured in Calais and the surrounding districts. The industry is not so concentrated in Germany, its various branches finding their full development at convenient centres. Nurnberg and other towns in Bavaria are chiefly concerned with the manufacture of wires and threads, Plauen, Eibenstock and their neighbourhood manufacture stitched embroideries like the Swiss ones, the mountain towns of Annaberg, Buchholz, etc., have specialised in knitted and hand made embroideries, while Barmen and Crefield districts in the West manufacture woven laces and cloths respectively.

All the centres mentioned above, with some more manufacturing machinery, were visited and investigations were held as mentioned below and almost on the same lines as detailed in the case of Plauen.

France, Germany, England, and Switzerland are, as stated above, the principal countries where profitable enquiries could be made. But nowhere are institutions where all the aspects of the industry can be studied at one place. In fact there are various centres in each country where the manufacture is carried on at different stages and so to have a comprehensive view of the whole industry, these various stages had to be studied at different places widely separated. Again it very often happened that all the information that was necessary was not available at once, but could be gathered only after some further experiment or modifications. In such cases these places had to be revisited.

The investigations began with preliminary inquiries in France and England, which had to be again visited to bring the work to completion. The same was the case with Germany and Switzerland.

Investigations were carried out at more than 20 centres on lines similar to those given below in the case of Plauen in Germany, which is a great centre of embroidery work.

Plauen in Saxony (Germany)

1. Collection of samples, prices, etc., from local merchants, shops, commission agents and others to have a comprehensive view of the industry, to have materials for further investigations and to be used eventually in India as a guide to Indian workers as the latest patterns, styles, etc.
2. Study of embroidery machines, manufacturing articles as per samples collected in 1, at machinery makers'.

A thorough inspection of machines and their working and making actual trials with them. Proposals for necessary modifications to suit the Indian conditions of labour, market, etc.

3. Study of machines and processes at work in factories and the neighbouring villages and mountain homes (the cottage industry aspect).
4. Study of the work at the Technical Institution where instruction is given, new patterns evolved and apprentices trained for this line.
5. Collection of literature, pictures, snapshots, statistics, etc.
- ✓ 6. Discussion of the commercial and industrial aspects with the local guild of traders.
7. Discussion as regards the conditions of life and work of workmen with the local Labour Union.
8. A revisit to inspect the results of proposed modifications and suggested experiments.

*Other Centres of Study***GERMANY**

1. Berlin and neighbourhood, Miscellaneous and general investigations.
2. Barmen—Elberfeld and neighbourhood, Westphalia—Ribbons, laces, etc.
3. Frankfurt-on-Main and neighbourhood, Rhineland—Wire drawing and flattening machines.
4. Chemnitz and the mountain districts of Saxony—Knitted embroideries and fancy goods.
5. Nurnberg and other Bavarian districts—Lyonic wires and threads.

ENGLAND

6. London—Miscellaneous and general investigations.
7. Birmingham—Wire drawing, electroplating, metal colouring, etc.
8. Coventry—Embroideries.
- ✓ 9. Preston—Wire drawing and gold thread manufacture.
10. Keighley—Gold cloth and laces—weaving looms for, and wire drawing machinery.
11. Sheffield—Silver wire drawing, plating, silver refining, etc.
12. Bedford—Wire drawing and plating.
13. Gravesend—Wire drawing.

FRANCE

14. Calais—Hand embroideries.
15. Paris—Miscellaneous.
16. Lyon—Gold thread and wire manufacture.

SWITZERLAND

17. Uzwil—Embroideries.
18. Lucern—Drawplates.
19. Geneva—Wire drawing and drawplates.

HOLLAND

20. Amsterdam—Diamond polishing for drawplates.

CHAPTER III

METAL COLOURING

Metal wire is at the basis of all embroidery goods. The ideal metal for the purpose will be gold, as it is ornamental and well withstands atmospheric influences. But its cost being prohibitive, silver substituted it, when the plating process made it possible to give the baser metal a coating of the nobler one. In course of time, a cheaper substitute for the silver goods was required and several articles have been offered. The first is copper covered with silver from 1 to 90 per cent. of the latter. Among the rest nickel, German silver, aluminium and even steel wires have been tried. (Besides metal coating, wires are also given oxidation or lacquer colours). Thus there are three main processes of metal colouring; (i) colouring by metal plating, (ii) colouring by oxidation and (iii) colouring with lacquer varnishes or other dyes.

Colouring by Metal plating

There are two processes of metal plating: (a) hot plating, and (b) electric plating.

Hot plating.—This is the oldest process. It consists in wrapping a leaf of one metal over a rod of another and heating them red hot almost to the melting point of one of them (Sweating of metals). The two metals thus joined are pressed together and then carefully drawn through drawing dies. The metals usually thus dealt with are silver rod and gold leaf, and copper rod and silver leaf or plate. In both the cases the principle is almost the same, but its practice varies.

(1) So long as the coating is not more than 4 to 5 per cent., metal leaf or plate is used. Thus are prepared gold and silver pasas (bars), i.e., silver bars covered with gold plate.

(2) For higher quantities of the outer coating, mainly in the case of copper bars covered with silver, tubes replace the plate.

(3) The weight of a silver bar to be covered with gold is generally 100 to 140 tolas or 40 to 56 oz. In the case of copper, the bar weighs in India about 40 oz., while in Europe the tendency is to increase its weight to 200 oz.

The conditions for successful plating are the following:—

The bar must be round, true, uniform in thickness, clean and possess a rough surface and a pointed end. It, therefore, requires turning and filing. In the case of rods of lower weight, these processes can be carried out by hand, but for heavier rods a special machine (fig. 1)* has been designed to perform all these operations quickly and uniformly.

The metal leaf or plate is then applied to the well prepared rod and is pressed with (a wooden rod in India) a steel rod to drive away air bubbles. Here also in the case of heavier rods, a suitable machine (fig. 2) replaces

* Illustrations are given at the end.

the hand process. The plated rod is then heated and the plate is once more pressed on it when red hot. It is then allowed to cool, before it is taken to the draw bench.

An alternative to this process is electroplating which has replaced it to a very great extent, being more economical and almost as durable. In this case wire is first drawn and then plated either at an intermediate stage (specially in the case of electro-silvering of copper wire) or at the end. The electroplated wire is then made into various embroidery goods. In the case of gold thread, the flattened metal wire is first spun round silk or cotton yarn and then electroplated. Thus there is an obvious saving of half of the nobler metal, as the under surface of the flattened wire receives no deposit of the metal, which it does not require and which is wasted in the hot plating process.

Electroplating machines are generally constructed with 2 to 4 porcelain vessels, that are plunged into hot water tubs, heated with steam or gas. In the case of two vessels, one is the electroplating bath and the other the washing tub. When there are four vessels, the first one cleanses the wire or thread, the second and the third are gilding baths and the fourth one is the washing vessel. Wires on spools are supported on a frame at one end of the machine, pass successively through the vessels and are wound on brass disks or wooden bobbins at the other end. The brass disks are fixed on a brass roll running at variable speeds controlled by a cone pulley. Either the brass disks or wooden bobbins can be taken off very easily.

As regards electric conductors, the wires or threads passing over metallic rods or rollers carrying negative current act the cathode, while Platinum wires or the plates of the noble metal serve as the anode.

As regards electroplating baths, they are numerous and vary with the nature of work, which is complex if an alloy is to be deposited. Uniformity of deposit and tone is secured mainly by proper attention to the speed at which wires are drawn through the electroplating baths, the concentration of the baths, their temperature and the strength of the electric current.

Various types of crude machines locally improvised are used, but to achieve satisfactory results a machine like the one in fig. (3) is recommended, though it is costly.

As regards the relative merits and applicability of the two processes of metal plating, hot and electric, wires that are coloured with less than 1/3 per cent. or more than 1 1/2 per cent. metal are mostly hot plated for the convenience of manufacture. It is still to be determined that in these cases electroplating will be cheaper and more convenient. As regards the rest of wires and threads, electroplating is in common use except when there is a special trade demand for the other type. The electric process easily gets the better of the other one and is fast displacing it.

Colouring by Oxidation

In India cheaper variety of silver thread is given golden tint by being exposed to the fumes of goat's hair, which gives out sulphur gases that oxidise silver to an yellowish colour.

Colouring with lacquer varnishes

Metallic wires and threads are also sometimes coloured with fast drying lacquer varnishes in various tints. In India turmeric is also used to give yellowish colour. To secure satisfactory results a machine has been devised.

Similar to these varnished threads are Bakya threads that are a fibrous imitation of metallic threads, but do not contain any metal. They are convenient in weaving, but can hardly be said to have the artistic appearance of metallic threads.

CHAPTER IV

WIRE DRAWING

Bar drawing

In the preparation of wire, a metal is first melted and then cast into ingots, round or oblong. They are then rolled down with grooved rolls to a certain thickness and then drawn through dies. Plated bars cannot be put through rolls, but have to be drawn out from the beginning, while single metal bars can be more economically elongated in a rolling mill.

Rolling mills (figs. 4 and 5) differ in the strength of their construction according to the size of the bars they have to deal with and have been seen treating bars from 4 inches to 1/16 inch thick.

In the lower sizes, however, it is economic to draw with a draw bench (fig. 6).

Draw benches are also in use to take bars from 1½" to 1/8".

Hammering is also sometimes resorted to to elongate a bar.

A machine, known as a swinging machine (fig. 7), is constructed to include the operations of hammering and drawing and is being tried to see if it will suit plated bars.

Figure (8) shows the Indian machine, a form of a wooden windlass, that is used in drawing bars. It is given the necessary pulling force by a workman jumping on it. This process is crude and harmful to the health of the worker and requires to be replaced at an early date by some suitable arrangement on the lines suggested above.

Coarse wire drawing

Under this head is included the drawing of wires from 2/5" to 1/8". Very often a drawing bench or a rolling mill is replaced by a drawing block (figures 9, 9a, 9b) either single or in a group of 2 to 9 (figure 10). The latter arrangement is more suitable for coarser stuff like copper wire, where some waste of metal in the form of dust is not prohibitive.

In the case of plated wire, it is more advisable to use a horizontal bobbin (figure 11) than a vertical one, as it does not scratch the outer coating.

These blocks or bobbins are built in different strengths to suit the nature and the size of the wire to be drawn.

Useful for bar and coarse wire drawing is a machine known as the pointing machine (figures 12, 12a, 12b) that makes conical ends for the facility of drawing.

Fine wire drawing

To draw fine wires from .04" there are two main systems, multiple and simple. In the case of the former wire is drawn through a number of dies arranged in a series, the pull from the one to the other being taken up by a number of different arrangements shown in figures (13a to 13i). In

all these cases the drawing dies are generally dipped in a liquid lubricant and arranged in a convenient series. They are mostly diamond dies, cheaper varieties being unsuitable, as they go out of order soon and disturb the series.

Figures (14a to 14d) show some types of simple wire drawing machines in which wire is drawn through a single die only, while a number of spindles are arranged together on the same shaft. Some of these machines also have an arrangement to keep the drawing die lubricated with an oily emulsion. These machines have spindles from 5 to 24 working together. For economical wire drawing, it is necessary to have wire in as large length of one piece as possible and a number of spindles to draw. But there is a limit set to these conditions by the capacity of labour and the factory. In India the less complicated a machine, the better, and hence for some time to come only simple machines with 10 spindles would be the utmost complexity that can be recommended. But even such machines will be useful only if coarse wire is drawn in larger lengths than as at present.

Lubrication

Lubrication is an important matter in wire drawing. Its practice varies in different countries under different circumstances. Among the lubricants that are used are bees-wax, a mixture of bees-wax with an oil, a solution of soft soap, an emulsion of an oil and soft soap, etc. Which of these will be applicable in a given case can be settled only on experience.

Annealing

Wires get hardened in the process of drawing and require to be annealed from time to time. The process varies with the composition and the size of wire. In the case of wire of base metals like copper, steel, etc., great care has to be taken to avoid its oxidation. Special stoves and annealing chambers are on the market for the purpose.

Drawing dies

Wire drawing requires dies through which wire is drawn. They are of various types, those for coarser wire being made of steel or chilled cast iron, while those for finer wire being made of hard stones like ruby, sapphire, or diamond. In the former case a drawplate may be a block with one hole or a plate with many, either of the same size or different ones. Its weight varies from $\frac{1}{4}$ lb. to 30 lbs. As regards its composition, there are already numerous makes on the market and constant attempts are still being made at improvements.

Dies for finer wires are made of ruby, sapphire, or diamond, which after being perforated in the suitable size, are set in a brass disc. Diamond dies are almost universally used in Europe, while the cheaper stones are in use in India. Experience shows that diamond dies, though costly in the beginning, prove to be cheaper in the long run. But in India there is a tendency to go in for cheaper articles, irrespective of their

ultimate cost. It is convenient to use a diamond die only when there is an arrangement to keep it cool by dipping it into a liquid lubricant. Otherwise being very hard, it gets heated to a greater extent than the other stones and obstructs drawing.

Correction of dies

The working and life of a die, whether of steel or diamond, depends largely upon the condition in which it is preserved. Its hole becomes irregular in shape after some use and it will be useless, if it is not corrected from time to time. The ordinary method in India is in the case of steel dies, to use a rimmer and round off the damaged hole, enlarging it in the process. It stands correction in this way to a certain extent before it has to be given up as useless. A more economical method is to batter the die, to punch it again, and then to round it off with a suitable rimmer to the required size. The use of a sensitive drill is also to be recommended when the quantity of dies in use is fairly large.

In the case of dies of hard stones, the process of correction consists in rounding off the irregular surface with diamond powder used in conjunction with a needle or a piece of wire. The Indian wire drawer corrects his dies in a very crude manner. He puts a piece of steel wire through a die and holds it between his hand and teeth and after putting some diamond powder on the die pulls it backward and forward on the wire. Such a procedure naturally results in a certain waste of the costly diamond powder and imperfect correction. Several machines (figure 15) have been constructed to meet with this difficulty. Most of these machines can be driven from a shaft and do not require constant attention during the correction of a die.

These machines are more or less costly and cannot be maintained by ordinary wire drawers of limited means. But it is possible to set up a small correction plant, either in connection with a wire drawing plant, or independently, where people can get their dies properly corrected. Here there is some room for co-operative work.

Making of dies from precious stones

The use of a large number of dies from precious stones for drawing fine wire makes it possible to have a side industry of dies making. The process begins with flattening rough stones with a machine as per figure (16). In this machine a number of stones are placed on the large disc and one or two large stones on the small disc. These discs move eccentrically and rub against each other, thus wearing off unevenness in stones. A lathe (figure 17) then makes centre points, and another bores the stone on the other side. The stone is then taken to delicate lathes (figures 18-19) to bore holes of different sizes. These holes are then polished by special machines (figure 20). A few tools more complete the plant for making dies.

These machines are so delicate that a set of all of them can be run with an electric motor of not more than 3 Horse Power. Such a plant will also polish dies on a large scale for others.

Spooling

Wire has to be transferred from time to time from one bobbin to another and has also to be put on special bobbins for the market. This is done on a small scale with a small hand winder while a spooling machine (figure 21) deals with a large quantity.

Conclusions

Drawing of bars and coarse wires requires heavy and costly machinery, which can well be set up by a central factory. This has been the tendency in Europe and has resulted in cheaper cost of production. Fine wire drawing, on the other hand, requires small machines which can be worked with electricity in the homes of workers and establish a thriving cottage industry. There is plenty of scope for machinery without resulting in any unemployment of workers in the trade; for, there is a large quantity of imitation wire, which is at present imported, but can be drawn here. Coarse imitation wire will have to be supplied and may be either imported or manufactured in a central factory. The other requirement is that fine wire drawing machinery must be familiarised. The various types must be experimented with; the conditions of their successful working must be settled and taught to their prospective users. When a certain number of machines have thus been introduced and a fairly large group of workers trained, an atmosphere necessary for the success of the industry will have been created. It will be advisable to begin first with simpler machines, leading to more complex ones in course of time. Simple wire drawing machines, easy of manipulations, should first be tried, and be followed by bigger ones of the same type. The multiple type of machines must wait for some time till the necessary experience has been gained.

To summarise

Wire drawing is an important trade of almost all the industrial countries of the West and comprises wires of steel, aluminium, nickel, german silver, lead, copper, silver, gold, platinum, etc. It is undergoing constant improvements. In India it is confined only to the drawing of wires from gold and silver by jewellers and manufacturers of gold thread according to a very crude method which has not undergone much change since the days of the Moguls, although the value of the trade is not insignificant, it being worth at least 4 crores of rupees a year. If we add to this the fine copper wires used as electric conductors and telephonic insulators, lead wires used as fuses, nickel and german silver wires used as electric resistances and steel wires with their manifold uses, the industry in India is also capable of large expansion. But its growth and prosperity must depend upon the adaptation of the most modern improvements in the methods of manufacture. So far as wire drawing is concerned,

machines and processes are almost the same in the case of precious metals like gold and silver, as in that of the base ones like copper, lead, nickel, steel, etc. So the investigations that are connected with the drawing of gold and silver wires are likely to be applicable to wire drawing in general.

The problems of wire drawing are those of (a) machines, (b) drawplates, (c) correction of drawplates, (d) annealing of wires, and (e) lubricants.

(a) *Machines*.—For wire drawing there are two principal types of machines—simple and multiple—each having two variations, the French and the Swiss in the case of the former, and the English and the German in the case of the latter. So are there four distinct types of machines.

(b) *Drawplates*.—Drawplates or the dies are the implements through which wire is drawn. They are made of steel, chilled cast iron, ruby, sapphire, and diamond. They are graded also differently in different countries—sometimes they are based upon the diameter of the die and sometimes on the length of the wire they produce. It has to be decided which of these dies will be satisfactory and how their grading in the West should be correlated with that obtaining locally.

(c) *Correction of drawplates*.—These drawplates go out of order in course of time and have to be corrected from time to time. This is done at present in a very crude manner, with the result that they waste away soon, produce bad quality of wire and prove very costly in the long run. To treat them systematically there are three different types of machines, which must be tried to find out what will suit our artisans.

(d) *Annealing of wires*.—Wire gets brittle in the process of drawing and has to be annealed from time to time. The present practice requires much to be modified to suit the latest methods of wire drawing. The stages, the degree and the medium of annealing will have to be different for the different grades of metal, from pure silver to pure copper, through their intermediate alloys.

(e) *Lubricants*.—Lubrication is also an important matter to be attended to in wire drawing. Here bees-wax with a mixture of an oil is used, but the mixture is not suitable to wire drawing by machines. In Europe they use pure bees-wax, an emulsion of an oil and soft-soap with water, or plain water. Which of these or what variations of theirs will be suitable to the trade here under the climatic conditions of this country will have to be determined.

CHAPTER V

METAL THREAD MANUFACTURE

Metal thread is an important product to which embroidery wires lead. It consists of flattened wire spun round cotton or silk yarn. Its quality varies with the composition of metal wire, its upper coating, gold or silver, the nature of yarn and fineness. Thus there is a large variety of metal threads, of which the latest is laminette or flattened metal thread which is replacing flattened wire or lametta. *Kasab*, *Kalabattu* and *Oos* are its various names.

Flattening of wires.

The old method of flattening wire consisted in taking a number of wires on a polished anvil and striking them with a polished hammer (figure 22). It is still applicable to the flattening of coarse wires in the preparation of *Mokhus*. In some parts of the country even fine wire also is thus flattened for metal thread. But it has been largely displaced by the application of delicate rolling mills, with well polished small rolls revolving at a very high speed (figure 23). This process presses the wire so much that not only is it flattened, but it is also elongated and hence weakened. To obviate this a variant of the rolling mill (figure 24) is in use, in which rolls move at a lower speed and flattened wire is collected on reels, instead of being dropped in heaps. European machines are an improvement of this arrangement, resulting in quicker and better work and cheaper cost (figure 25). They differ mainly in the size of their rolls, which are from 6" to 8" in diameter instead of 1" or 2" and produce flattened wire of better finish. They also possess automatic arrangement to stop the machine when wire breaks and to take measured quantity of wire on spools. Sometimes two of them are combined together. So that one operative can attend to both of them and thus the cost of production is reduced. They require very fine wire, as there is no elongation. So it will have to be decided whether it is more economical to make fine wire and flatten it with these machines or to have coarse wire flattened with machines of the old type.

Flattening rolls.

In a flattening mill, rolls are an important part and the most difficult to make. They have to be hardened very uniformly and require the use of special steel and process of hardening. Even in Europe this is a source of trouble, as hardly 2 rolls out of 10 turn out to be entirely satisfactory. In India it is all the more difficult to get satisfactory rolls. The usual trouble is that the rolls are either too much or too little hardened. In the first case, they lose grains of metal and get covered with pits which hold up wire and break it. In the other case, they are cut by wire, and these canals scrap wire or hold it up and break it. Government workshops should undertake these experiments, so that the right sort of article may be forthcoming locally.

Polishing of rolls.

The finish of flattened wire depends upon the polish of flattening rolls, which have therefore to be always kept well polished. Hand polishing is possible in the case of small rolls or a pair or two of big ones, but a machine (figure 26) is necessary if a number of large rolls are in daily use.

Spinning of metal thread.

Flattened wire is collected on small spools and spun round cotton or silk yarn. Machinery for this purpose is being constantly improved with a view to get better finish and cheaper cost. While there are still some places in India where wire is spun round yarn manually, taking one thread at a time, some of the European machines take 60 threads at a time and make it possible for the operative to pay individual attention to each thread. The latest type under construction contemplates to have each thread connected with an electric bell and light, which will draw the attention of the operative as soon as it breaks. The spindle in question can be stopped and set right, while the rest of the machine goes on working. Thus and with the introduction of swiftly revolving spindles, the output is considerably increased. It is estimated that while an indigenous machine of 30 spindles produces 7 tolas of the finest metal thread in 8 hours, an European machine of an improved type (figure 27) turns out 15 tolas in the same time. The latter machine is also constructed in such a way as to spin the metal wire tightly on yarn and hence the finished product is more convenient for the purpose of weaving and embroidery. This explains the popularity of the foreign article.

Conclusion.

It is, therefore, necessary to introduce the latest improvements either by importing foreign machines, or preferably by so modifying the indigenous machine that it can, without much cost, have the advantages of the European practice. Simpler machines must first be tried and then it will be possible to deal with more complex or larger ones. The introduction of these machines will also make it possible to manufacture lamennette or flattened gold thread and telephonic conductors which are in great demand in foreign countries. There is no reason why India should not compete in foreign markets in course of time.

CHAPTER VI

OTHER EMBROIDERY GOODS

The other embroidery goods besides gold thread are :—

- (i) *Chalak*, *Gokharu*, *Sadi*, *Kangri*, *Salma*.
- (ii) *Lachha*, *Tasa*, *Mokhas*.
- (iii) *Tiki*, *Katora*.

(N.B.—Equivalents for these words in Hindustani, English, German and French will be found in Appendix I.)

The articles mentioned in group (i) do not appear in old embroideries and seem to have been of recent origin. They are mostly used in the manufacture of laces and delicate embroideries. They are all different kinds of spiral. The first three, *Chalak*, *Gokharu*, and *Sadi*, are made with flattened wire. *Chalak* is a spiral of flattened wire round a square needle and has a square section, while *Sadi* is a spiral of flattened wire on a round needle and has a circular section. *Gokharu* is a twisted spiral of flattened wire. *Kangri* is made with half flattened concave wire on a round needle and has a circular section like *Sadi*. *Salma* is another form of spiral on a round needle and is made with round wire, thus differing from the rest of the class.

All these goods vary according to their thickness and the nature of wire used. Various markets have various favourite types and hence these articles are manufactured in India on small manually worked machines. In Europe, however, the types are fewer and demand larger. Hence it is possible to use power machinery. The European articles are mostly imitation goods and differ in some respects from the Indian articles. Hence the European machinery as such is not suitable to Indian conditions, but requires to be modified to suit the local requirements.

(ii) *Lachha*, *Tasa*, and *Mokhas*.—These are the different names of flattened wires according to their fineness. They are largely used in making woven cloth and certain laces. The real article is home made, while the imitation one is mostly foreign and is imported under the name of lametta on wooden bobbins. The remarks and machinery mentioned in the case of flattened wire in the preceding chapter apply to this article as well. The normal quantity of imported article is about 300,000 lbs. a year, the manufacture of which should give employment to a fairly large number of workers. Its manufacture will, however, require imitation wire which must first be made locally.

(iii) *Tiki*, *Katora*.—*Tiki* is a tiny circular disc with a small hole in the middle and is largely used in embroideries. It is manufactured from round wire which first forms a small spiral on a round needle. The spiral is then cut from the main wire, placed on a well polished anvil and flattened with the stroke of an equally well polished hammer. These three operations are carried out in India manually, while in Europe a machine has been constructed to perform them.

This machine is certainly useful for imitation goods but it is doubtful whether the slight colour of real spangles will stand it. The machine also requires a power driven polishing machine to keep its anvil and hammer well polished.

Katora is made from flattened wire with the assistance of special dies.

CHAPTER VII

LACES

So far embroidery goods, or Kacha Mal (raw preparatory materials) have been dealt with. We can now take up the consideration of the products manufactured from them. These are conveniently grouped under two heads, (i) small embroideries such as laces, borders, etc., and (ii) embroideries on large pieces of fabric, like *Kinkhab* or gold cloth, Saris, etc.

There are a number of varieties of goods known as laces, borders, etc., with different names according to their size, design, the preparatory materials used and the process of manufacture. The last item will give, perhaps, the most convenient classification for present purposes. Gold thread itself is sometimes spoken of as gold lace, specially in English, but it is not a general practice.

In point of size laces may vary from 1/16" to 6" in breadth, may be plain or with various designs and may be mainly of gold thread, wire and other embroidery goods or of these articles mixed with silk or cotton yarn. Laces are, however, classified here as (i) embroidered, (ii) knitted, (iii) braided, and (iv) woven.

Embroidered laces.

These laces are manufactured with metal thread or the other embroidery goods, both either alone or mixed with silk or cotton yarn. Those, in the manufacture of which *Chalak*, *Salma*, *Kangri*, etc., enter, represent *Karchobi* or *Zardosi* and *Kamdani* work in India and are mostly hand made, both in India and Europe, as the materials are too fragile to be worked on machinery and the designs too many to permit production on a large scale, which is necessary for the use of machinery. In Europe this is a home industry specially for women workers in winter and is confined, in Germany, mostly to the hilly districts of Saxony—Annaberg, Buchholz, etc., and the districts about Calais in France. Their designs are bolder, more fresh and artistic than the Indian article, which is more or less a base imitation of the former. The improvement of the Indian article up to the standard of the European will make it acceptable to foreign markets which is not the case at present. It, however, depends upon a systematic culture of the proper æsthetic taste among Indian workers and their freedom from the habits of servile imitation.

Embroideries with gold thread, alone or with silk or cotton yarn, include laces and motifs for fabric. These are hand made in India, but in Europe machinery is applied to their manufacture on a fairly large scale. These machines are those that are, with a little modifications, in use for the manufacture of Swiss embroideries. They are used in cottages and worked by foot or grouped together in a large number in a factory and worked by electricity or any other source of power. They are in length from 5 to 15 metres and employ about 300 needles. So in a way they do the work of 300 workers. For instance a *Sari* with some simple motif will take

five days for a workman to finish, while a 5 metre machine will not take as many hours. Detached motifs also can be manufactured in large quantities.

The needles of the machine are guided along a punctured card either by hand or automatically. The threading of needles and the puncturing of cards also require special machines.

These are highly complicated processes and not capable of easy adaptation. Nor is there any urgent need for such machines for some time to come so long as India is not in running for foreign markets.

Knitted laces.

For knitted laces and other work knitting machines similar to sewing machines are in use. They will knit with gold thread or silk or cotton yarn, but their use will have to be specially taught. Simpler types of such are already on the market and more complex ones can be imported if there is a demand.

Braids.

There is another class of gold thread articles, which are similar to laces and are known as braids, ribbons, galons, passmentaries, etc., that are mostly used for official uniforms or as fringes and borders. They are either flat in the form of ribbons, etc., or circular in the form of cords. There is a large variety of them with corresponding machines (figures 28-30) and each pattern requires a special machine. These machines vary in complexity from 9 or 13 spindles to as many as 200 according to the size and pattern of the article. Simpler types of these machines are not difficult to work and can be easily introduced to manufacture much of the foreign goods.

Woven laces.

These are by far the largest in quantity. They have various trade names like Gota, Dhanuk, Anchal, Kinari, Badla, etc., and also include certain varieties of tapes. They are woven on looms constructed almost on the same principles as ordinary looms, with the exception that the weaving breadth is very small from $\frac{1}{2}$ " to 3". They can weave a large number of laces, say from 12 to 48 or more. They are generally constructed for weaving silk and cotton and are provided with glass rollers, glass head eyes and other modifications to suit them for gold thread weaving. In this connection several attempts have been made in India, at Madras, Benares, and Surat specially, to construct such machines and have succeeded so far as simple weaving is concerned. Pattern weaving is more difficult and would require a more complex machine. If some of the European machines are introduced, they will assist in solving this problem of the trade. It has, however, to be borne in mind that gold thread to be used on power driven machinery must itself be of better quality than the average Indian produce.

CHAPTER VIII

KINKHAB AND METAL CLOTH

Kinkhab may be said to be the highest product of this industry both in point of the ultimate stage of manufacture it represents and also the excellence of the Indian article which has well earned a worldwide reputation. There is still a good local trade, but foreign demand has almost disappeared owing to the modern tendency to have cheaper articles of short duration to suit democratic taste and the ever changing vagaries of fashion with which the conservative Indian weaver could not keep pace. This article is used for various purposes from shoe cloth to the richest scarf, blouse, petticoat, or the most ornamental trappings.

In Europe there are various types of power looms in use for the manufacture of *Kinkhab* and metal cloth, which is known as *tasai* cloth in India and in the manufacture of which flattened wire takes the place of gold thread in India and flattened thread—*laminette*—in Europe. The introduction of these European looms will be necessary if the foreign markets have to be catered for.

CHAPTER IX

FOREIGN MARKETS

In the foregoing pages an attempt has been made to show (i) what is the extent of foreign competition in local markets and how to meet it, and (ii) what is the scope for the Indian Industry to compete in other markets. European countries—France and Germany principally—manufacture a large quantity of metal thread and its products—laces, cloth, etc., mainly for foreign markets, they themselves using only a very small percentage of the total production. India is their important, but not the only, customer, but their goods have penetrated all the markets of the world including, along with principal places, even the nooks and corners of Asia, Africa and America. The author made an attempt to see if the Indian articles would have any demand in foreign markets and took a fairly large collection of Indian samples to Europe. He, however, found that they had very little demand beyond the limits of India as their patterns were unsuitable and cost high on account of being made with fine materials. At the same time it appeared that if India manufactures according to the foreign patterns and produces imitation goods, she can easily compete with the European manufacturers. Foreign markets, have, therefore, to be won. Their demands must be studied and supplied. This would require (1) a representative collection of foreign samples and (2) the adoption of the various modifications in the present methods of manufacture as suggested in the foregoing pages. To proceed otherwise is simply to grope in the dark. It is satisfactory to note that the Madras Government has sent an English lady to Europe to study the lace markets there.

CHAPTER X

✓ CONCLUSION—SUGGESTIONS FOR FURTHER INQUIRY

A perusal of the foregoing pages will lead to the following principal conclusions :—

(i) The gold thread industry in India has suffered from foreign competition, which has deprived it of a considerable part of the local market and ousted it almost completely from the foreign markets.

(ii) The Indian Industry is capable of recovering the lost ground in India and capturing some of the foreign markets, if it is put on modern lines.

(iii) But the introduction of modern methods and machinery is a difficult matter and cannot be recommended all at once. European machinery is not, broadly speaking, exactly suitable to the Indian needs without some modifications. It has a number of varieties even in Europe to suit the local circumstances. To attempt to import any of them wholesale here would mean certain failure, as, like an exotic plant, they may not strike roots in a strange land. They must be adapted to the peculiarities of the Indian labour, market, trade and climate. This would require expert knowledge, technical skill and habits of systematic work, which Indian workers, in general, do not possess.

Now the question arises what should be done to help the industry. It is doubtful whether there will be any appreciable endeavour at improvement from within the industry as a whole, as artisans are mostly poor and illiterate and hence unenterprising nor have they either the money or intelligence to experiment with newer methods. Capitalist merchants, on the other hand, do not care to take up any risks so long as they get their profits. Under the circumstances, Government aid in one form or the other appears to be necessary.

The best way in which Government can give this much needed assistance is either to start a central institution or a Demonstration factory at a place like Surat or Benares or to help with subsidies or loans those few pioneers, who are trying to introduce new methods. Similar attempts have been made by Government in connection with hand-loom weaving with some success and the effect that many starving families of weavers now earn their bread easily.

The importance of thus helping this industry will be evident when it is considered that the manufacture of all the imported articles under consideration—gold and silver threads and wires, real and imitation, lamettas, laces, embroideries, etc.—will give full employment to about 100,000 persons working with improved machines and retain in the country lacs of rupees that are at present paid out to foreign countries like France and Germany. If a small sum of public money is required to achieve the well-being of so many people and to produce so much wealth in the country, it will be considered to be sound on all economic principles even in these days of financial stringency, as it will be an *investment* and not expenditure.

If an Institution is in view, it may be expected—

(1) to study the various modern methods and machines with a view to their adaptation to the Indian needs. Indian workers are not so strong, active and well trained as the European, nor have they much means. So, if possible, a new Indian type should be evolved, which will be simple in construction and working and cheap in price. Particular attention must be paid to alter, without rejecting in toto, the Indian machines and processes so that their working may be improved without much expense. Japan has successfully followed this policy in improving a large number of her industries ;

(2) to supply exact measurements. All modern work requires exactness, which is wanting in old crude method. So the various measures of weights and lengths used in this trade will have to be standardised and brought in line with the exact measurements of the West. It is not hinted here that the standards are to be changed, but such measures as are in use should be systematically correlated, so that in actual work loss of energy, material, etc., may be avoided and uniformity of production secured ;

(3) to help in securing the right sort of raw materials, specially cotton and silk yarn. Experiments will have to be conducted to determine which special varieties will suit the manufacture of gold thread. Attempts may also be made to get the required silk and cotton yarn locally ;

Silk yarn is locally made, but is of poorer quality. There is every possibility of improving this quality and of supplying the yarn that is very badly wanted in the trade, the imported article being very costly. As regards cotton yarn, it may not be possible to make it in India, but useful inquiries can be made to polish and dye the imported raw yarn ;

(4) to train artisans and to help them to organise themselves on co-operative lines ;

(5) to act as a bureau for technical and scientific advice and guidance and commercial information about local and foreign markets. There is every chance of competing successfully in foreign markets with European manufacturers if the manufacture is organised on proper lines ;

(6) to organise an art and trade museum with a view to improve existing patterns of art (laces, cloths, etc.) and to import new ones suitable to the local and foreign markets ;

(7) to carry on propaganda work in general in order to interest artisans and other workers in the trade in modern methods of manufacture and organisation. (Such an Institute has been recommended also by Mr. V. N. Mehta, I.C.S., Director of Industries, United Provinces, on grounds similar to some of those given above.)

The requirements of such an Institution.

Such an institution will require a suitable building and machinery, worth about 1,00,000 rupees. Its staff may include a Principal, a foreman, two fitters, a drawing master, a clerk and two peons. Some of these may be only

part-time officers. Their pay, with contingent and other experimental expenses, will entail recurring charges to the extent of about Rs. 20,000 per year. This will also include additions to machinery, etc.

Its organisation.

As gold thread manufacture is not confined to one province, it is but proper that such an institution should be organised and run by the Imperial Government, or the various Provincial Governments concerned, like the Governments of Bombay, Madras, Central Provinces, United Provinces, the Punjab and Bengal.

The Bombay Government have taken the initiative of sending out two persons to Europe for inquiries in this connection, and can reasonably expect to be supported by other Governments.

If such an institution cannot be established on account of financial stringency, liberal support should at least be given to those who are doing pioneer work to help and encourage them in their efforts, provided of course they are qualified for their work and justify the support given.

APPENDIX I

Glossary

English.	Vernacular. (Gujarati & Hindi).	French.	German.
Bar-Metal	<i>Pasa, Gull, Kandila</i>	Barre	Stangen.
Die	<i>Ve, Bara</i>	Filieres	Ziehsteine.
Draw-plate	<i>Jantar</i>	Filieres enacier.	Ziehseisen.
Drawing-bench	<i>Ghoda</i>	Bance a etrer	Ziehbank.
Gilding Machine	<i>Rangavano Sancho</i>	Machine de dorer	Amlage zum vergol- den.
Gold cloth	<i>Kin Khab</i>	Remises et metallique.	Gold stoff.
Gold or Silver Thread	<i>Kasab, Kalabatta, Oos</i>	Fil d'or d'argent	Gold und Silber gespinn.
Laces, Braids,	<i>Kor,</i>	Dorurers,	Spitzen bands.
Cords	<i>Gota</i>	Bonneterie,	Besetzen.
Fringes,	<i>Dhanak</i>	Broderies,	Kordel.
Ribbons	<i>Anehal</i>	Galons,	Fransens.
Trimming		Passmentaries	Galons, Passmenten, Soutaches, Novemen- tes.
Lametta	<i>Lachha, Tasa</i>	Lame	Platt.
Rolls	<i>Mokhas, Badla</i>	Moulin de Guimpier	Wals.
Rolling Mill	<i>Roll</i>	Meules pour Moulin	Plattwalzwirk.
(Flattening)	<i>Chapadovano Sancho</i>	Banc de Moulin	
Spanetes	<i>Tiki, Satar</i>	Laminoir.	Flitter.
Spinning Machine	<i>Vintavono Sancho</i>	Pailletes.	Spinning maschine.
Spirals	<i>Chalak, Nakshi, Tikora,</i> <i>Salmu, Kora, Sadi,</i> <i>Gijal, Dabka, Kangari,</i> <i>Janjira.</i>	Rouet de Guimperie	Bouillon.
Spooling Machine	<i>Tariharvano Sancho</i>	Trancaneuse	Aufspulen maschine.
Wire	<i>Tar</i>	Fil	Draht.
Wire Drawing Machine	<i>Tar Tanavano Sancho</i>	Trefleuse	Zientisch.

APPENDIX II

A list of makers of, and dealers in, Machinery required for the manu-
facture of wire, gold thread, etc.

N.B.—Only most important names are given. Some of these do not understand English.

2. The names are given without any responsibility or guarantee; most of the machinery, suitable to the European conditions, may be useless in India.

3. For this class of machinery the Gauri Gold and Silver Works Co., Sagarampura, Surat, are the Indian representatives of many important firms—including E. Brondel of Lyon, Bauer and Krause of Germany and Les Freres Breguet of Switzerland. They undertake to offer advice to, and select, get and instal machinery for, others on conditions obtainable on application.

*Wire Drawing.**England.*

George Hattersley & Sons, Ltd., Keighley.
 W. H. A. Robertson & Co., Ltd., Lynton Works, Bedford.
 E. Brand, 96, Victoria Street, London, S. W. 1.
 H. D. Douglas & Co., 32, Queen Victoria Street, London, E. C. 4.
 The Wire Drawing and Engineering Supplies, 62, Friday Street, London,
 E. C. 4.
 Calipe Dettmer & Co., 21, Poland Street, Oxford Street, London, W.
 G. Crossley Ltd., Albion Works, Serpentine Road, Cleckheaton, Yorks.
 A. Robinson, Victoria Iron Works, Brighouse, Yorks.
 E. Thornton & Sons, Ltd., Brookes Mill Engineering Works, Bridge
 Road, Brighouse, Yorks.
 J. Hands and Sons, Cardigan Works, Belmont Row, Birmingham.
 G. Jones, Ltd., Lionel Street, Foundry, Birmingham.
 Taylor & Challen, Ltd., 60, Constitution Hill, Birmingham.
 M. Marton, 51, Buckingham Street, Birmingham.
 S. H. Hammer, Range Bank, Iron Works, Range Lane, Halifax.
 Barren & Crowther, Sedgwick Street, Preston, Lancs.

France.

Ferdinand Dobler, 49, Rue du Rocher (8^e arr), Paris.
 E. Mire, 12, Cite de Phalsbourg, Paris.
 Caffort Freres, 125, Rue du Chemin-Vart, Paris.
 Chevallier Freres, etc., Co., a Verneuil-Sur-Aure (Eure).
 Aubois et Cervais Freres, Route de Bouzin Court, Albert (Somme).
 M. Bomblet, 94, Rue de Montrenil.
 E. Brondel, 5-11, Rue de la Reconnaissance, Lyon-Villeurbanne,
 A. Latour, Lyon.
 Bret Freres et fils, Porte de Brentenil, Verneuil (Eure).
 Cisseville, 5, Rue des Jeters Laigle (Orm).
 Jules Georges et Cie, Saint Dizier (H. M.).

Germany.

Joh. Wilh, Spaeth, Bahnstation, Nurnberg-Dutzensteich.
 Emil. Hennig, Nurnberg, Wodansplatz, 4.
 H. M. Bawer, Schwabach, Cei-Nurnberg.
 Bauer-Krause, 24, Thornassiustr, Leipzig.
 Walz Maschinen Fabrik Ofpenbach-am-Main.
 Carl G. Paffrath & Gohring, G. M. O. H.
 C. Wezel, Pforzheim.
 Brumminghaus, Werdohl, Westphalia.
 W. Gerbardi, Ludenscheid (Westph).
 Krateosenwerke, Gouna (Sax).
 Dahlhaus & Co., Iserlohn.
 Carl Beihler, Pforzheimi.
 F. Osenberg, Berlin Lichtenberg.

Switzerland.

Les Freres Breguet, Carouse Street, Geneve.

*Wire Flattening, Spinning, Gilding, etc.**France.*

L. Charnier, 54, Rue Bugeand, Lyon-Brotteux.
 Dujardin, 48, Rue des Francs-Bourgeois, Paris.
 Alfred Joliet, 10, Rue Aux Ours, Paris.
 Allard Latour, 70, Rue Louis Guerin, Lyon.
 A. Francillan, 23, Rue Vieille Monnaie, Lyon.
 E. Brondel, 5-11, Rue de la Reconnaissance, Lyon-Villeurbanne.
 Rousseau & Jacquelin, 13, Rue, Vieille Monnaie, Lyon.
 Didier, 8, Rue Pelletier, Lyon.

Germany.

Langbein Pfanhauser Works, Sellerhausen, Leipzig.
 Joh. Wilh Spaeth Bahnstation, Nurnberg-Dutzenstoich.
 Emil Hennig, Nurnberg, Wodansplatz, 4.
 Carl Muller, Winsenbunrg Bayern.

*Lace Making (Galons, Passmentaries, Braids, Cords, Soutaches, etc.)**England.*

Wilkinson, Coventry.
 Smith Bros., Hegward, Yorks.
 Robert Hall & Son, Hope Foundry, Bury.
 The Selson Engineering Co., Ltd., Selson House, 83-85, Queen Victoria Street, London, E. C. 4.
 The Standard Machine Works Co., Commercial Street, Nottingham.
 Harling & Todd, Ltd., Rosegrove Iron Works, Burnley.

France.

E. Cornely & Cie, 87, Fleg St. Dennis, Paris.
 H. Drossner & Co., 48-52, Bd Sebastapol, Paris.
 J. Chotel, 20, Rue Botzaris, Paris.
 Girard, Pl & Rue Germain Marel St. Chamond (Loire).
 Lebocey Freres, 23, Rue de Paris, Tronys (Aube).
 Lepine & Gout, 3, Quai St. Clair, Lyon (Rhône).
 F. Schmidt & Cie, Imp. Rigaut, St. Quentin (Aisne).
 Maison A. Ferlat, Montee, St. Sebastien, 10, Lyon.
 G. Servet, & J. Monssy, 13, Rue Desiree, Lyon.
 Comptoir Lyon-Allemond, 69, Rue de la Darse, Lyon.

Germany,

Johannes Eckert, Farnruf, 36, Buchholz (Saxony).
 Schirmer, Blau & Co., Prenzlauer Alle, Berlin, 35.
 Emil Philipb, Ohorn (Saxony).
 G. H. Schafer, Ohorn (Saxony).
 Vogtlandische Maschinenfabrik A. G., Plauen.
 Fr Suberg & Sohn, Barmen.
 Gustav Krenzler, Barmen.
 Paul Prause, Barmen-Ritterhausen.

Peter Banmihen, Barmen.
 P. F. Reinshagen, Barmen.
 Gustav Ludorf & Sohn, Barmen, Rit.
 W. Drosser, Barmen.
 Ewald Blasberg, Fenerstr, 14, Barmen.
 Wilh Korting, Barmen.
 Ewald Blassberg, Barmen, R.
 Jacob Bornmann Sohne, Barmen.
 Robert Keil, Geyer (Saxony).

Switzerland.

Athos, Lac de Constance, Zurich.
 Etablissements Benninger S. A., Uzwil, St. Gall.
 Argovia, Ltd., Mellingen.
 Charles Keller, Arbon.

Miscellaneous—Draw-plates, Measuring Instruments, Etc.

England.

Ed. Brand, 96, Victoria Street, Westminster, London, S. W. 1.
 Firk & Kirk, Hatton Garden, London, E. C. 1.
 The Wire Drawing & Engineering Supply Co., 62, Friday Street,
 London, E. C. 4.
 C. F. Casella & Co., Ltd., Gurney Street Works, Walwarth, London,
 S. E.
 Thos. Bolton & Sons, Ltd., Richmond Road, Parkstone, Darset.
 Mansfield & Sons, Ltd., 11, Hamilton Squares, Birkenhead.
 W. G. Pye, & Co., Granta Works, Cambridge.

France.

Societe des Filieres Ballopet, Lagnien (Ain).
 Bellet & Ronzeau, Trevouz (Ain).
 Mouratile, 193, Avenue Felix France, Lyon.
 Victar Gaillard Fils, 26, Rue Vieille Monnaie-Lyon.
 Henry Jonx, 41, Rue Vieille Monnaie-Lyon.
 Terrier, Rue de la Liberte, Bourg, (Ain).
 Armand Wolff, 4, Rue de Compeigue, Paris.
 J. Sigear, 47, Rue Vivienne, Paris.
 F. Cohen & Ullmann, 30, Rue Drouot, Paris.

Germany.

Wiehelm Eisenfuhr, Kommandanten Street, 31, 31-a, Berlin, S. 14.
 Siemens Halske, Siemensstadt, Berlin.
 Berbher Deamantzichotenfabrik, G. M. O. H., Lindowersta, 18-19,
 Berlin, 39.
 Blöses & Scholz, Innsbrucker Street, 36, Berlin-Schoneberg.
 Rudolf, Vogh, Chemnitz.
 Max Kohl, Aorfersti, Chemnitz.
 Dr. Schmidner & Co., Nurnberg.
 Ratiborer Eisenwerk, Ratibor.

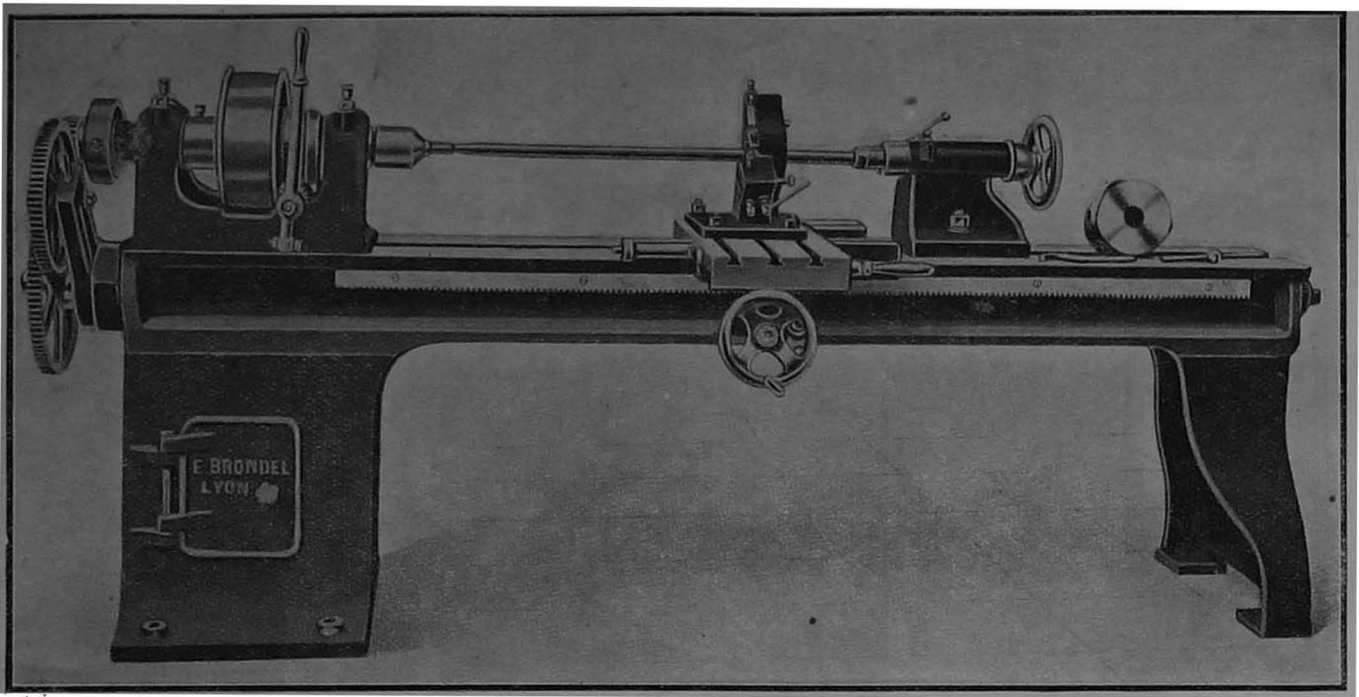
Switzerland.

Schweiter, Ltd., Horgen.
 Merz & Humbel, Menziken.
 E. Walker, Fabrique de Machines, Soleure.
 Joseph Petermann, Ateliers Constructions, Montier.
 A. Kanziger, Zuchwill (Soleure).
 • Andre Bechler, Mouter.
 Jormed, Lucens, Vand, Swisse.
 Ateliers de Construction Ruti, Zurich.

Holland.

Cornelia Vega, Trooststreet, Amsterdam.
 Hasselman, Spoorndammastreet, 90, Amsterdam.
 Jon Hamer & Co., Frederiksplein, 6-8, Amsterdam.
 Lindeman & Kapsenberg, Prisenegracht, 925, Amsterdam.
 Anton Smit & Co., Tulpstreat, Amsterdam.

FIG. 1.—A Bar Preparing Machine. (Broudel—France).
SPECIAL LATHE FOR EXTERIOR TURNING OF SILVER AND COPPER RODS.



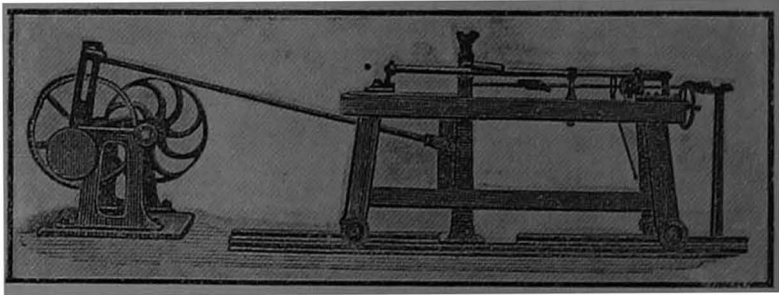
This parallel lathe is specially designed for its use ; it is very strong and allows running at a high speed (300 revolutions in a minute) with a strong fast puppet of 225 m/m centre height : hard brass bearings, semi hard steel shaft, bored its full length : driven by a single pulley ; with an inner strong friction clutch and ball-bearing abutment.

It is provided with a stay with 3 guide rollers for calendering the rods ; the cutting tool is inclined and designed in such a manner as to make unnecessary the constant forging and grinding of it ; deformation being impossible.

Summing up—this special lathe permits the following operations : (a) Cutting up the rods ; (b) Turning of the end of rods ; (c) Turning of the point ; (d) Turning of the body of rods.

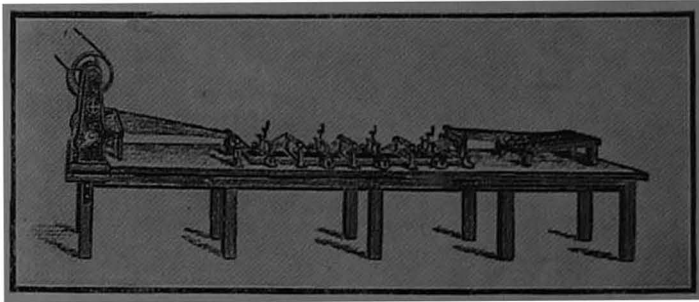
This lathe is constructed also for boring copper or silver rods.

FIG. II.—A Metal Leaf Pressing Machine. (Brondel—France)



This has the form of a lathe, holding the metal rod between two centres. The rod is covered with metal leaf which is pressed by means of batons rapidly moving to and fro, while the rod turns round.

FIG. III.—A Gilding Machine. (Brondel—France.)



This machine is formed of a wooden table, carrying a wooden frame for the unrolling spools, 4 porcelain vessels for the gilding baths, with a wire plunging device; a spooling device with cone pulley gear and a brass roll suitable for receiving 20 brass disks.

There is a tank for heating vessels with its heating device, either by means of a steam coil or by means of gas burners.

Diameter and breadth of controlling pulleys: 250 X 35.

Number of revolutions of pulleys: 40.

Measurements of the machines with rolls of 625 X 179 1/2, length: 4,70 meters; breadth: 1,150 meters.

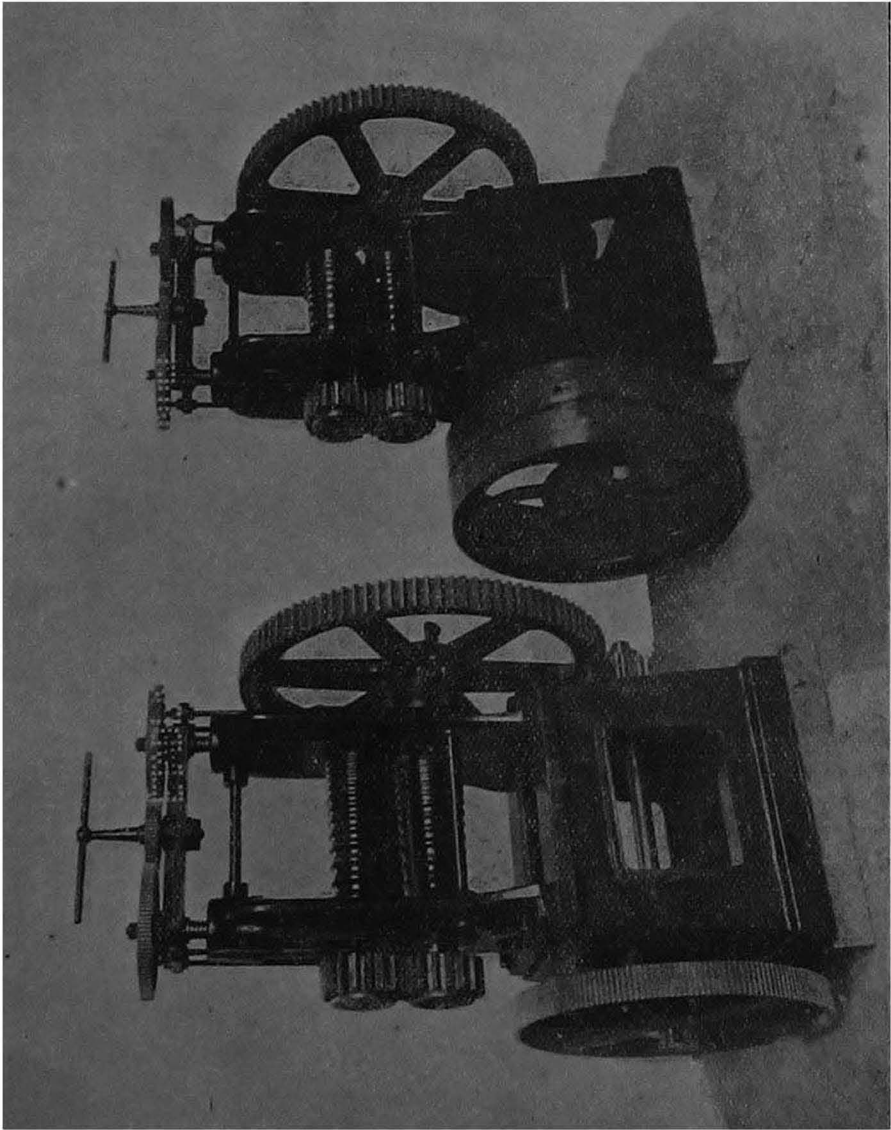
Power necessary: 1/4 HP.

Weight of the machine: 260 Kgs.

Produce per hour: 0, 8 to 1 Kg. in 6 P 1/2—3 Kgs. in 7 P 1/2.

A 20 threads machine, with 4 vessels, in full running, would need an electric current of 5 volts and 4 Amperes.

FIG. IV.—A Power Wire Rolling Mill. (Brondel - France).



Wire-Rolling Mill, with cylinders of 180 mm diam. X 35 mm

Length of the table : 230 mm.

Dimensions : 1m, 000 X 0,750

Motor power : 6-8 HP.

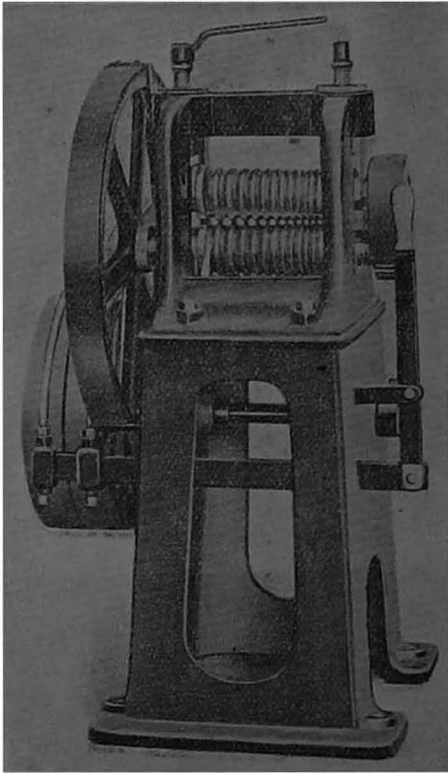
The machine is mounted on a base fastened to the ground.

Geared by means of a fast and a loose pulley, driving two sets of cut tooth gears. It can also be made for direct coupling, to be driven by means of an electric motor.

The frames, of solid construction, are made of cast iron, the bearings, of hard bronze, are automatically greased, as well as the driving gear bearings.

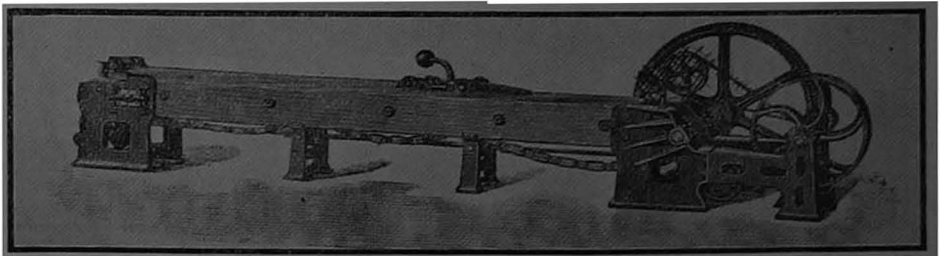
The cylinders of special steel are grooved and geared together by means of cut tooth pinions. Setting screws keep the two rollers in touch.

FIG. V.—A Power Wire Rolling Mill. (Breguet-Switzerland).



The machine consists of a cast iron seat with steel rolls, varying in dimensions from 6" to 12" in diameter. The rolls are grooved to receive wires to be drawn and are pressed by means of springs overhead. Such rolls are used for rolling metallic bars from 4" to 1" in diameter down to $\frac{3}{8}$ "

FIG. VI.—A Power Wire Drawing Bench. (Brondel-France).



This drawing bench, of a power of 15,000 Kilogramms, is composed of the following parts.

One bench-head to receive the draw-plates.

One chain of a sufficient length for an useful length of 15 meters.

Some intermediate supports for the wooden bench with rollers for the chain.

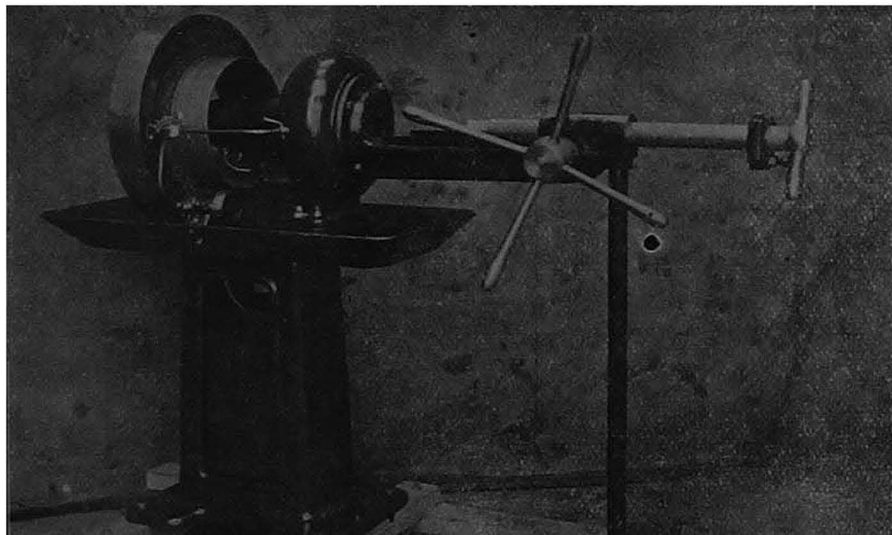
One frame receiving the shaft of the chain, the gearing and the fast and loose pulleys.

To give to the bench a speed of 18 meters per minute, the shaft of the pulleys must run at a speed of 144 revolutions per minute.

These pulleys are 200 m/m in diameter and are 180 mm wide.

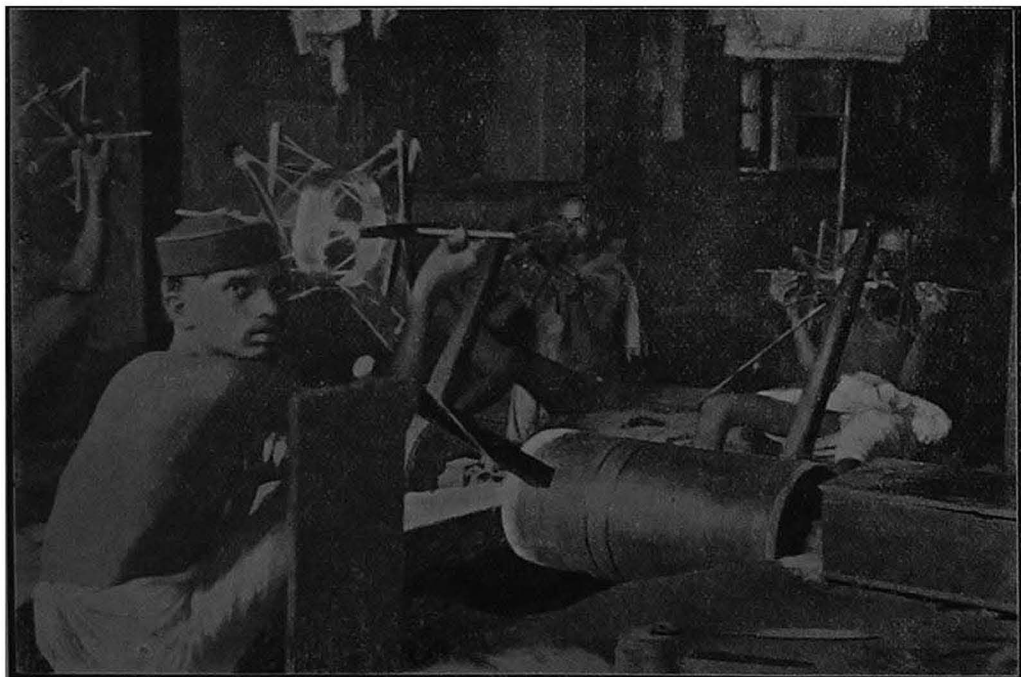
The fixture composed of two small pulleys that may be seen under the main shaft is not furnished.

FIG. VII.—A Swinging Machine (Breguet-Switzerland).



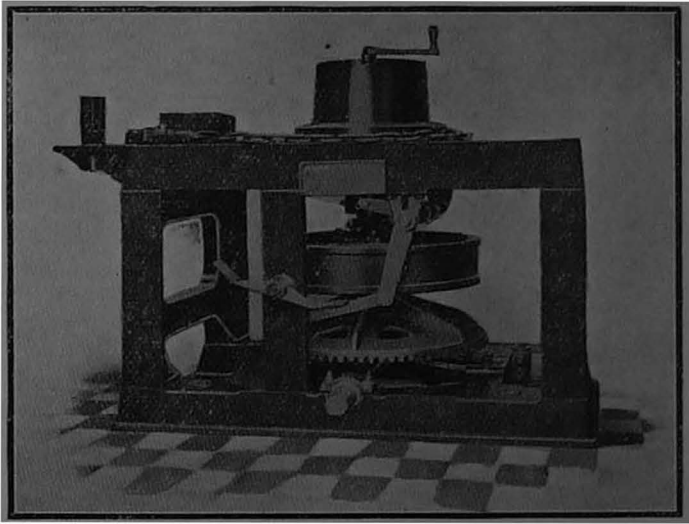
This machine combines the principles of a hammering and a rolling machine. The hammer works at 5,000 strokes per minute, while the metal rod is pulled through steel blocks arranged in series in a step form.

FIG. VIII.—A Wooden Windlass (India).



This consists of a wooden drum with a number of spokes. It is worked with the foot, the operator jumping on the spokes one by one. The wire is wound on the drum.

FIG. IX.—A Single Vertical Wire-Drawing Block. (Robertson-England)



The illustration shows a type of heavy Drawing Block, which can be arranged for either *Motor* drive or drive from existing shafting.

Framing : of cast iron or steel built up.

Drive : through cast steel machine-moulded bevel wheels, with friction clutch operated by foot pedal.

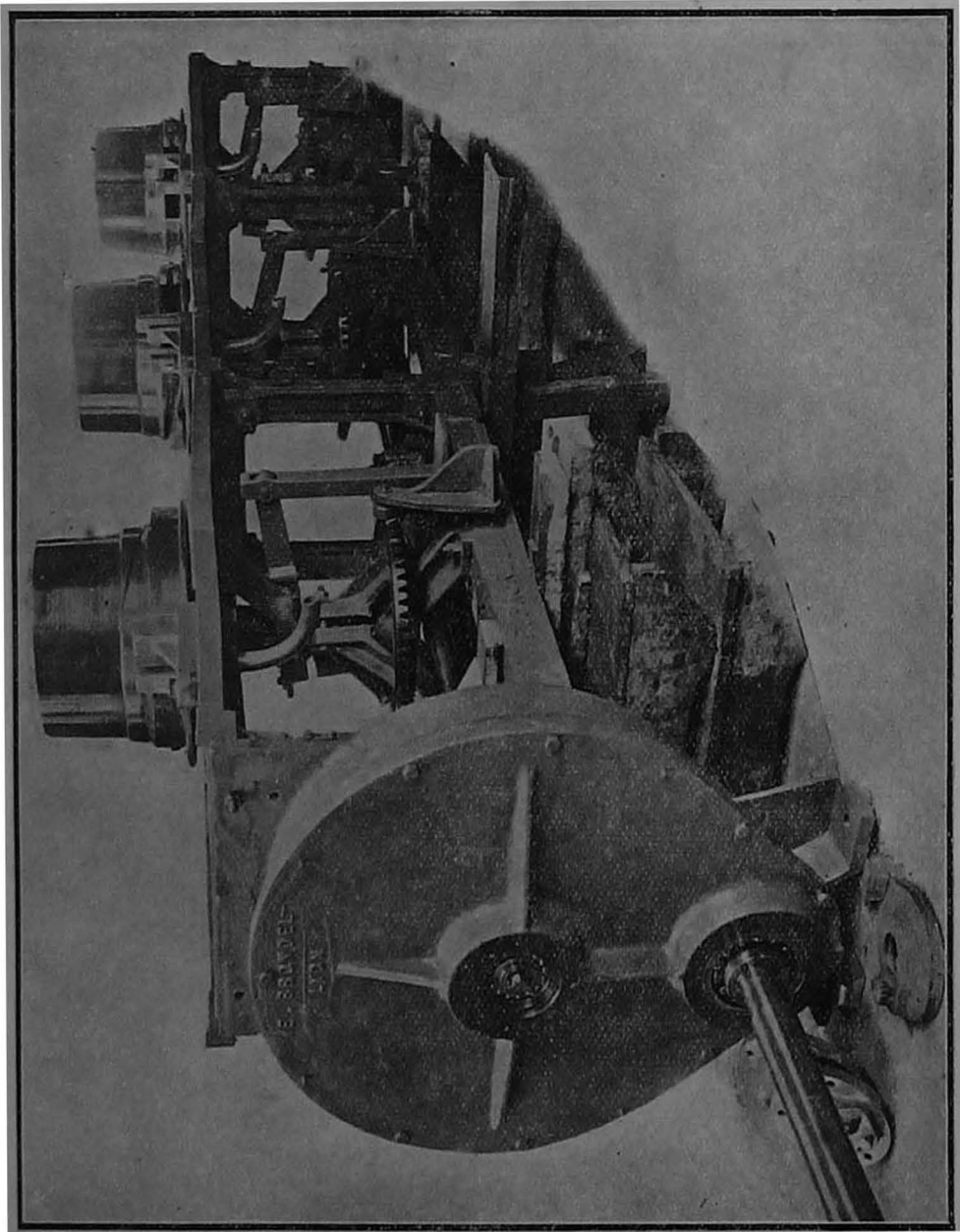
Pulling-in Gear : either of cam-operated type or chain attached to block.

Die Holder : of cast steel, swivelling type.

Bearings : of phosphor bronze, with ball race at bottom of footstep.

Diameter of Blocks : 30", 24", 22", 20", 18".

FIG. IX-A.—A Single Vertical Wire Drawing Block for Coarse Wires. (Brondel-France)



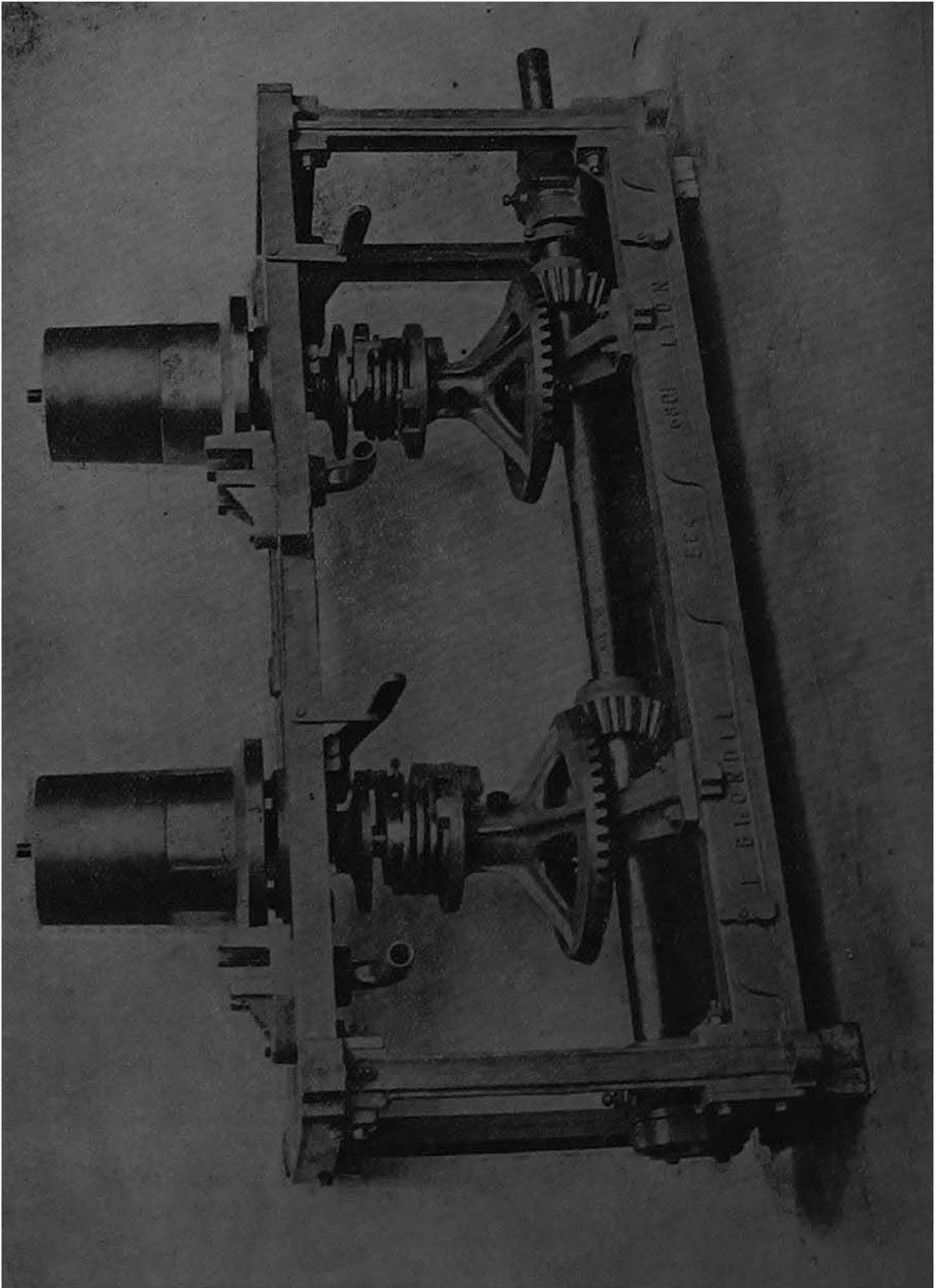
Bobbins driven by bevel gears (cut teeth) individual friction gear managed by treddle.

One Drawing Bench or Two 300 m/ms bobbins—B.C.4.—Type, without either driving movement, or drum to receive the bundles, or drawplates.

One drum to receive the bundles, with its support.

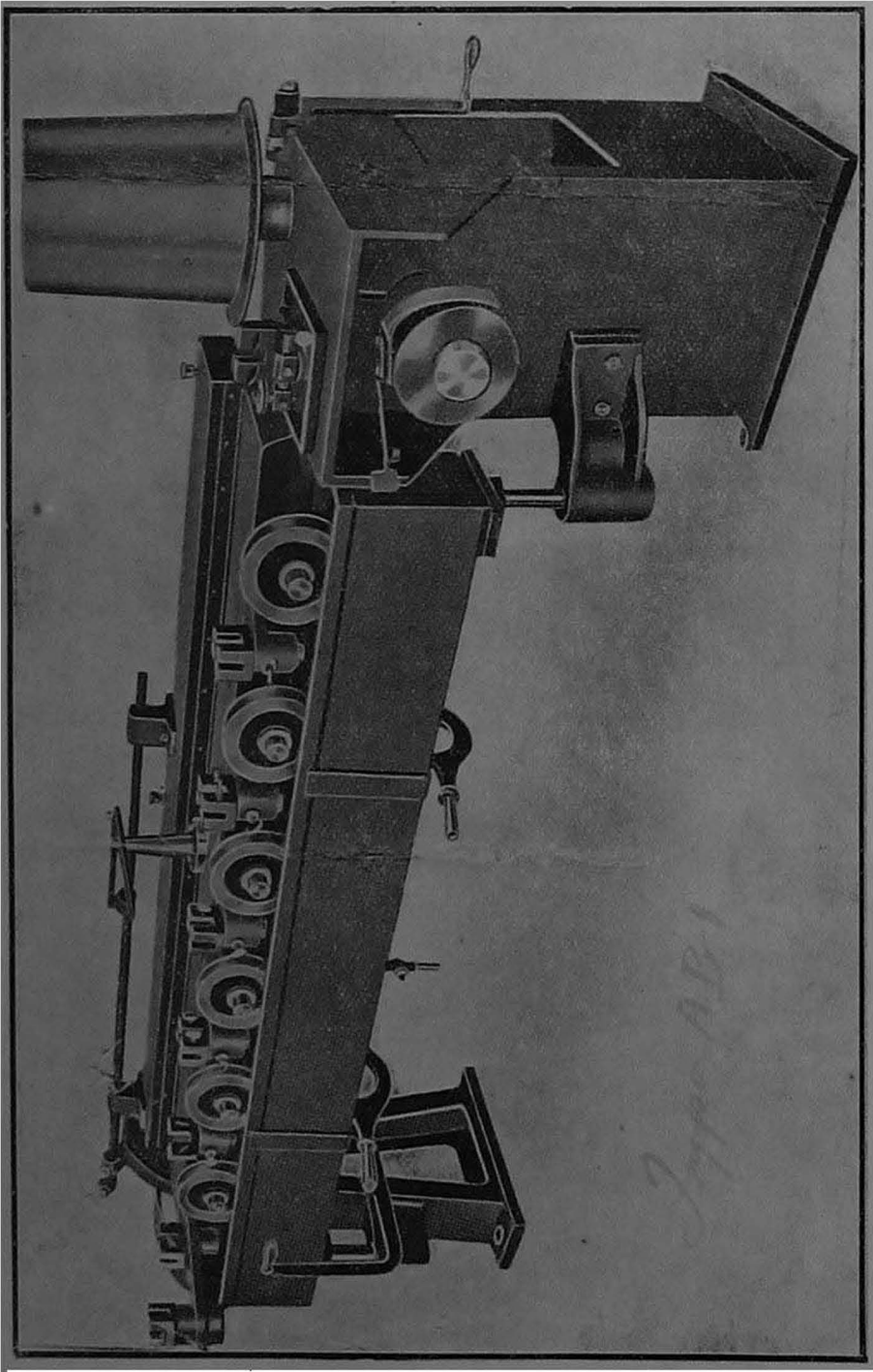
The driving may be done by means of a speed reducer closed in a carter, or by a not closed set of gears. It may be done, more simply by fast and loose pulleys and belt shifter.

**FIG. IX-B.—A Single Vertical Wire Drawing Block for Coarse Wires.
(Brondel-France).**



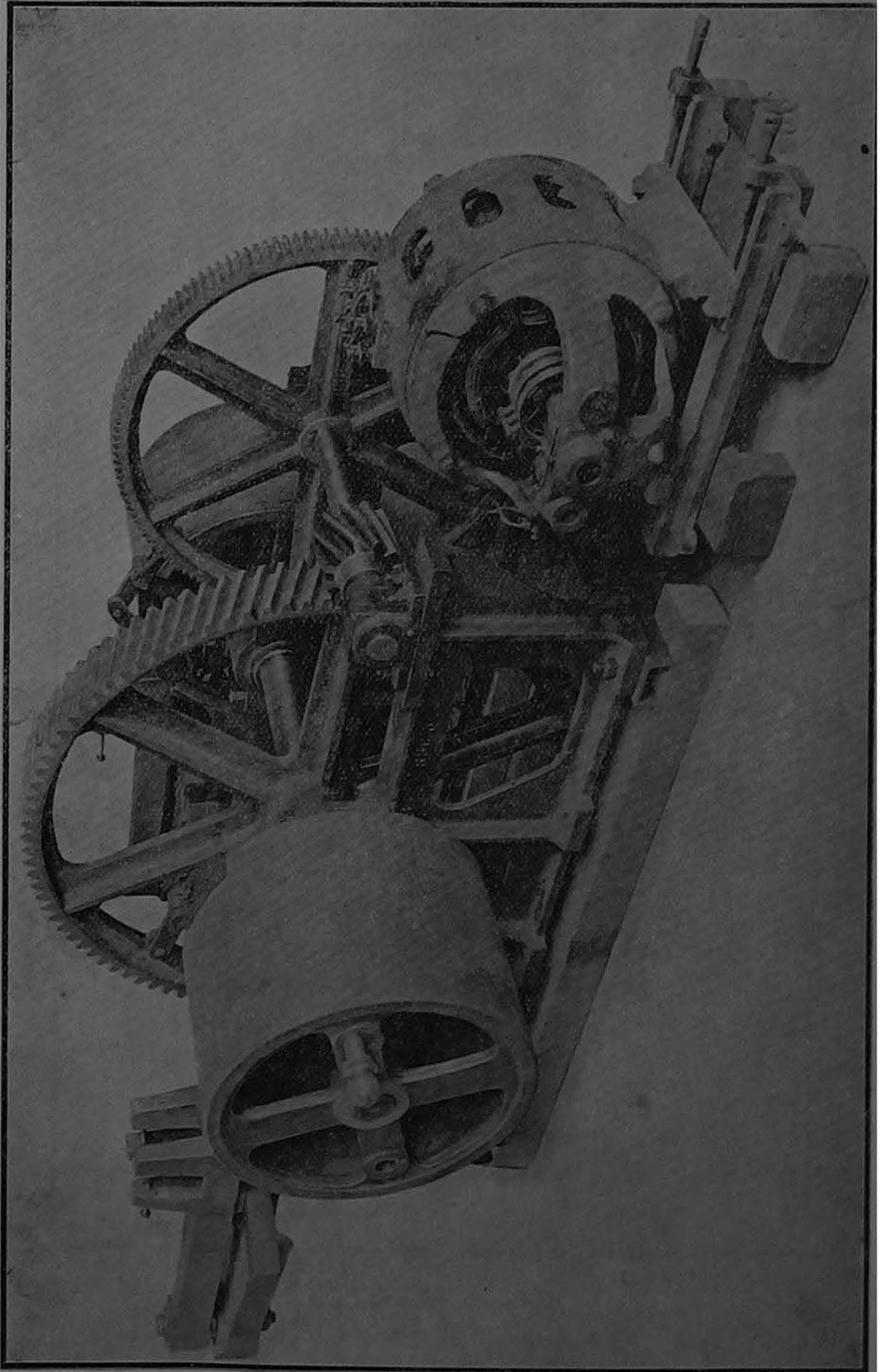
For particulars see the description of Fig. IX-A.

**FIG. X.—A Continuous Wire Drawing Machine for Coarse Wires.
(Hattersley-England)**



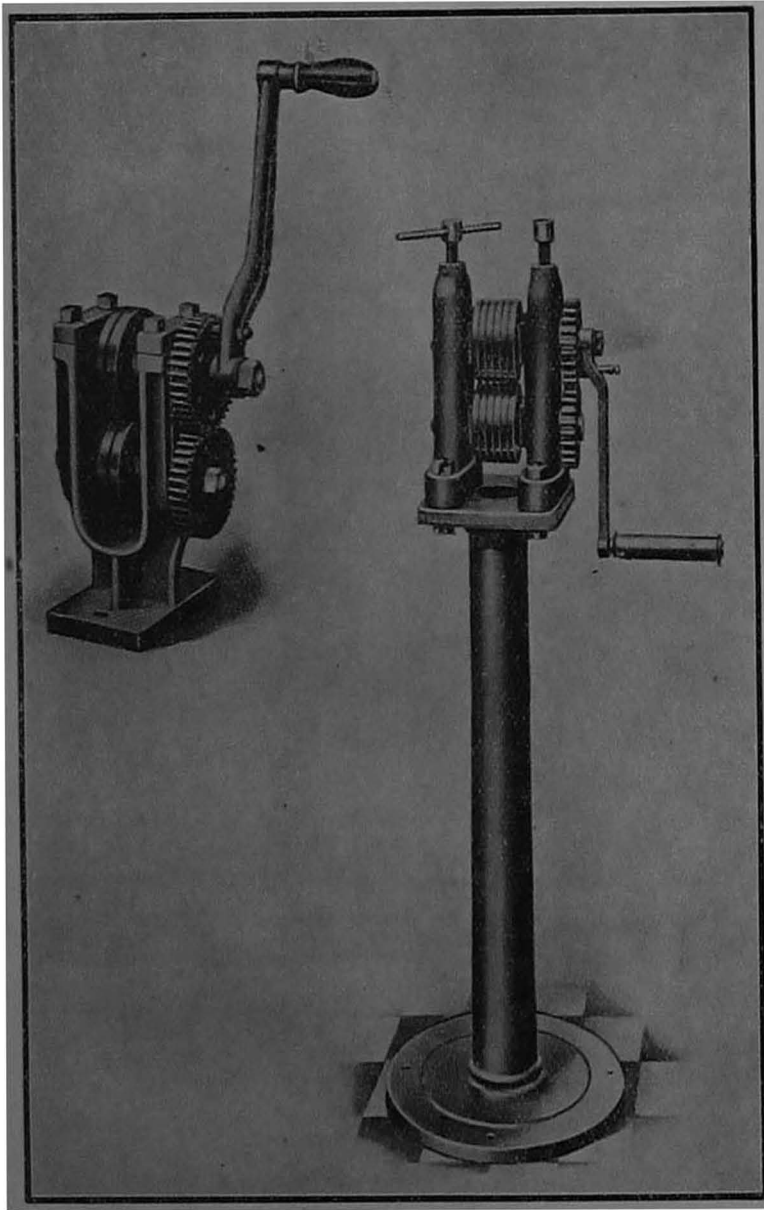
For description see Fig. XIII.

FIG. XI.—A Single Horizontal Wire Drawing Block. (Brondel-France).



Bobbins are started by a hand lever, cut tooth gears ; general gearing effected by means of a fast and a loose pulley (without brake movement), or directly by means of an electric motor,

FIG. XII.—Hand Pointing Machines. (Robertson-England).



These machines are very generally used in wire mills, and form a simple and reliable adjunct in any wire mill plant.

They can be supplied on stand or separately for fixing on a bench. The rolls are suitably grooved, and made from finest cast steel, hardened, ground, and polished, and they can be adjusted as required.

FIG. XII-A.—Hand Pointing Machine. (Brondel-France).

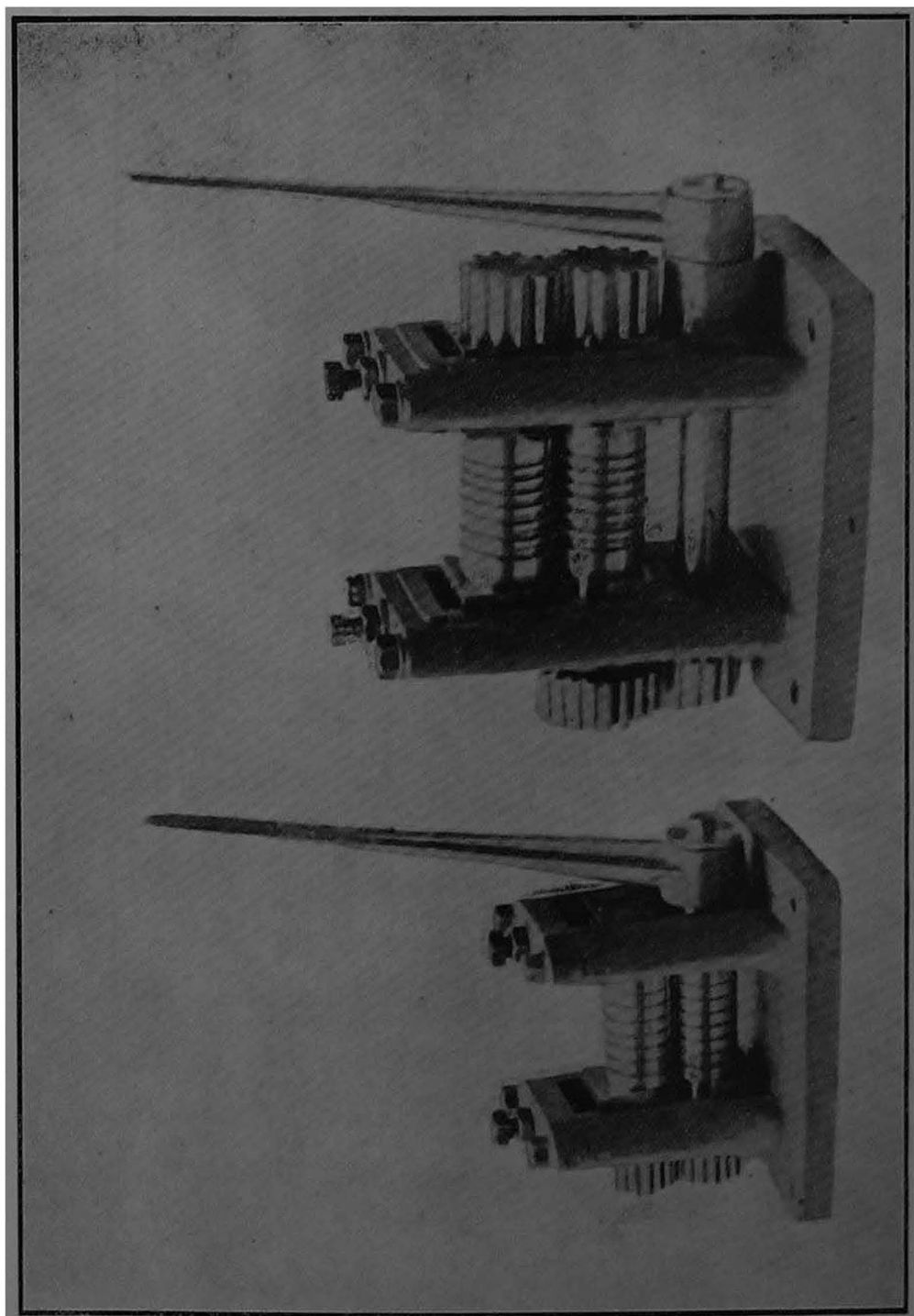
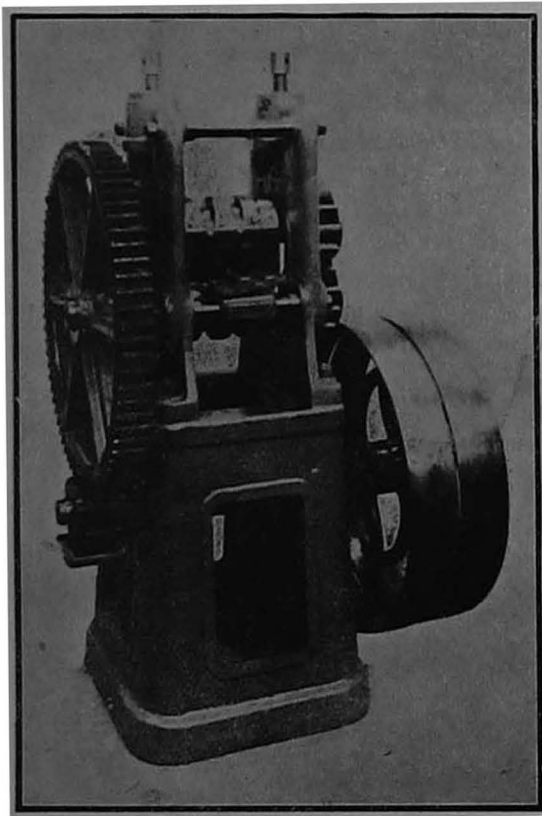


FIG. XII-B.—Power Pointing Machine. (Brondel-France).



Point making apparatus, with cylinders of 180 m/m and table of 360 m/m in length.

Dimensions : 1,250 x 900 millimeters.

Necessary motive power : 8 HP.

The construction of the proposed apparatus is similar to that represented in Fig. IV.

This apparatus is mounted on a base which is fastened directly to the floor, thus avoiding special brick-work.

The machine is driven by means of fast and loose pulleys, moving a set of cut tooth-gears. It may also be driven by means of an electric motor, requiring in this case a supplementary set of cut tooth-gears.

The frames of solid construction are made of cast iron. The journal boxes of hard bronze are greased automatically, as well as the bearings of the driving gear.

The cylinders, of special steel, are geared reciprocally by means of cut steel toothed pinions. They are provided with eccentric grooves in order to permit the introduction of the rod, to which a point is to be made. The rod is then pushed back towards the workman, as the sense of rotation is opposite from that of the cylinders of ordinary flattening mills.

The lifting of the upper cylinder is obtained by means of a central spindle, acting upon two gears, mounted on the same axle as the fastening screws.

FIG. XIII-A-D.—Multiple Wire Drawing Machines. (Brondel-France).

One Machine V.B. for 13 Drawplates, finishing on metal bobbins containing 5 kilogramms of wire, drawing 9/10 millimeter wire in 25/100 millimeter wire, with fixed lubricant vat.

Single model, requires 3 HP.

One steel bobbin containing 5 kilos.

One Machine V.B. 1 for 13 Drawplates, finishing on a conish drum 200 millimeters diameter, minimum diameter allowed on conish drum : 4/10 millimeter, with fixed lubricant vat.

Single model, requires 3 HP.

When the admitted wire is over 9/10 millimeter, and up to 12/10, requires 5 HP.

For lifting movement of the lubricating vat by hand lever.

For mechanical parts of machines allowing to transform a machine V.B. 1, finishing on bobbin in a machine V.B. 1, finishing on vertical conish drum.

The unfitting and fitting is easy.

One Machine V.B. 2 for 17 Drawplates, finishing on metallic bobbins containing 1,5 kilogramm, drawing silver wires from 25/100 to 6/100 millimeter.

Double model.

Strength 3 HP.

On steel bobbin containing 1,5 kilogramm.

One Machine V.B. 3 for 13 Drawplates, finishing on metallic bobbins containing 0,5 kilogramm, drawing silver from 6/100 to 3/100 millimeter.

Double model.

Strength 2 HP.

One aluminium bobbin containing 0,5 kilogramm.

FIG. XIII-A.—V.B.1 Multiple Wire Drawing Machine, 7 Drawplates. (Brondel-France).

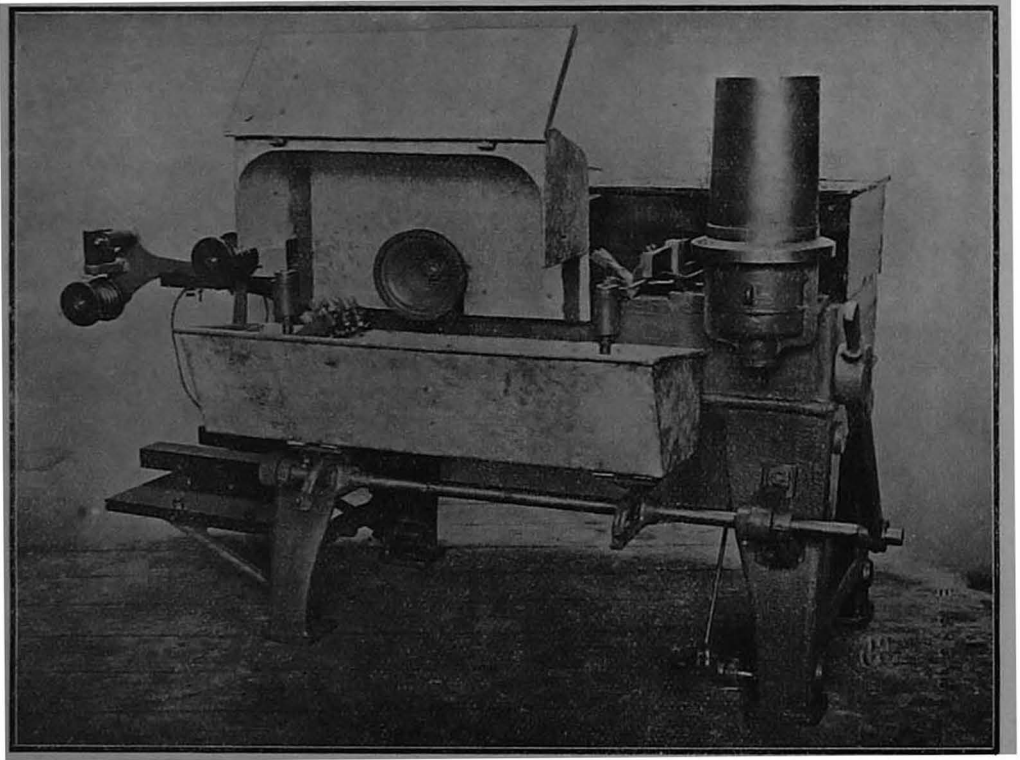


FIG. XIII-B.—V.B.1 Multiple Wire Drawing Machine, 13 Drawplates. (Brondel-France).

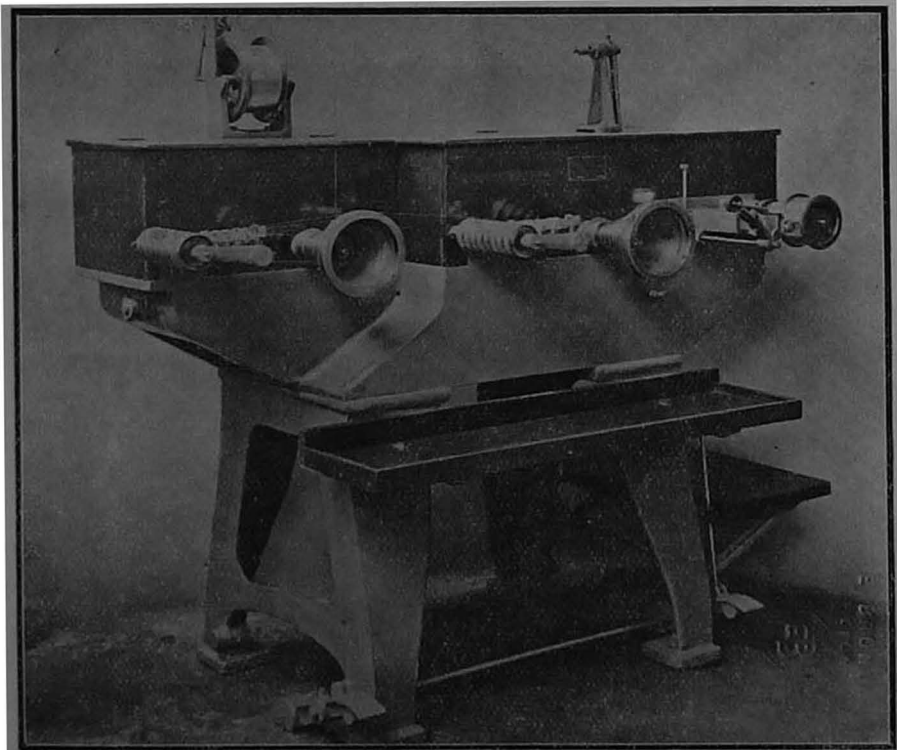


FIG. XIII-C.—V.B.2 Multiple Wire Drawing Machine, 5 Drawplates. (Brondel-France).

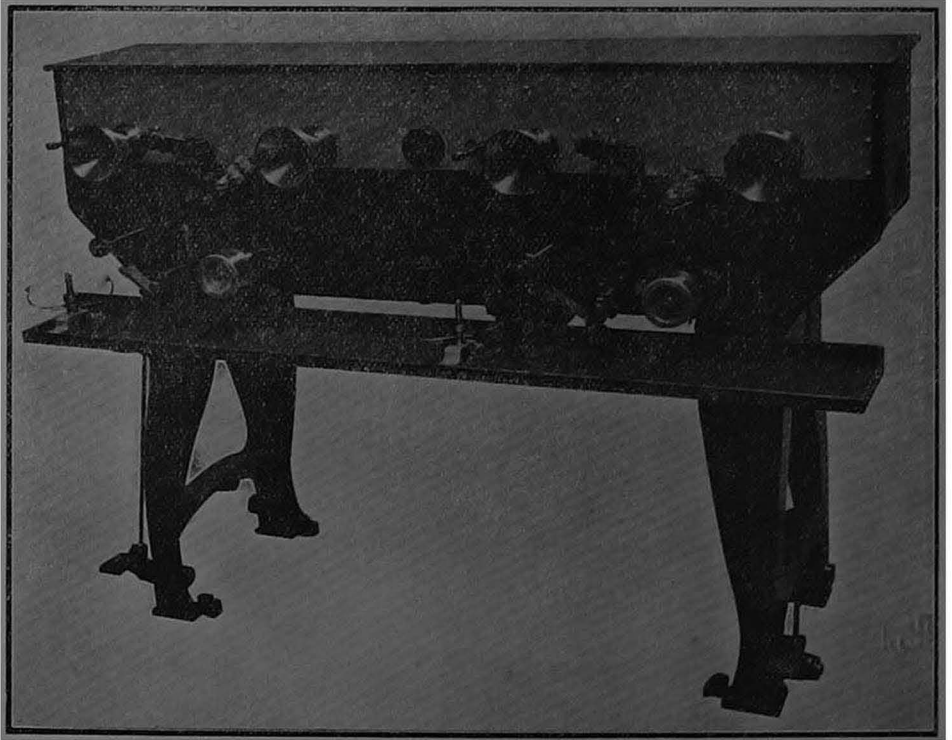
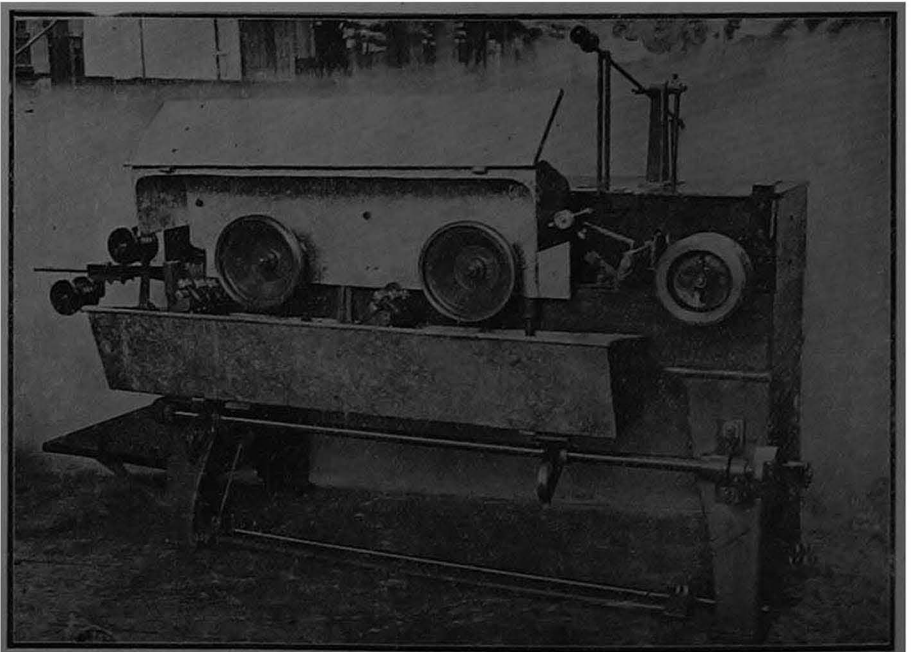


FIG. XIII-D.—V B.3 Multiple Wire Drawing, 7 to 13 Drawplates. (Brondel-France).



FIGS. XIII-E & F—English Multiple Wire Drawing Machines. (Robertson-England).

FIG. III-E.—

Cone Machine, No. 1.

Continuous wire drawing machines or cone machines are designed to draw wires from I.W.G. 8 to 48. They are in four types, the first and the last are illustrated here.

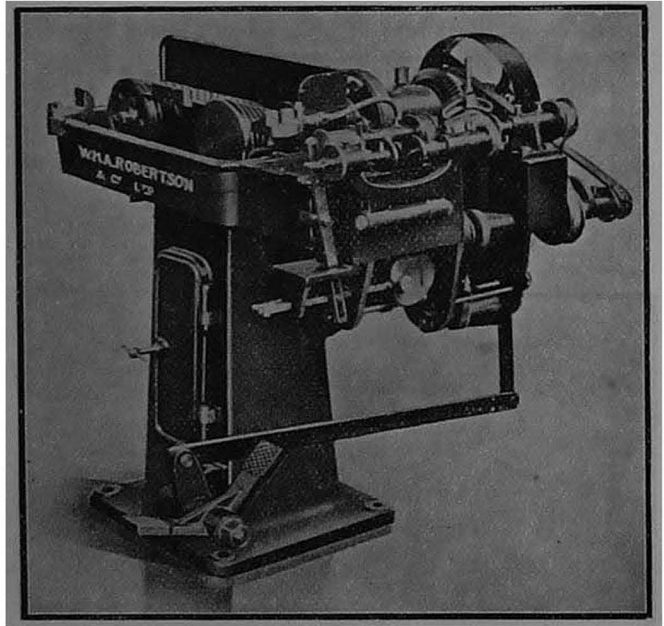


FIG. XIII-F.—Cone Machine, No. 4.

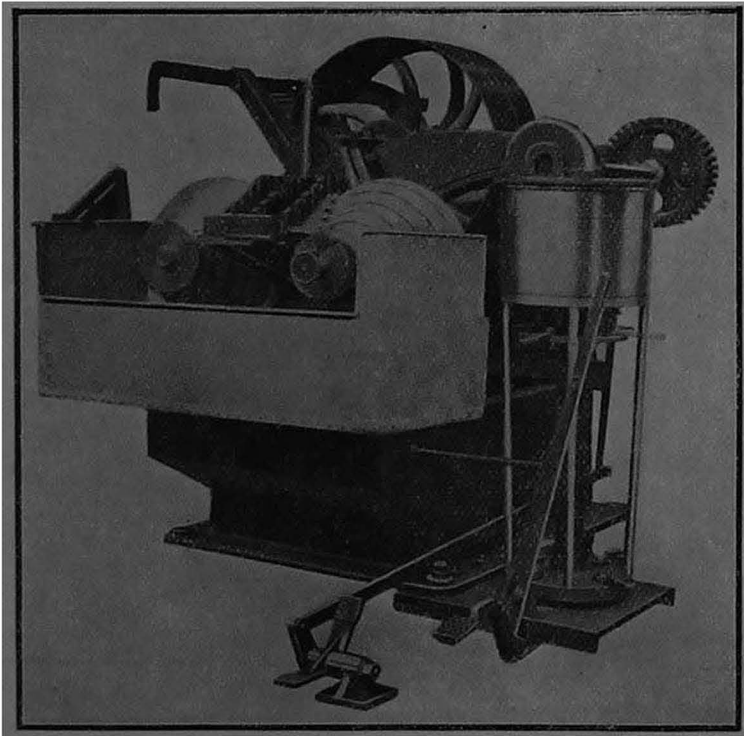


FIG. XIII-G.—A Multiple Wire Drawing Machine. (Hattersley—England).

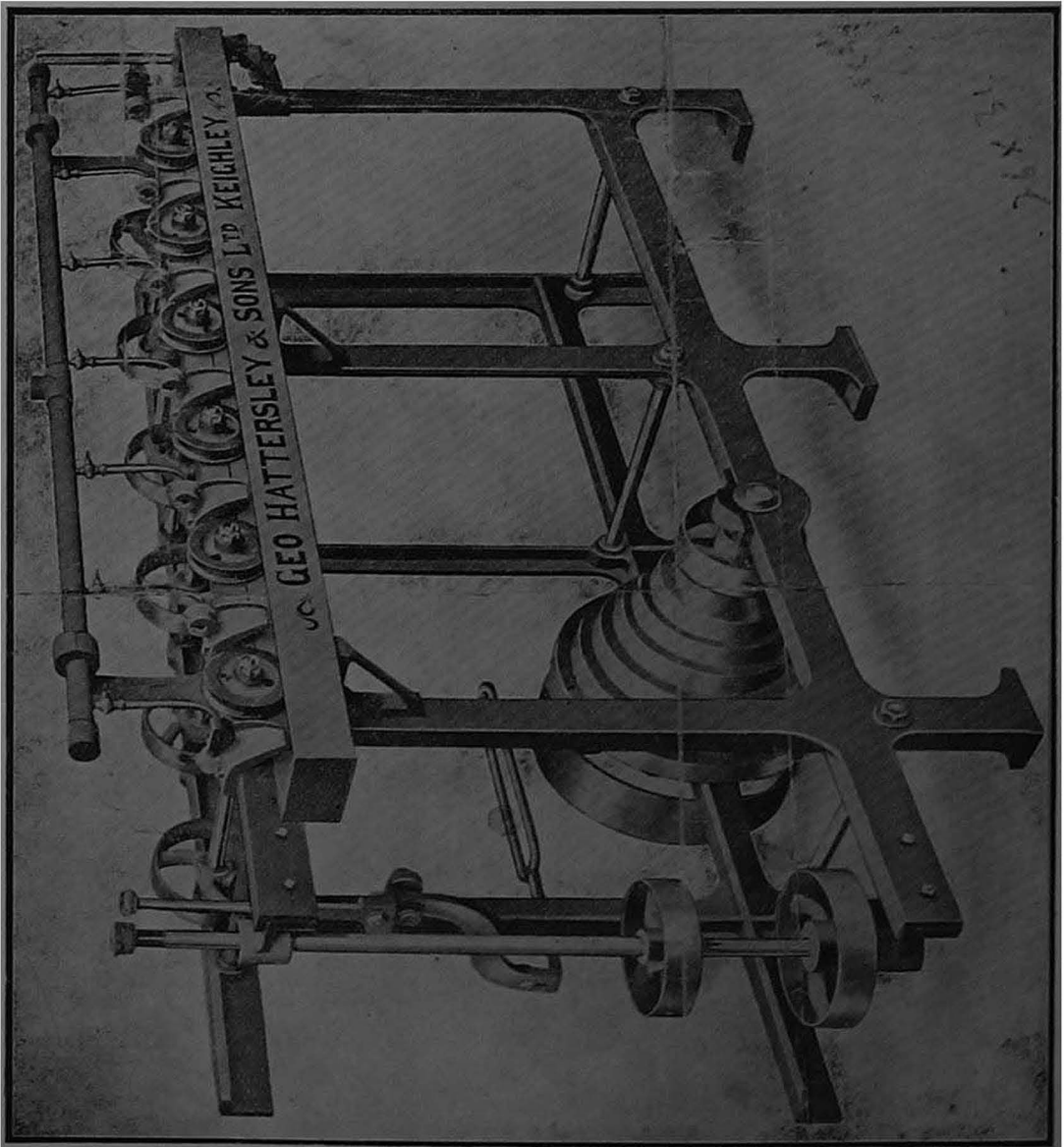
This machine is made with strong iron framing in various lengths from 4 to 16 spindles.

The driving shaft runs in bronze bearings and is fitted with fast and loose pulleys, six stepped cone and small pulley for driving swift shaft.

The feed bowls are made from chilled cast-iron, and are driven at various speeds from the stepped cone.

The die holders and lips are securely fixed to top of framing, and a feed lubricating pipe with independent taps and spouts is provided, a trough with overflow outlet taking away the surplus liquid.

Approximate weight,	6 spindle machine	.. 3½ cwts.
Floor space	6 spindle machine	.. 5ft. 9 in × 1 ft. 10 in.



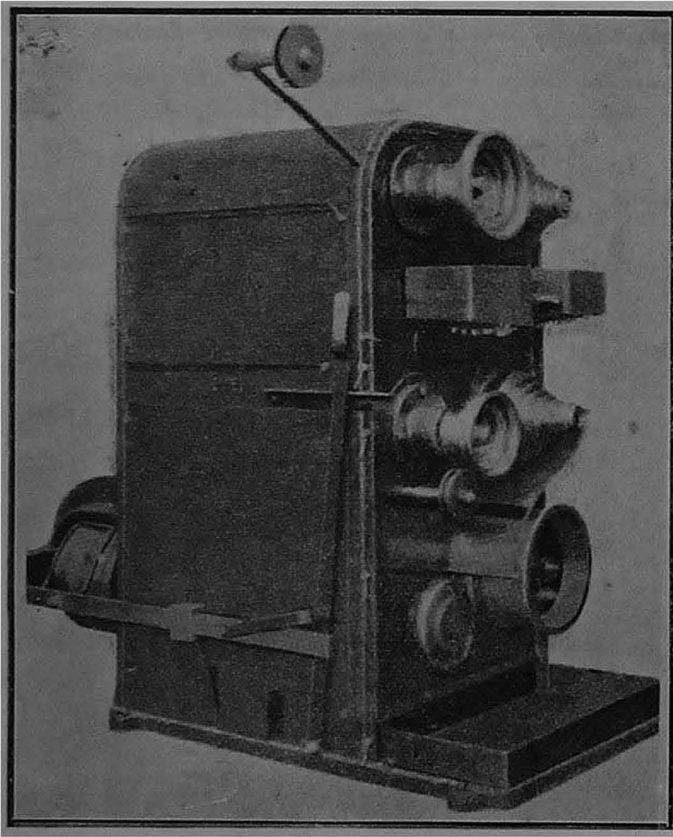


FIG. XIII-H.—

A Multiple Wire Drawing Machine—13 Drawplates. (Breguet—Switzerland).

BREGUET MACHINES

A few types of new wire drawing machines have been constructed in Switzerland. They are based on the principle that though the wire is drawn at a great linear velocity, the wires are cooled by a patented process in such a way that it produces in its operation automatic annealing. This advantage allows the drawing of metals at a very high rate without damage to drawplates, and the winding of the wire without difficulty in spite of the large linear speed employed. Besides, thanks to the phenomenon of annealing or softening referred to above, the wire which does not increase in hardness becomes less brittle and permits the use of multiple machines even for fine wires.

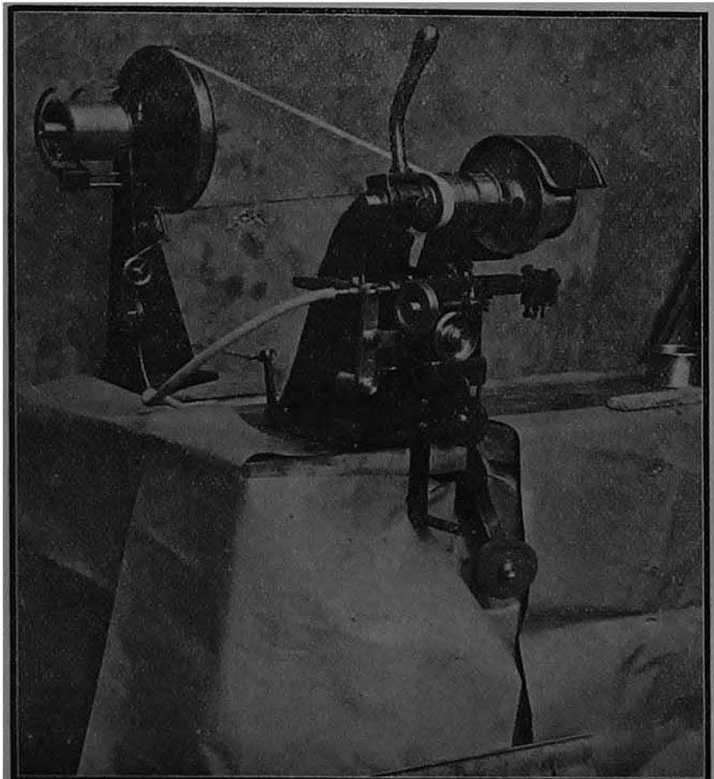


FIG. XIII-I.—

A Multiple Wire Drawing Machine—3 Drawplates. (Breguet—Switzerland).

FIGS. XIV-A TO C.—Simple Wire Drawing Machines. (Brondel—France).

Single Drawing Machine Type M.B.S. 1 for wires from 9/10 to 25/100 of millimeter drawing bobbins containing 5 Kgs. Could be constructed in benches of 2 to 6 heads.

Controlled unrolling as shown on the photograph; the speed of the unrolling bobbin being regulated by means of a cone controlled by the wire itself, passing over a gear roller supported by a lever called "pantin."

Production 2 kilogramms per hour of wires from 9/10 to 25/100 millimeters.

Single Drawing Machine Type M.B.S. 2 for wires from 25/100 to 5/100 millimeter finishing on bobbins containing 1.5 Kgs. Could be constructed in benches of 5 to 10 heads, with controlled unrolling.

Single Drawing Machine Type M.B.S. 3 for wires of 5/100 millimeter and less, finishing on bobbins containing 0.500 Kg. is made also in benches of 5 to 10 heads, with controlled unrolling.

FIG. XIV-A.—Simple Wire Drawing Machine. M.B.S. 1. For Wires 9/10 to 25/100 m/m.



FIG. XIV-B.—A Simple Wire Drawing Machine, M.B.S. 2 and M.B.S. 3 types.
For wires 25/100 to 6/100 and 6/100 to 3/100 m/m.

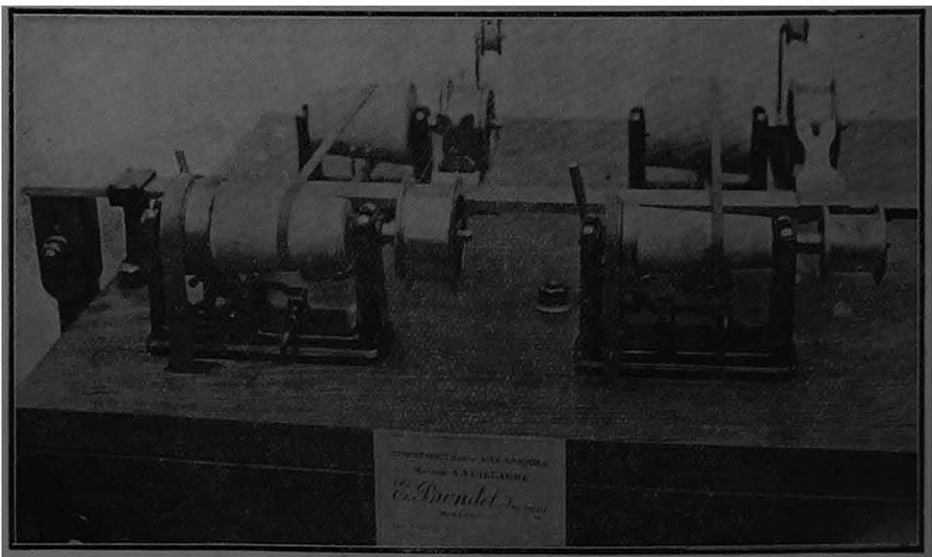


FIG. XIV-C—Simple Wire Drawing Machine—Combined M.B.S. 1 and M.B.S. 2 type.

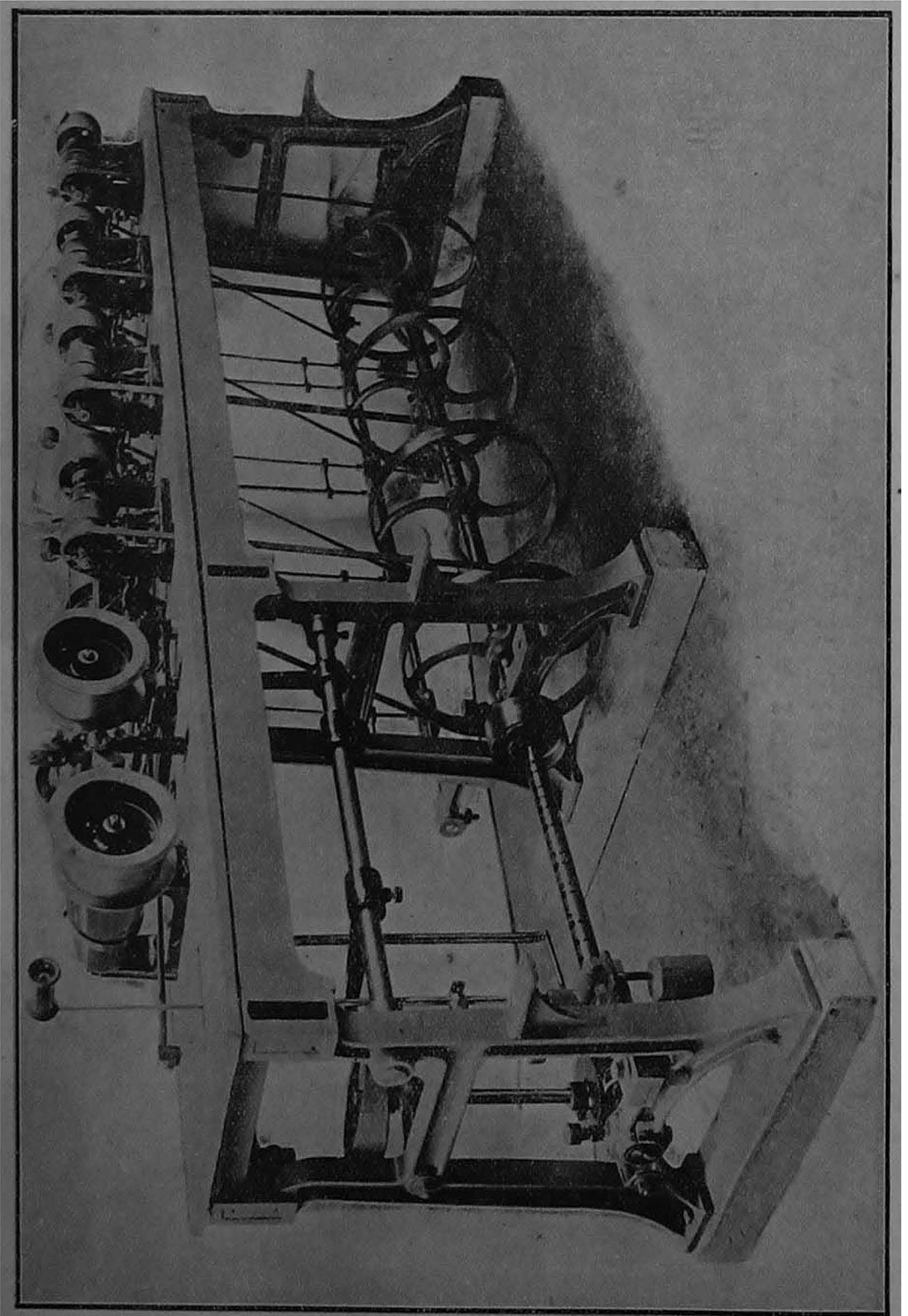
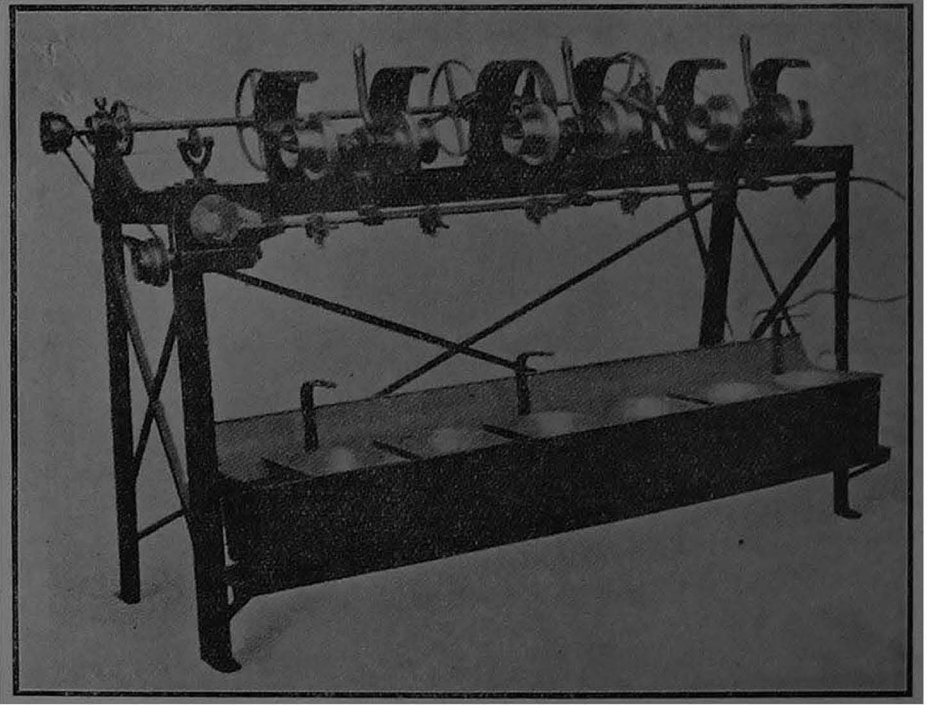
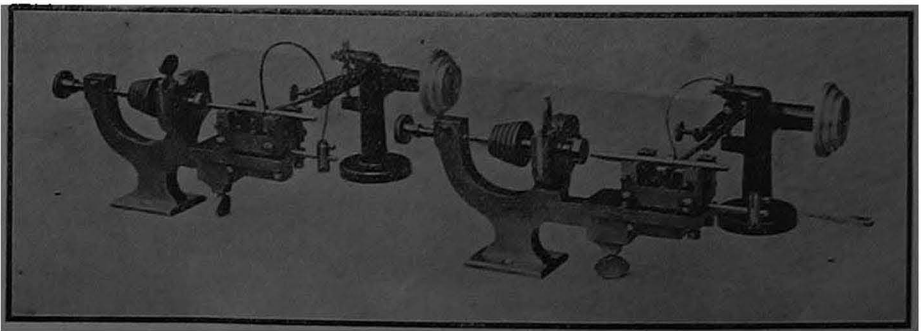


FIG. XIV-D.—A Simple Wire Drawing Machine. (Breguet—Switzerland).



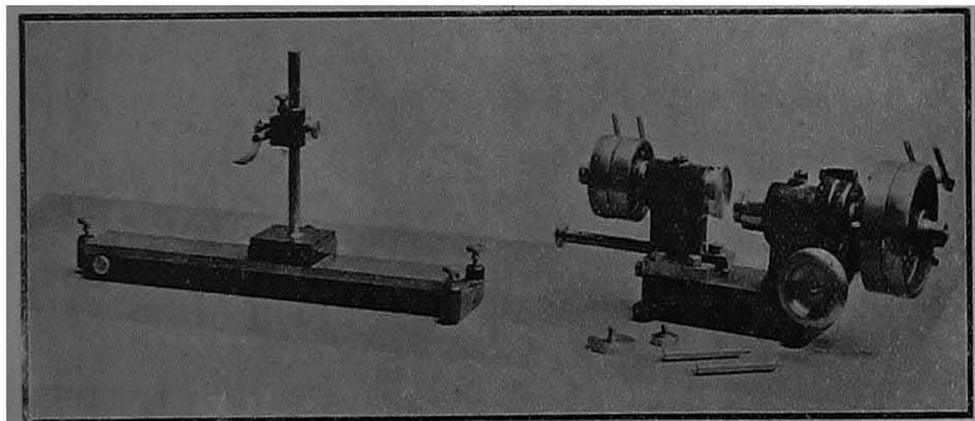
(For particulars *vide* description under XIII-H)

FIG. XV.—An Automatic Diamond Die Polishing Machine. (Brondel—France).



The point of the needle which has horizontal and circular movements grinds the holes. It is so adjusted that it neither jumps nor vibrates.

FIG. XVI.—A Machine for Flattening Rough Diamond Stones. (Brondel—France).



This apparatus is utilized in the following manner. A number of stones are placed on the large disc and one or two larger stones on the small disc.

Whilst these eccentric discs are turning the stones are wearing themselves one against the other, by approaching the 2 discs by means of a hand wheel, shown on the fore ground of our photograph.

Turning speed of the large disc : 100 revolutions a minute.

Turning speed of the small disc : 40 revolutions a minute, in the same direction.

FIG. XVII.—Lathes for making Centre Points on Diamond Stones. (Brondel—France).

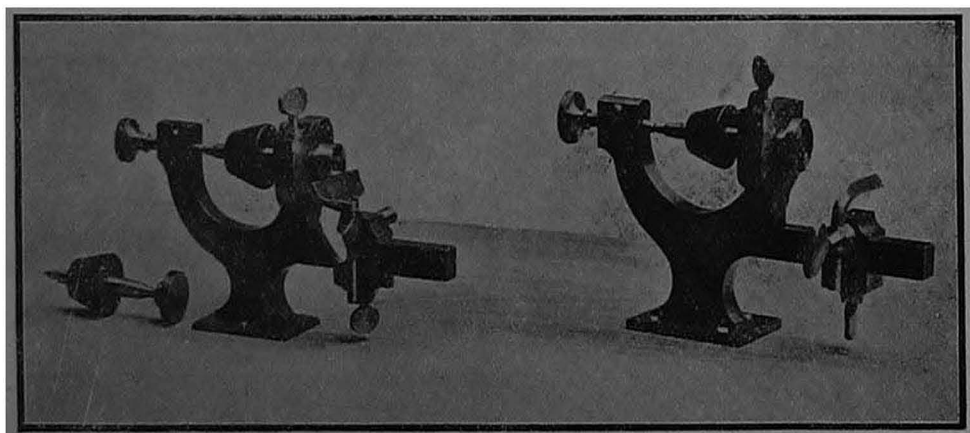


FIG. XVIII.—Vertical Lathes for Boring Holes in Diamonds. (Brondel—France,.)

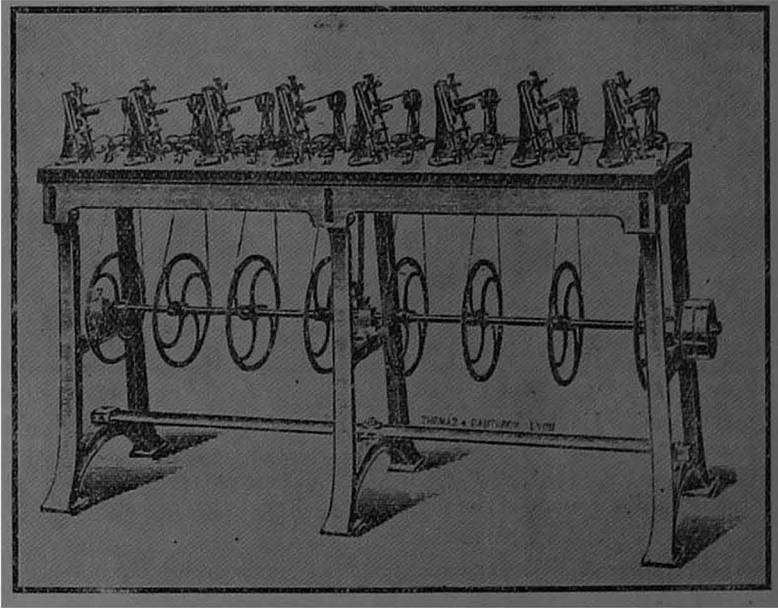
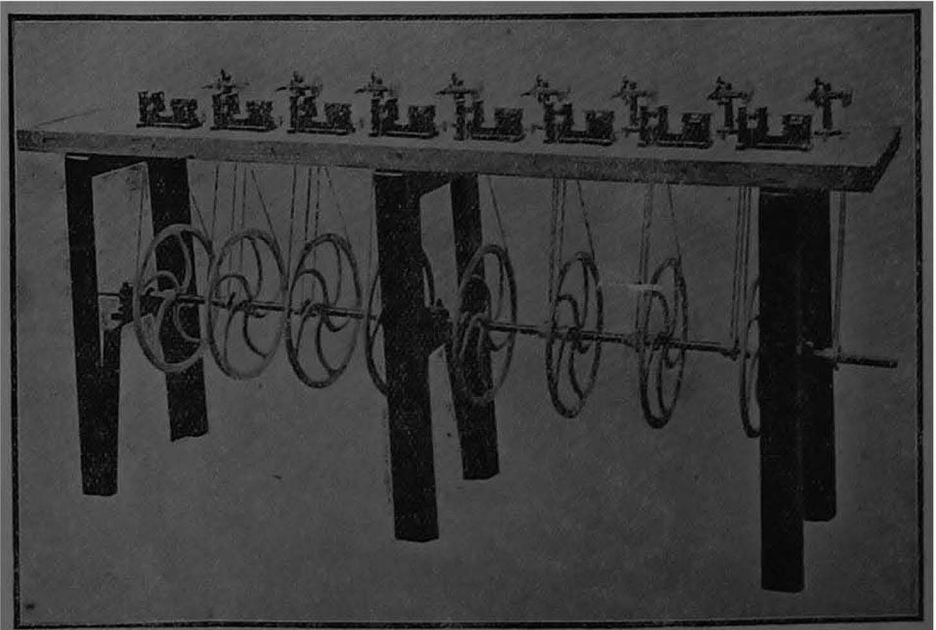


FIG. XIX.—Horizontal Lathes for Boring Holes in Diamonds (Brondel—France).



Horizontal lathes are specially designed for very narrow holes and possess high accuracy and are easy of managing. The main shaft turns at a speed of 500 revolutions, and being entirely isolated it does not produce any vibrations on the boring lathes.

FIG. XX.—A Polishing Lathe for Diamond Holes. (Brondel—France.)

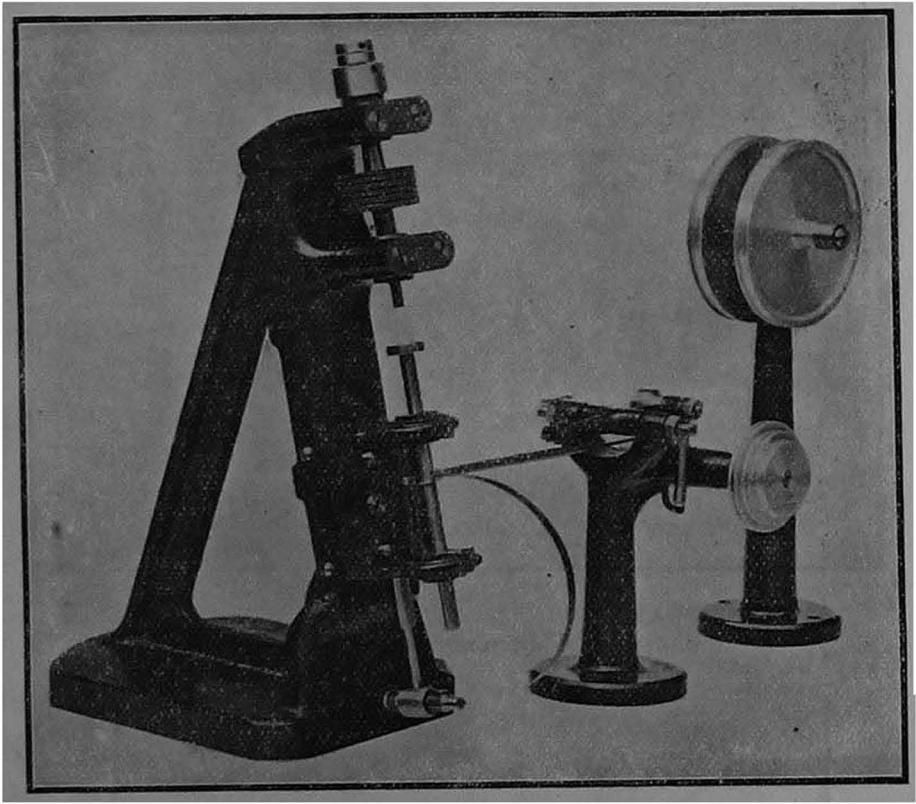


FIG. XXI.—A Power Spooling Machine. (Brondel—France).

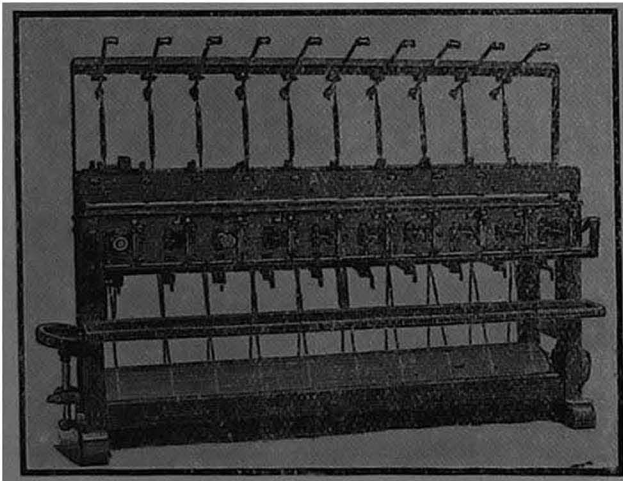


FIG. XXII.—Flattening Wire by Hand.

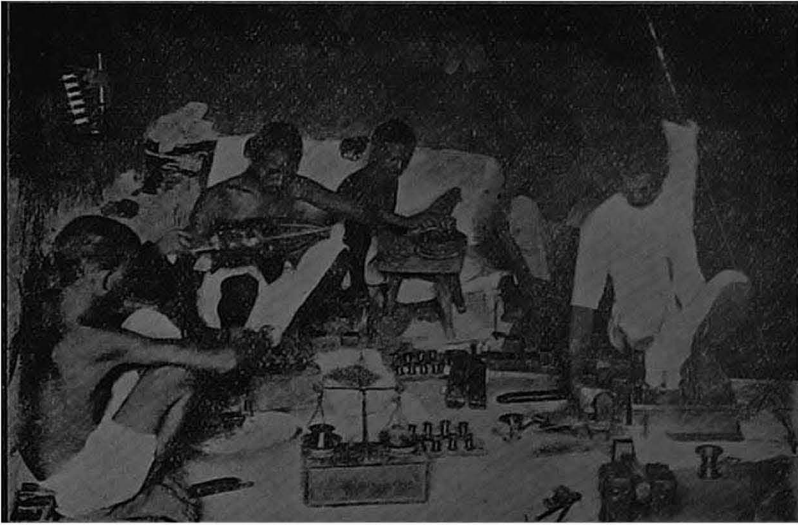


FIG. XXIII.—Flattening Wire by Machinery.

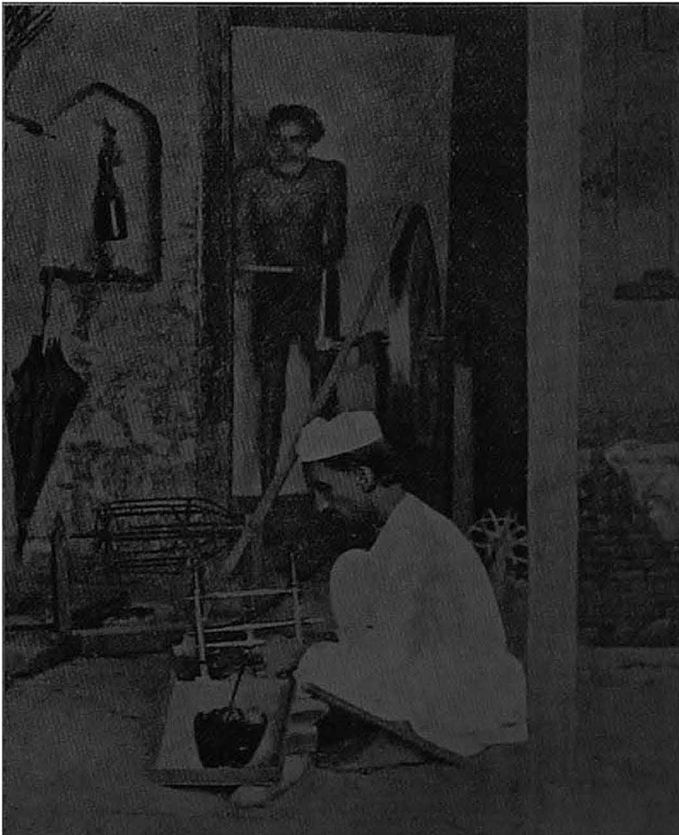


FIG. XXIV.—Wire Flattening by Machinery.

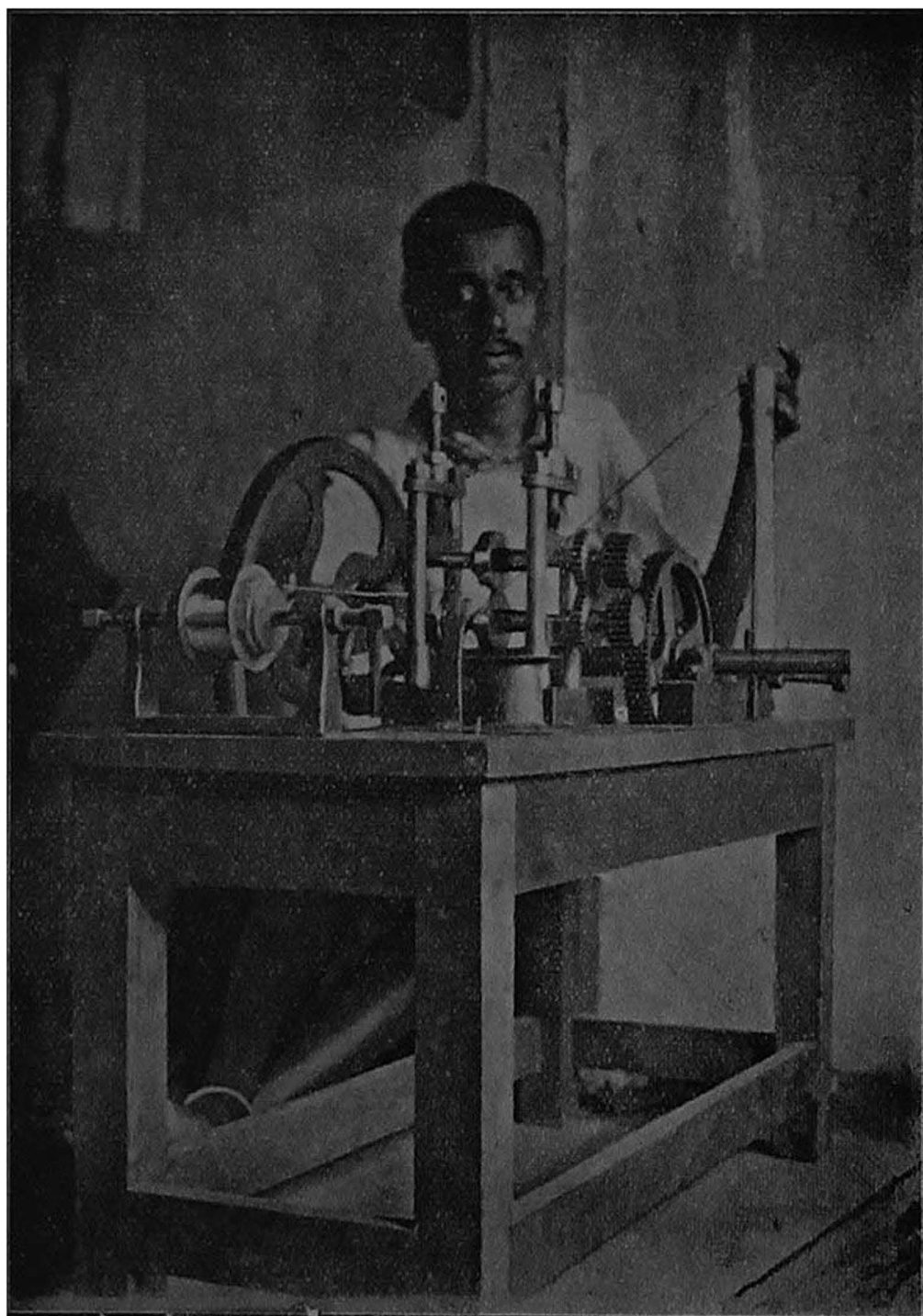


FIG. XXV.—A Single Wire Flattening Mill. (Brondel—France).

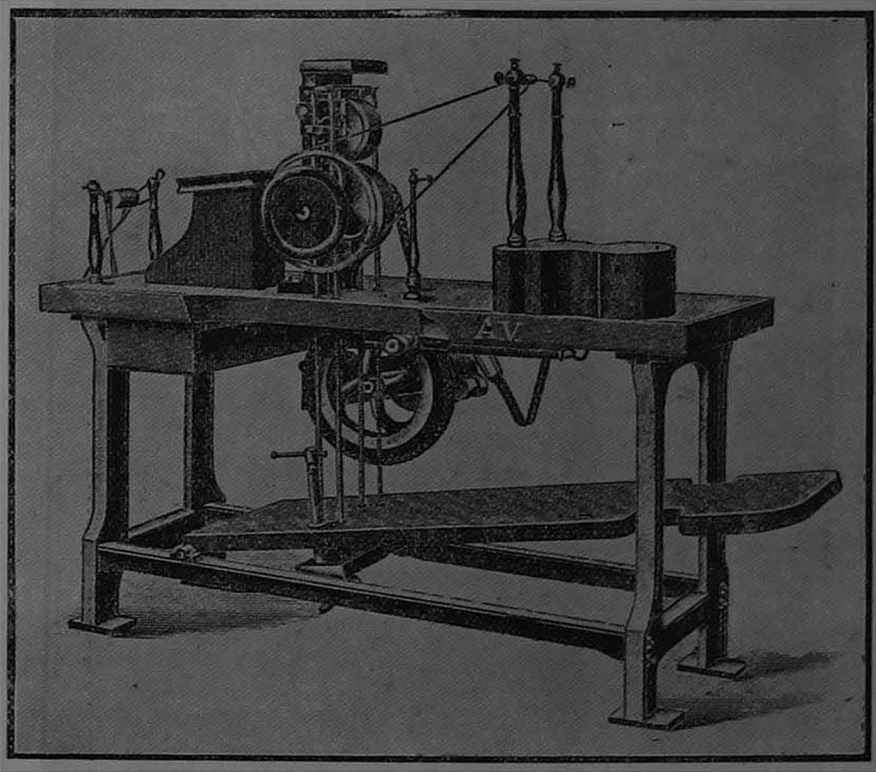
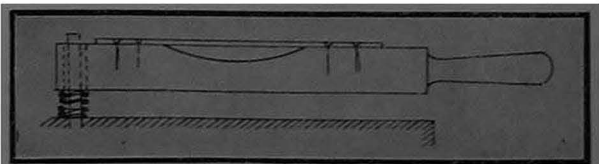
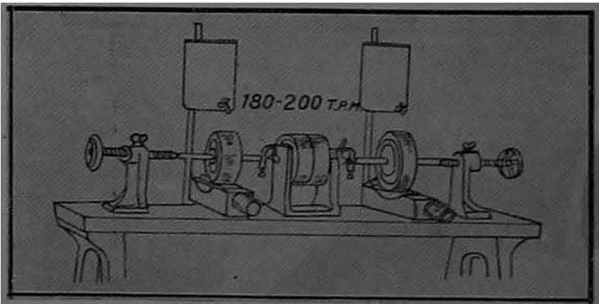


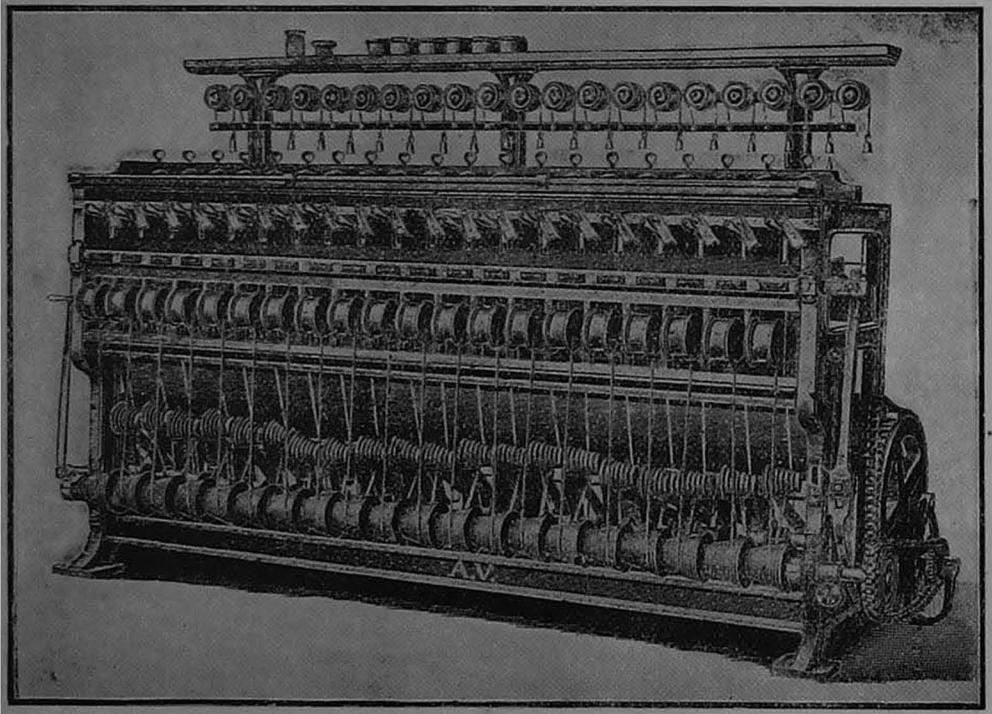
FIG. XXVI.—A Roll Polishing Machine. (Brondel—France).



The table allows the cleaning of two rollers settled between the points and drives by the fingers. For rough polishing use is made of the whipper, lined with chamois leather and lubricated with oil and English red powder (rouge anglais).

After use the whippers are cleaned with benzine. For finishing in giving the brightness it is made use of whippers, lined with buffalo leather lubricated with water by means of little cans with taps. On the leather is put some putty. After use the buffalo leathers must be kept in water. Under the whippers are placed little spiral springs and with the hand one moves the whipper from right to left and contrary so as not to make circular lines.

FIG. XXVII.—A Metallic Thread Spinning Machine. (Brondelet—France)



These spinning machines are sold complete with spindles and one set of bobbins.
 Number of revolutions of the spindles : About 6,000 a minute.
 Production per thread—For an article requiring 20 revolutions for $\frac{1}{4}$ of an inch, *i.e.*, for a medium size, the practical production realised is of 5 feet a minute.
 Power necessary for 30 spindles machine— $\frac{1}{2}$ HP.
 Each thread is independent and may be stopped separately without stopping the others.

FIG. XXVIII.

A Machine for Making
 Ordinary Flat Braids.
 (Korting—Germany).

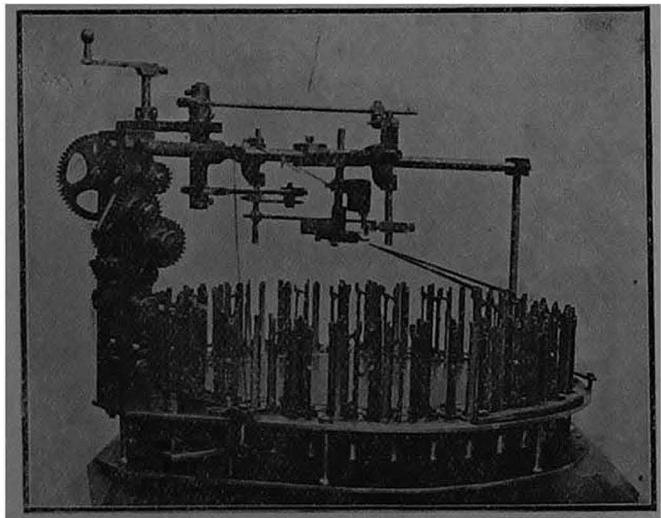


FIG. XXIX.—A Machine for Making Tubular Braids. (Korting—Germany).

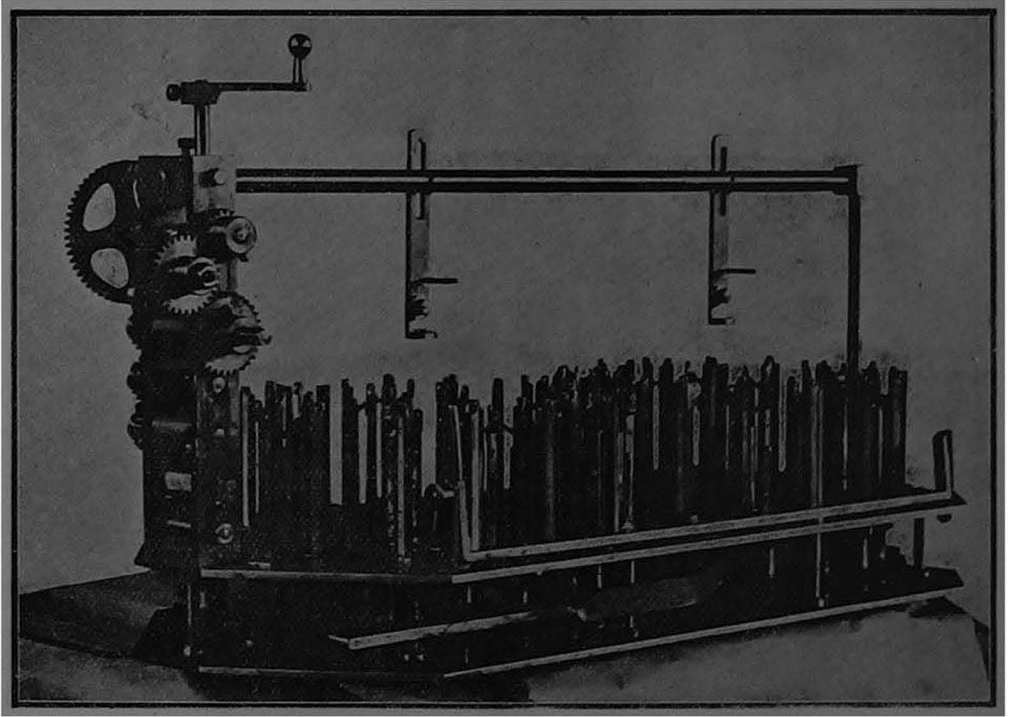
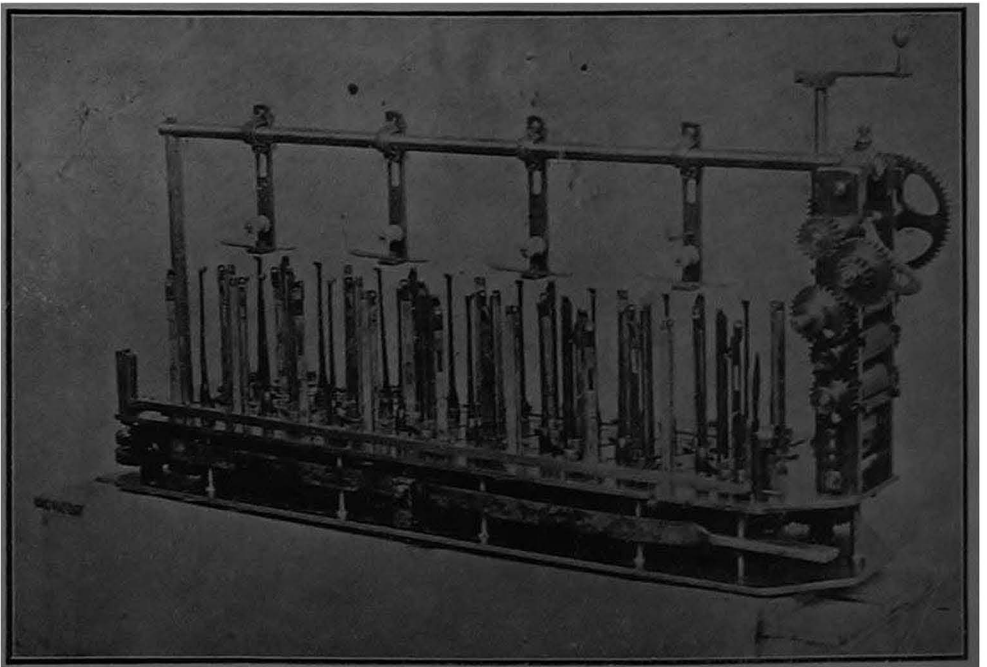


FIG. XXX.—A Passmentarie Machine. (Korting—Germany).



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BOMBAY PRESIDENCY INCLUDING SIND FOR
THE YEAR 1922-23.**

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No. A. D. -124.

Poona, 7th January 1924.

From

F. G. H. ANDERSON, Esq., M.A., I.C.S.,
Settlement Commissioner and Director of
Land Records;

To

THE SECRETARY TO GOVERNMENT,
Revenue Department, Bombay.

Sir,

I have the honour to submit the Annual Report of the Land Records Department for the year ending 31st July 1923.

CHAPTER I.

Prefatory.

1. The charge of the Department was held by Mr. A. W. Mackie, I.C.S., from 1st August to 4th December 1922 and by me for the rest of the year.

2. *Superintendents of Land Records.*—These posts in the three Divisions were held as follows :—

Northern Division—Mr. C. D. Kavi—1-8-22 to 3-5-23 and
15-6-23 to 31-7-23; Mr. M. P. Desai—
4-5-23 to 14-6-23.

Central Division—Mr. V. B. Mardhekar—throughout the year.

Southern Division—Mr. E. Gawan Taylor, I.C.S., 1-8-22 to
1-5-23; Rao Saheb D. B. Nesarikar—
2-5-23 to 31-7-23.

3. *Touring.*—I toured in the Districts of Ahmedabad, Kaira, Broach, Surat, Thana, East Khandesh, West Khandesh, Nasik, Ahmednagar, Poona, Satara, and Kolaba. The Superintendent of Land Records, Northern Division, toured for 140 days in all Districts, camping in 25 talukas. Superintendent of Land Records, Central Division, toured for 125 days in six Districts, camping in 16 talukas, and Superintendent of Land Records, Southern Division, toured for 114 days in all Districts of his Division. Besides the routine inspection of villages, Circle Inspectors and Taluka daftars,

special attention was given to city, pot-hissa, and Inam surveys and all measurement work performed by Cadastral Surveyors.

CHAPTER II.

Land Records Establishment.

4. The main function of the Department is to maintain all survey and classification records up to date, and for this purpose to carry out the necessary field operations preliminary to incorporating changes in these records. It has further to organise and carry out rural and city surveys on an extensive scale and maintain them in a state of usefulness. Special surveys for private individuals or bodies such as relate to Inam villages, etc., and surveys on behalf of other departments of Government are also frequently undertaken. The supervision of the preparation and maintenance of the Record of Rights, and the periodical inspections of boundary marks also fall within the scope of the Department.

5. The separation of the District Inspectors of Land Records into an independent cadre and the experimental amalgamation of the District Inspector's post of Panch Mahals with that of Kaira, and the one of Broach with that of Surat as a measure of economy; also the transfer of city survey maintenance surveyors, District Surveyors and Cadastral Surveyors to the control of the Land Records Department are some of the noteworthy events of the year.

6. Owing to continued financial stringency, the usual field party grants were withheld during the financial year 1922-23, and the permanent men of these parties had to be detailed on pot-hissa, city survey, and other works paid for by fees and not out of the budget. The grants have been partly restored for the financial year 1923-24, and a small party of surveyors has been organised in the Central Division since June 1923, which has so far been able to complete the recess work of 9 out of the 22 Inam villages, remaining in arrears since 1921.

Training of Junior Civilians, etc.

7. Six Assistant Collectors and two Deputy Collectors were trained in survey and settlement matters.

District Survey Offices.

8. The outturn of the Central Record Office at Ahmedabad continued to be satisfactory both in quality and quantity. The number of correction cases on hand at the end of the year was 159, the figure for the previous year being 126—a condition by no means unsatisfactory, considering that four places were kept vacant during the year. The number of correction cases disposed of was 1,570 as

against 1,163 last year. Rs. 889 were realised for supplying extracts from survey records and sale of maps. Tallying of Akarbands with the abstracts of village form I was completed in five villages, leaving only nine villages in arrears in the Division.

Thana District Survey Office disposed of 171 cases of correction and the arrears at the end of the year were 131 cases. The corresponding figures for the previous year were 307 and 32 respectively. The shorter outturn of the year is due to the separation of the Bombay Suburban District and a reduction in the correction staff. Rs. 427 were realised for supplying extracts from survey records and sale of maps. Both these offices were inspected by the Superintendent and the Settlement Commissioner.

9. District Survey Offices in the Central Division disposed of 1,504 correction cases as against 1,629 of last year, leaving 205 cases in arrears as against 72 of last year. The reason for this increase of arrears is that last year the Cadastral Surveyors helped the District Survey Offices, in the rains, in correction work. This year the Cadastral Surveyors had many measurement cases and so they were employed in disposing of them in rains also and thus could not help the District Survey Office staff as usual. The Superintendent of Land Records inspected all the offices except Nasik. The Settlement Commissioner inspected the offices at Nasik, East and West Khandesh, and Ahmednagar.

10. In the Southern Division, the District Survey Offices disposed of 2,670 correction cases as against 2,072 of last year, leaving 1,007 cases in arrears as against 1,048 of last year. Work in these offices is increasing in respect of all kinds of cases mainly due to Hissa Survey maintenance in all districts except Kanara, where the increase is due to correction work of Betta assignments. The Superintendent inspected all the offices and the Settlement Commissioner inspected the office at Kolaba. Arrangements are being made to cope with the arrears in the Southern Division and Thana.

District Inspectors.

11. Statement IV shows the routine work of these officers. Comparing with last year the amount of Inspection work has greatly diminished in all respects. This is due to orders to restrict their inspection to villages in vicinity of those they have necessarily to go for technical work. Surat and Broach were in charge of one District Inspector as also Kaira and Panch Mahals.

12. The work of Messrs. Moghe (Thana), Shukla (Surat), Joshi (Sholapur), Vellal (West Khandesh), and Tiliu (East Khandesh) is specially commended by the Superintendents of Land Records.

In this the Director of Land Records concurs. The work of two or three District Inspectors has not been satisfactory : but disciplinary action can now be taken by the Director and has been taken. We have also got rid of some unsatisfactory men.

Measurement Work.

13. The following statement will show the establishment employed, its outturn and financial position :—

Division.	Strength of		Survey Nos. and Hissas measured.		Fees earned including Government work.	Cost of establishment.
	Cadastral Surveyors.	District Surveyors.	Private.	For Government.		
Northern Division...	17	6	New Hissas 10,704; Survey Nos. 1,425.	Survey Nos. 809.	Rs. 16,013	Rs. 14,369
Central Division ...	45	7	New Hissas 15,365; Survey Nos. 4,493.	Hissas 894; Survey Nos. 3,238.	89,000	46,645
Southern Division...	33	6	New Hissas 18,983; Survey Nos. 4,135	Hissas 460; Survey Nos. 2,758.	38,243	45,680
	25 (temporary.)					

14. In the Northern Division there is a net gain of Rs. 3,025 and so the staff is self-supporting. In the Central and Southern Divisions there is a deficit of Rs. 7,546 and Rs. 5,438 respectively. This deficit is chiefly due to the high pay of District Surveyors. These are supervising officers checking the work of the Cadastral Surveyors and doing only important and intricate measurement work. In order to make the staff self-supporting, measurement fees were raised from January 1923. Some measurement work was therefore done on the old fee scale. It is hoped that the new fee scale will show better results next year. After all Rs. 10,000 is not much nett cost for the maintenance of 110 trained surveyors in the Presidency.

15. Statement II shows the outturn of measurement and classification work in each District. In the Northern Division, Kaira District deserves special mention for reducing the arrears in spite of increased work. Arrears have increased in Broach and Surat. The Division as a whole shows good progress.

16. In the Central Division the arrears are kept low; but still Ahmednagar, West Khandesh, Poona, and Sholapur show increased arrears. Special efforts should be made to reduce the arrears. The numbers of the staff are very modest.

17. In the Southern Division the arrears have been reduced; still the arrears have increased in Dharwar and Kanara. In Dharwar it is due to insufficiency of the staff. In Kanara one man had been on leave and quite a new man was appointed to act.

Circle Inspectors.

18. Statement I shows the work of these officials. Compared to last year some improvement is noticeable.

19. Statement III also shows improvement in the inspection work of Mamlatdars and Sub-Divisional Officers although their touring had been restricted. Now that restraints are no longer

imposed on touring, it is hoped the attention to village details will increase. They are the fundamentals of all our Revenue and Land Administration and cannot be neglected.

Boundary Disputes.

20. Two petty cases of boundary disputes with Baroda and Sachin were settled by the District Inspector of Land Records, Surat, under the special orders of the Collector, and one case between British Government and Portuguese Government was settled by the District Inspector of Land Records, Thana. The settlement of boundary disputes between British and Baroda territories was kept in abeyance, pending Government orders about a convention, which have been received recently and now require execution.

Measurement of Sub-Divisions.

21. During the past few years the work of measuring newly formed sub-divisions of survey numbers and of calculating the assessment on each of them has been in progress in all the Divisions of the Presidency. In Gujarat the work has been finally completed during this year. In Thana 20 villages of Shahapur Circle left over last year, 34 villages of Dolkhamb Circle and 50 of Kinhivali Circle were taken up. The total number of hissas measured and mapped was 36,891 as against 21,335 hissas in 201 villages measured during the previous year. The results achieved are highly creditable, considering the difficulties presented by the climate as well as the hilly character of most of the tract covered by the operations. In the whole Northern Division, only revision pot-hissa work in North Salsette now remains to be taken in hand. Rs. 4,035 remain to be recovered in Gujarat. In Thana, recovery statements for Rs. 30,205 were sent to talukas. Rs. 15,945 including past arrears were recovered. Rs. 15,109 still remain to be recovered.

22. In the *Central Division* there are 16 field parties and one head-quarter party distributed between Poona and Satara. Seventy-nine villages in the Poona District and 59 in Satara were taken up, the total number of new hissas measured and mapped being 230,617 as against 164,299 last year. In the Ahmednagar District the work is complete. Elsewhere it is in progress and will take about three or four years more to complete. Two triangulation parties were also organised—one for conducting surveys of Inam villages in the Satara District for Record of Rights, and the other a temporary one for the survey of Shedani (Mulshi Peta). Demand statements for Rs. 1,86,464 were sent to talukas. Including arrears of past years Rs. 2,44,155 were recovered. Rs. 1,96,357 remain as arrears.

23. *Southern Division.*—In 127 villages of the Kolaba District the work was completed in respect of 23,819 hissas. Re-survey and hissa survey of Kadwai in the Ratnagiri District was also taken up and about three-fourths finished. Demand statements for Rs. 1,61,748 were sent to the talukas. Including arrears of past years Rs. 1,08,591 were recovered. Rs. 1,07,157 remain as arrears.

In the Southern Division this task, as in N. D., is now finally completed except for some of the Khoti villages in Mahad and Kanara District.

24. These important measurements of the internal holdings in lump survey numbers are carried out by expert parties working under the vigilant supervision of able and competent officers. The results are much appreciated by the mass of small landholders whose rights of tenures would be otherwise inextricably confused. From the beginning the Department has now surveyed at no cost to the general tax-payer:—

Up to 1921-22	...	...	5,083,591
1922-23—			
Northern Division	...	48,586	
Central Division	...	265,120	
Southern Division	...	52,084	
			<hr/> 365,790
Total	...		5,449,381

Figures for 1922-23 include hissas measured by Cadastral Surveyors also.

CHAPTER III.

Survey and Settlement.

Revenue Survey.

25. All important revenue survey work is done by the field parties; it is either (a) work done at the cost of Government, or (b) paid work, of which the cost is recoverable. Government work had everywhere to be suspended for want of budget provision: a state of things that could not be tolerated long.

26. *Northern Division.*—The completion of the survey of the Salun-Dakor Road (Kaira) done for the Public Works Department, the survey of the Rentlav-Palasna Road (Surat) undertaken on behalf of the District Local Board, and of Piraman-Kapodra Road (Broach), and the survey of lands acquired for new Kashela bridges and their approaches on the Tansa Main Quadrupling Line (Thana) for the Bombay Municipality are some of the important surveys carried out during the year.

27. *Central Division.*—The principal surveys carried out during the year are (1) the survey on minor triangulation method of the Inam village of Shedani in the Mulshi Peta of the Poona District, including the classification and other operations done for the Inamdar for settlement purposes, (2) the survey of three villages, Hali, Karvande and Talpada, in the Surgana State done for the Deshmukh of Surgana, and (3) the survey on minor triangulation method of five inam villages in the Satara District, *viz.* Kolewadi, Belawade Bk., Savade, Warujni and Wadgaon Haveli, for Record of Rights purposes. Two joint surveys for Provincial road purposes

were besides undertaken, one of Karmala-Jeur Road, and the other of Ule-Kasegaon Road, both in the Sholapur District.

28. *Southern Division.*—The survey of 16 out of 23 villages of the Here Jaghir was completed at a total cost of a little over Rs. 15,000. In 3 other villages it is in progress. The Shirsangi Desgat survey was resumed, and the work of 6 villages has been completed at a cost of Rs. 5,432. Survey for the introduction of settlement which was in progress last year in Apte, Koral, and Punade of the Biwalkar Jaghir, and that of the Inam villages of Khar-Naringi, Kurkumbi-Koltembi and Vat have also been completed.

Recess work of some 21 Inam villages of Dharwar which was in arrears last year for want of funds has now been taken up on the partial restoration of the grants.

Settlements.

29. Government passed orders on the proposals for the revision settlement of Dholka and South Daskroi (Ahmedabad), Pachora taluka including Bhadgaon peta (East Khandesh), Karjat and Sangamner talukas and Jamkhed Mahal (Ahmednagar), Sangola and Pandharpur talukas (Sholapur), and Panvel taluka and Uran peta (Kolaba).

Orders were also issued settling the following Inam villages:—Kujat (South Daskroi), Yeoti (Shrigonda), Peth (Khed, Poona District), Shiravali (Bhimthadi), Tigni-birdi (Bijapur), and Hallur and Chondi (Muddebihal).

These revision settlements, it is instructive to note, are being viewed by the general public with a depth of interest rarely evinced in pre-Reform days.

30. Settlement reports of North Daskroi, Viramgam, Sanand and Gogha were under consideration of the Commissioner, Northern Division, those of Sindkheda and Kopergaon under consideration of the Commissioner, Central Division, and of Wai, Koregaon, Khanapur, Katav, and Man were with the Collector of Satara (since received). Settlement reports of Rajapur and Deogad are with the Settlement Commissioner. The Superintendents of Land Records submitted settlement reports of Inam villages of Vasna Bujrag (Matar), Vatva (South Daskroi), Pathraj, Dhekwad, and Shedani.

It has been a very heavy year for settlement work: and the next year is equally so. These settlements of course in most cases bring the pitch of land revenue income nearer to the present value of money and expenditure standards, and so afford a great relief to Provincial Finance: but impose a heavy strain in this Department.

CHAPTER IV.

City Surveys.

31. *Northern Division.*—The city surveys of Ankleshwar, Murbad, Shahapur and Dohad which were in progress last year and that of Daharu taken up this year have all been completed. Revision of Broach city survey and survey of the town of Cambay which was in

progress last year were also completed. The work in Ahmedabad has also been practically completed. In Surat the actual survey of properties has been completed and enquiry into titles is in progress. The city survey of Ahmedabad is the most important, dealing with nearly 75,000 properties at a total cost of about Rs. 1,32,000. A very important feature is that when Ahmedabad was surveyed about 1875, being then a smaller city, it cost over Rs. 3,75,000. The very large saving is the result of a trained staff and the far more perfectly organised and codified method of working under the new City Survey Manual. Next in importance is the Surat city survey comprising about 40,000 properties.

The city survey work of Kaira, Modasa and Jambusar are in progress.

Thirteen city surveys are now under regular maintenance.

32. *Central Division.*—During the year the city surveys of Karad (Satara), Erandol (East Khandesh), Nandurbar extension (West Khandesh) and Sangamner (Ahmednagar) have been completed. Those of Dharangaon and Chopda in East Khandesh, Nawapur in West Khandesh, and Wai and Panchgani in Satara are in progress.

Seventeen city surveys in all are now under regular maintenance in this Division.

Village-site surveys of Bhokri and Tamaswadi in East Khandesh are also in progress.

33. *Southern Division.*—The city survey of Bijapur was completed during the year. The Hubli revision survey and the survey of the towns of Panwel and Uran in Kolaba and Nargund in Dharwar District were in progress.

Eleven city surveys have now come under regular maintenance.

The subject of city surveys is now one of increasing importance; their main object being the confirmation of existing titles and their maintenance, their utility as evidence in future will be appreciated as much by the Government as a large property holder as by the general public which will be freed from an incubus of doubt and litigation. The value per yard of land in every city under survey is increasing, and the future importance and value of these surveys is incalculable. The administrative value of exact large scale maps of every town of any magnitude in the presidency is very great; but it is obtained as a by-product of these surveys.

Village Site Surveys.

34. The 24 village sites in Gujarat and one in the Central Division surveyed previously are being properly maintained.

Photozinc Press.

35. The work turned out by the various processes in the Printing Branch of the Press during the financial year consists of 1,073,242 Machine pulls costing Rs. 28,342, and 77,983 hand pulls costing

Rs. 17,906. The corresponding figures for the previous year were 1,081,595 machine pulls costing Rs. 34,038 and 63,819 hand pulls costing Rs. 13,906. Its work is reviewed in a separate Administration Report.

CHAPTER V:

Record of Rights.

36. The introduction of the Maxwell System of re-writing having been recently approved by Government, the work in a number of talukas which fell due this year has been postponed pending detailed instructions which are now printed and being issued. Re-writing will disappear from the machinery after 1923. In other talukas where it had been already started or could not be conveniently postponed, it was duly carried out. The details are as given below :—

Northern Division.—Four circles in Kalyan (Thana) were completed. In Surat one village Ohond in Chikli taluka.

Central Division.—In the Sholapur District, re-writing was completed in 63 villages of Malshiras and 114 of Karmala. In Satara the work was completed for 83 villages in the Khandala Mahal. In the Nasik District, re-writing was due this year in some six talukas, and while in three the work was nearly completed (except for certain villages in the Baglan taluka), that of the remaining three was postponed pending the completion of the Pot Hissa operations. In the East Khandesh District the rough copies of the Record have been completed for Pachora, Jalgaon, Yawal and Chopda talukas and Bhadgaon Peta, but the fair-copying has been postponed pending introduction of the Maxwell System. In West Khandesh re-writing in Nandurbar which was in progress last year has been completed.

Southern Division.—In the following areas the re-writing was completed—

Belgaum—Samppgaon, Chikodi and Athni talukas.

Bijapur—Indi, Bijapur, Bagewadi, Muddebihal and Hungund.

Kanara—Karwar, Kumtha, Bhatkal and Ankola.

Ratnagiri—Sangameshwar, Khed and Chiplun.

Kolaba—Alibag (2 circles) and the Khoti villages in Mahad and Mangaon talukas,

while it was in progress in Dharwar, Hubli, Gadag and Kalghatgi talukas and in part of the Alibag taluka.

Retrenchment.

37. Two posts of District Inspectors of Land Records, Panch Mahals and Broach, with their two seven-monthly peons have been kept vacant, amalgamating them with Kaira and Surat respectively. Four posts in the Central Record Office and two in the District Survey Office, Thana, have been kept vacant. Three clerks in the

city survey offices at Viramgam, Nadiad, and Broach have been discontinued. The post of the Assistant District Inspector of Land Records, Ratnagiri, was abolished.

General Remarks.

38. The year has not been one of spectacular changes: but of ding-dong work along the established lines: but as our machinery gets more efficient and ambitious, and the bulk of details to be controlled grows greater (new city surveys, more mapped Pot Hissas, larger surveys, and revision settlement staff) so the stream of work pouring into my office grows fuller. The staff of my office have had a heavy year's work. Mr. Antia has still rendered invaluable assistance. Mr. G. V. Vellal, B.A., LL.B., took his place with credit for four months.

I am grateful to the whole staff and to the Superintendents of Land Records for their ungrudging labour. This report has been pruned down to a bare recital of figures which does not disclose the zealous work which has been their chief ingredient.

In Sind Mr. Jagatsing Ailmal has held charge throughout the year. I have not been able to get to Sind—I am going in a few weeks. In N. D., Mr. Kavi is a tower of strength: his zeal for efficiency and economy, and his business methods are admirable. Mr. Mardhekar, M. A. (Superintendent of Land Records, Central Division), a most experienced Superintendent, has the heaviest charge and has continued to administer it with minute care, and strictness. In S. D., Mr. Taylor, I. C. S., unfortunately had to take leave, with health impaired: and his successor Mr. H. F. Ball, I. C. S., was not available till almost the end of the year.

39. The report is late on account of heavy pressure of work in office. It is also partly due to late receipt of statistical information from some Districts.

F. G. H. ANDERSON,
Settlement Commissioner and Director
of Land Records.

STATEMENT I.

STATEMENT

Statement I showing crop, waste, boundary marks and other inspections

Name of District.	Number of Circles Inspectors in the District.	Number of villages in each District.		Number of days actually devoted to inspection work.
		Total.	Number inspected.	
1	2	3	4	5
<i>Northern Division.</i>				Average.
Ahmedabad	18	(a) 160	450	109
Kaira	20	(a) 539	564	954
Panch Mahals	13	430	421	213
Broach	14	415	396	131
Surat	17	821	792	89
Thana	35	(b) 1,547	1,456	156
<i>Central Division.</i>				
East Khandesh	41	1,802½	1,802½	116
West Khandesh	26	1,218	1,218	225
Nasik	88	1,605	1,597	280
Ahmednagar	54	1,375	1,350	240
Poona	26	1,176	1,064	113
Sholapur	15	702	700	243
Satara	25	1,358	1,358	210
<i>Southern Division.</i>				
Belgaum	28	1,068	1,000	181
Bijapur	94	1,168	1,011	273½
Dharwar	37	(c) 1,379	1,179	244
Kolaba	30	(d) 1,627	1,486	120
Ratnagiri	17	(e) 321	304	145
Kanara	29	1,419	1,365	275

I.

carried out by Circle Inspectors in the districts during the year 1922-23.

Crop and Tenancy Inspection.		Waste Inspection.		Repair of boundary marks.	
Total number of occupied Survey Numbers.	Number of Survey Numbers and Sub-divisions.	Number of waste numbers other than forest.	Number inspected.	Number of villages due for repair.	
				Arrears of past year.	Current year's Programme.
6	7	8	9	10	11
176,362	{ 28,543 H 3,015 }	20,100	5,904	6	52
200,642	{ 22,366 H 24,406 }	17,312	1,718	9	61
88,188	{ 16,499 }	12,345	3,523	4	61
126,616	{ 16,750 H 28,994 }	9,033	1,645	.....	41
245,644	{ 29,230 H 60,602 }	11,642	1,946	.....	81
197,139	{ 13,763 }	16,568	2,371	(J) 152	141
210,624	{ 22,964 H 19,386 }	9,136	2,621	.....	237
142,860	{ 26,009 }	12,827	2,314	43	175
227,705	{ 22,215 }	11,726	1,724	251	145
242,076	{ 22,630 }	5,260	1,766	(D) 3	197
215,440	{ 17,464 H 14,238 }	2,578	673	71	80
113,220	{ 16,662 }	2,721	621	.....	76
268,401	{ 22,026 H 115,481 }	1,946	267	7	109
128,865	{ 26,862 H 26,476 }	6,669	1,063	.....	87
124,542	{ 21,240 H 12,209 }	3,160	1,077	.....	47
166,174	{ 44,648 }	2,044	2,016	7	130
163,445	{ 12,024 }	6,662	2,274	112	152
65,264	{ 2,971 H 24,029 }	2,148	279	8	24
140,225	{ 21,222 H 12,265 }	10,222	3,416	4	148

H. = Hisas.

STATEMENT

Name of District.	Repair of boundary marks.			
	Number of villages completely inspected and repaired.		Balance of villages outstanding at close of season.	
	Arrears of past year.	Current year's programme.	Arrears of past year.	Current year's programme.
1	12	13	14	15
<i>Northern Division.</i>				
Ahmedabad	1	49	5	3
Kaira	.....	.....	.....	.....
Panch Mahals	3	48	1	3
Broach	.....	40	.....	1
Surat	.....	79	.....	2
Thana	4½	140½	11	1
<i>Central Division.</i>				
East Khandesh	.....	237	.....	.....
West Khandesh	3	168	49	7
Nasik	2	125	23½	20
Ahmednagar	3	121½	.....	75½
Poona	51	45	20	35
Sholapur	.....	64	.....	12
Salars	5	105	2	3
<i>Southern Division.</i>				
Belgaum	.....	85	.....	1
Bijapur	.....	22½	.....	23½
Dharwar	7	117	.....	13
Kolaba	60½	109	55	44½
Rainagiri	8	27½	.....	7
Kanara	3	145	1	3

—concluded.

Average number of days spent by Circle Inspectors of the District in inspection and repairs.	Inspection of Tagai works.		Number of entries checked in the Birth and Death Register.	Number of entries checked in Village Forms VI and VII.	Remarks.
	Number of Tagai-works examined.	Number in which work was finished.			
16	17	18	19	20	21
48	16	.....	7,750	19,475	The Revenue staff checked 40,141 entries in Settlement Register in 168 Talukdari villages.
.....	11	6	12,817	36,486	(a) Village Baroda transferred from Ahmedabad to Kaira.
50	4	2	6,368	62,644	(b) One new village Ismailia added.
47	.....	.....	6,975	75,071	(c) Ten villages in Dharwar Taluka are amalgamated with adjoining villages R-557-1922.
45	4	4	13,480	205,888	(d) Out of Sardar Biralkar's 16 villages, 12 villages are amalgamated into 6 R-319-B-1922.
100	1	1	11,458	66,215	(e) The Khoti village of Juwa Anjanacha lapsed to Government.
63	29	19	20,596	91,329	(f) Last year the figures were not correctly reported by the Collector.
58	10	10	17,869	104,421	(g) Owing to re-grouping of villages, figure differs from that reported last year.
70	292	292	17,818	137,806	
36	219	201	22,511	75,845	
48	43	33	10,448	80,544	
88	406	402	11,491	53,216	
61	29	19	14,976	122,142	
46	41	36	17,832	22,990	
171	586	524	11,704	100,807	
18	72	55	21,023	70,464	
81	.....	2	12,229	120,642	Circle Inspectors checked 6,945 entries in Village Forms VI and VII in 304 Khoti villages.
67	.....	.....	2,641	90,005	
80	2	1	9,022	69,662	

F. G. H. ANDERSON,
Settlement Commissioner and
Director of Land Records.

STATEMENT II.

Statement II showing the Measurement and Classification work performed by Circle Inspectors and other establishments, deputed on routine measurement work during the year 1922-1923.

Name of District.	Arrears at the beginning of the year.		Received during the year.		Disposed of during the year.		Balance at the close of the year.		Remarks.
	Measurement.	Classification.	Measurement.	Classification.	Measurement.	Classification.	Measurement.	Classification.	
1	2	3	4	5	6	7	8	9	10
Northern Division.									
Ahmedabad ...	24	...	500	96	500	96	24	...	
Kaira ...	177	116	569	900	992	915	64	1	
Panch Mahals ...	77	...	233	10	394	10	16	...	
Broach ...	30	...	356	1	354	1	32	...	
Surat ...	18	1	606	72	626	73	98	...	
Thana ...	331	50	923	187	940	298	314	0	
Total ...	657	167	3,407	1,166	3,506	1,323	648	10	
Central Division.									
East Khan- desh ...	265	26	1,277	12	1,443	48	96	...	
West Khan- desh ...	36	3	437	19	406	14	66	6	
Nasik ...	171	1	976	48	970	49	177	...	
Ahmednagar ...	162	23	666	91	630	30	197	13	
Poona ...	657	41	2,188	42	2,066	45	740	36	
Sholapur ...	298	11	354	10	337	12	306	9	
Satara ...	453	...	2,203	69	2,331	54	365	5	
Total ...	2,032	114	8,000	211	8,123	252	1,900	73	
Southern Division.									
Belgaum ...	257	4	1,045	119	1,154	117	148	6	
Bijapur ...	711	3	1,337	40	1,338	43	330	1	
Dharwar ...	737	3	1,456	75	1,071	5	1,123	72	
Kolaba ...	357	...	852	111	906	111	308	...	
Ratnagiri ...	321	11	621	41	970	44	172	8	
Kanara ...	95	28	1,758	135	1,534	153	269	5	
Total ...	2,478	48	7,969	521	7,373	477	2,374	92	
Grand Total ...	5,167	320	18,846	1,898	19,092	2,052	4,921	175	

F. G. H. ANDERSON,
Settlement Commissioner and
Director of Land Records.

STATEMENT III.

STATEMENT

Statement III showing the test of Village Officers' and Circle
in the districts during

Name of District.	Number of villages.		Number of boundary marks inspected.	
	Total in District.	Number inspected.		
1	2	3	4	
Ahmedabad ...	S. D. O. ... 8	(a)450	314	303
	Mr. ... 9		447	5,119
Kaira ...	S. D. O. ... 9	(a)689	514	368
	Mr. ... 7		655	2,366
Panch Mahals ...	S. D. O. ... 2	430	303	611
	Mr. ... 5		384	2,749
Broach ...	S. D. O. ... 2	415	334	4,106
	Mr. ... 6		414	1,662
Surat ...	S. D. O. ... 2	691	342	1,217
	Mr. ... 9		748	7,379
Thana ...	S. D. O. ... 4	(b)1,647	368	660
	Mr. ... 11		670	2,309
East Khandesh ...	S. D. O. ... 2	1,804	362	.....
	Mr. ... 13		1,379	6,146
West Khandesh ...	S. D. O. ... 2	1,218	451	449
	Mr. ... 8		1,177	6,493
Nasik ...	S. D. O. ... 2	1,665	868	955
	Mr. ... 12		1,515	3,123
Ahmednagar ...	S. D. O. ... 2	1,375	819	96
	Mr. ... 13		1,314	1,564

S. D. O. = Sub-Divisional Officer.

Mr. = Mamlatdar or Mahalkari.

III.

*Inspectors' work by Sub-Divisional Officers and Mamltdars
the year 1922-23.*

Number of Survey Numbers in which Crop and Tenancy Record was inspected.		Number of villages in which Birth and Death Registers were checked.	Number of entries checked in Village Form Nos. VI and VII.	Remarks.
Village Officers' work.	Circle Inspectors' work.			
5	6	7	8	9
1,290	533	906	2,523	(a) Village Baroda transferred from Ahmedabad to Kaira.
{ 5,316 H 2,844	{ 1,615 H 517	518	8,326	
4,018		330	2,075	
{ 5,437 H 7,654	{ 1,575 H 3,500	548	10,643	
{ 4,191 H 3,546	{ 968 H 986	165	3,159	
{ 4,566 H 687	{ 1,512 H 586	839	7,257	
{ 1,347 H 2,575	{ 183 H 97	254	5,237	
{ 4,068 H 1,317	{ 1,524 H 201	411	8,513	
1,798	...	336	2,869	
11,330	5,111	719	23,115	
{ 876 H 443	{ 974	255	5,303	(b) One new village Ismailia added.
{ 4,323 H 4,439	{ 1,633	845	23,331	
{ 941 H 200	{ 169 H 4	159	2,963	
{ 4,360 H 483	{ 1,750	1,334	11,610	
2,953	2,507	345	7,355	
6,603	2,043	1,037	15,636	
736	143	334	1,906	
4,869	1,507	1,515	17,537	
543	76	132	2,415	
9,311	3,324	1,247	26,401	

E. O. = Ex-Officio.

H. = Hissas.

STATEMENT

Name of District.	Number of villages.		Number of boundary marks inspected.	
	Total in District.	Number inspected.		
1	2	3	4	
Poona	S. D. O. ... 8	1,176	363	86
	Mr. ... 12		997	
Sholapur	S. D. O. ... 2	702	176	490
	Mr. ... 7		667	
Satara	S. D. O. ... 3	1,368	335	306
	Mr. ... 14		1,368	
Solgaun	S. D. O. ... 3	1,063	273	601
	Mr. ... 12		817	
Bijapur	S. D. O. ... 2	(c)1,025	423	323
	Mr. ... 9		1,022	
Dharwar	S. D. O. ... 8	(d)1,379	417	2,107
	Mr. ... 13		1,065	
Kolaba	S. D. O. ... 2	1,627	388	3,641
	Mr. ... 10		1,376	
Ratnagiri	S. D. O. ... 2	1,337	510	1,421
	Mr. ... 11		1,368	
Kanara	S. D. O. ... 2	1,419	344	3,700
	Mr. ... 11		1,336	

S. D. O. = Sub-Divisional Officer.

Mr. = Mamlakatdar or Mahalkari.

III—concluded.

Number of Survey Numbers in which Crop and Tenancy Record was inspected.		Number of villages in which Birth and Death Registers were checked.	Number of entries checked in Village Form Nos. VI and VII.	Remarks.
Village Officers' work.	Circle Inspectors' work.			
5	6	7	8	
1,001	.....	946	2,575	
5,439	1,773	938	12,842	
H 14,979	H 2,311			
2,032		141	1,968	
8,338	2,339	675	12,531	
684	643	286	2,686	
H 988	H 729			
9,466	6,142	1,349	74,721	
H 99,190	H 90,048			
1,629	813	272	2,527	
H 1,175	H 119			
7,046	1,268	806	15,565	
H 9,070	H 2,975			
1,078	829	290	14,016	(c) 168 unsettled Inam villages excluded.
5,198	1,307	1,016	21,236	
2,990	1,051	944	2,654	
8,474	3,550	952	12,225	(d) 10 villages amalgamated with adjoining villages.
1,216	445	296	1,861	
H 4,190	H 1,394			
3,351	1,390	1,196	20,215	
H 1,850	H 473			
80	24	480	4,138	
1,958	1,024	1,956	15,454	
1,397	868	119	1,699	
10,605	5,361	1,304	25,516	

H. = Hissas.

F. G. H. ANDERSON,
Settlement Commissioner and
Director of Land Records.

STATEMENT

Name of District.	Number of villages.		Number of boundary marks inspected.	
	Total in District.	Number inspected.		
1	2	3	4	
Poona ...	S. D. O. ... 8	1,175	263	85
	Mr. ... 12		997	2,018
Sholapur ...	S. D. O. ... 3	702	175	490
	Mr. ... 7		697	668
Belara ...	S. D. O. ... 3	1,368	335	398
	Mr. ... 14		1,368	5,645
Bolgaum ...	S. D. O. ... 3	1,063	278	601
	Mr. ... 12		817	2,055
Bijapur ...	S. D. O. ... 3	(c) 1,025	428	222
	Mr. ... 9		1,023	1,404
Dharwar ...	S. D. O. ... 3	(d) 1,279	417	2,107
	Mr. ... 13		1,095	2,222
Kolaba ...	S. D. O. ... 3	1,627	388	3,641
	Mr. ... 10		1,375	10,798
Bainadri ...	S. D. O. ... 2	1,337	510	1,481
	Mr. ... 11		1,308	3,100
Kanara ...	S. D. O. ... 3	1,419	344	2,700
	Mr. ... 11		1,235	11,410

S. D. O. = Sub-Divisional Officer.

Mr. = Mamladar or Mahalkari.

III—concluded.

Number of Survey Numbers in which Crop and Tenancy Record was inspected.		Number of villages in which Birth and Death Registers were checked.	Number of entries checked in Village Form Nos. VI and VII.	Remarks.
Village Officers' work.	Circle Inspectors' work.			
5	6	7	8	
1,001	.....	945	2,575	
{ 5,439	1,778	938	18,843	
{ H 14,579	H 2,511			
2,038		141	1,968	
3,338	2,339	675	18,531	
{ 884	643	286	3,685	
{ H 983	H 728			
9,468	5,142	1,349	74,731	
{ H 39,120	H 30,048	272	2,527	
{ 1,629	813			
H 1,175	H 119			
{ 7,046	1,233	390	14,016	(c) 163 unsettled Inam villages excluded.
{ H 9,070	H 2,975			
1,078	525			
5,125	1,307	1,016	21,236	
2,950	1,051	244	2,554	
8,474	3,550	952	12,225	(d) 10 villages amalgamated with adjoining villages.
{ 1,215	445	298	1,861	
{ H 4,130	H 1,394			
8,351	1,390	1,196	20,818	
{ H 1,250	H 475	480	4,139	
{ 50	24			
1,268	1,024	1,356	15,454	
1,397	268	119	1,699	
10,805	5,391	1,304	35,516	

H. = Hissas.

F. G. H. ANDERSON,
Settlement Commissioner and
Director of Land Records.

STATEMENT

Statement IV showing the details of work done by the District

Name of District.	Number of villages in the District.		Number of days devoted to all kinds of inspection.	Number of Circle Inspectors.
	Total.	Inspected.		
1	2	3	4	5
<i>Northern Division.</i>				
Ahmedabad	(a) 450	48	96	18
Kaira	(a) 589	55	70	30
Panch Mahals	430	10	33	18
Brosch	415	23	30	14
Surat	631	75	89	18
Thana	(b) 1,547	118	167	35
<i>Central Division.</i>				
East Khandesh	1,804	84	168	41
West Khandesh	1,318	143	80	28
Nasik	1,696	101	190	39
Ahmednagar	1,375	40	59	34
Poona	1,176	43	64	26
Sholapur	702	46	133	15
Satara	1,358	80	105	35
<i>Southern Division.</i>				
Belgaum	1,033	84	118	28
Bijapur	1,168	104	151	...
Dharwar	1,279	101	94	28
Kolaba	1,550	86	101	30
Balnagiri	831	101	137	17
Kanara	1,419	65	107	29

IV.
Inspectors of Land Records of the Districts during the year 1922-23.

Number of Circles.	Crop and Waste Inspection numbers checked.						Number of boundary marks examined.	Entries in the Return of Population and agricultural stock tested.
	Early.		Late.		Waste.			
	Circle Inspectors' work.	Village Accountants' work.	Circle Inspectors' work.	Village Accountants' work.	Circle Inspectors' work.	Village Accountants' work.		
6	7	8	9	10	11	12	13	14
18	79	158	...	48	7	17	284	.....
20	...	845	...	14	...	30	75	.....
18	18	56	...	...	...	...	.....	.....
14	95	179	147	87	5	18	125	.....
18	228	872	49	35	8	40	498	.....
35	.....	988	...	21	...	...	488	.....
41	91	274	91	226	10	18	427	.....
22	624		480		112		2,105	.....
26	{ 40	978	{ 55	186	{ 27	57	.....	.....
	208	1,016	269	H 945			.....	.....
24	.....	185	...	...	...	...	55	.....
25	95	...	...	...	...	...	.....	.....
15	...	...	...	72	...	...	.....	.....
25	.....	{ 229	.....	.....	.....	.....	883	.....
		H 805						
22	.....	...	60	...	...	...	902	.....
...	87	...	78	...	...	...	87	.....
26	{ 69	228	{ 9	25	{ 9	13	185	.....
	85	H 196	1	25				
30	94	105	...	...	...	...	265	.....
17	10	10	{ 88	88	{ ...	...	812	.....
			H 820	H 820				
29	.....	...	1	...	...	...	249	.....

STATEMENT

Name of District.	Entries in the Birth and Death Register tested.	Number of Survey Numbers tested.			
		Measured by the Circle Inspectors.	Classed by the Circle Inspectors.	Measured by the District Surveyors.	Classed by the District Surveyors.
1	15	16	17	18	19
<i>Northern Division.</i>					
Ahmedabad	134	16	...	9	11
Kaira	154	$\left\{ \begin{array}{l} 24 \\ \text{H } 71 \end{array} \right\}$	1	4	112
Panch Mahals	8	$\left\{ \begin{array}{l} 9 \\ \text{H } 23 \end{array} \right\}$	...	6	...
Broach	106	8	2	10	5
Surat	371	$\left\{ \begin{array}{l} 35 \\ \text{H } 44 \end{array} \right\}$	1	$\left\{ \begin{array}{l} 28 \\ \text{H } 30 \end{array} \right\}$	10
Thana	224	346	43	45	2
<i>Central Division.</i>					
East Khandesh	666	37	...	14	11
West Khandesh	736	$\left\{ \begin{array}{l} 65 \\ \text{H } 94 \end{array} \right\}$	...	$\left\{ \begin{array}{l} 21 \\ \text{H } 19 \end{array} \right\}$	...
Nasik	104	$\left\{ \begin{array}{l} 134 \\ \text{H } 30 \end{array} \right\}$	1	$\left\{ \begin{array}{l} 2 \\ \text{H } 5 \end{array} \right\}$	...
Ahmednagar	49	50	...	...	...
Poona	28	49	...	...	...
Sholapur	61	141	...	...	...
Satara	320	$\left\{ \begin{array}{l} 72 \\ \text{H } 152 \end{array} \right\}$	...	...	...
<i>Southern Division.</i>					
Belgaum	64	$\left\{ \begin{array}{l} 179 \\ \text{H } 228 \end{array} \right\}$	$\left\{ \begin{array}{l} 1 \\ \text{H } 4 \end{array} \right\}$	5	$\left\{ \begin{array}{l} 8 \\ \text{H } 20 \end{array} \right\}$
Bijapur	377	$\left\{ \begin{array}{l} 79 \\ \text{H } 266 \end{array} \right\}$	...	...	6
Dharwar	138	$\left\{ \begin{array}{l} 42 \\ \text{H } 94 \end{array} \right\}$	...	$\left\{ \begin{array}{l} 20 \\ \text{H } 4 \end{array} \right\}$	3
Kolaba	31	$\left\{ \begin{array}{l} 167 \\ \text{H } 144 \end{array} \right\}$	...	...	12
Ratnagiri	...	...	...	7	8
Kanara	48	98	120	15	...

H. = Hissas.

IV—concluded.

Number of entries in Village Forms VI and VII tested.	Number of Village Accounts examined in measurement test.	Taluka Forms XX to XXII tested.	Number of Talsai Works inspected.	Number of entries in Village Form XVI inspected.	Remarks.	
20	21	22	23	24	25	
245	6	(a) Village Baroda transferred from Ahmedabad to Kaira.	
556	103		
90	14		
688	144		
1,496	106		
1,249		
2,484	1	171		(b) One new village Ismailia added.
1,627		
1,439	5	80		
99		
404		
727	65		
1,930		
1,680	18		
2,381	100		
1,818	25		
920		
1,881		
621	105		

F. G. H. ANDERSON,
Settlement Commissioner and
Director of Land Records.

*Part III of the Land Revenue Administration Report of the
Province of Sind for the year 1922-23.*

No. P.-85—I.

REVENUE DEPARTMENT:

Office of the Commissioner in Sind,
Government House, Karachi, 10th October 1923.

Revised irrigational settlements were not introduced in any taluka during the year. Appendix A is therefore blank. The revision settlement proposals of the Warah taluka have been submitted to Government for sanction which is still awaited. The revision settlement reports of the Guni, Badin, Tando Bago and Sinjhoru (Non Jamrao) talukas have been printed and will shortly be reviewed by the Commissioner and submitted for sanction. The revision settlement report of the Karachi taluka is in the Press. The Commissioner's proposals for the conduct of revision operations in the Larkana, Kambar, Ratodero and Mirokhan talukas in the Larkana district during the coming cold weather have been sanctioned by Government.

2. The amount of work carried out at the Head Record Office is detailed in appendices B and C. The figures in columns 2 to 4 of appendix B show some increase as compared with those of the previous year which is mainly due to changes in the boundaries of certain talukas. The figures in columns 6 to 8 however show that there were no arrears at the end of the year. Entries relating to 1,367 survey numbers were examined in the office of the Superintendent, Land Records, and only 26 mistakes were discovered, most of which were corrected at the time of inspection.

In all, 938 land registers were prepared during the year as against 272 in the previous year. Out of these, 9 were prepared in consequence of territorial changes, as against 15 in the preceding year. The preparation of 47 land registers, as against 736 in the preceding year, was in arrears at the end of the year. These relate exclusively to the revision settlement of the Ghorabari taluka. The larger outturn of work during the year was due to the employment of a temporary establishment of 10 Register Writers sanctioned in Government Resolution, Revenue Department, No. 3362, dated the 1st July 1922.

The number of maps prepared and supplied to Government officers and private individuals was 5,899 as against 7,711, the decrease occurring in the number of requisitions from the Engineering and Revenue Department officers. In addition to the maps shown above, 844 maps were corrected and deposited in the Head Record Office as office copies or for future reproduction and 411 more were prepared to replace old office copies. The total number of maps thus dealt with amounts to 7,154 as against 8,087

in the preceding year. The number of maps sent to the Photozinc Office, Poona, for reproduction was 424 as against 190.

Appendix C relates to the work done in the Record Office in consequence of new measurements carried out by the village establishments. The number of measurement papers relating to survey numbers received for examination and entry in the Record Office was 1,071 more than in the previous year. All the papers received in the Record Office were disposed of, leaving no arrears at the end of the year. The number of cases returned for the correction of errors shows some decrease, as compared with that of the preceding year. This reflects some improvement in the work of the village establishments in preparing survey papers but much room for improvement still remains. The Commissioner considers that survey work cannot be satisfactorily done so long it is entrusted to the village staff and to ignore this fact is to ignore the teachings of experience. He has accordingly asked the Superintendent, Land Records in Sind, to give his opinion as to the advisability of reducing the number of Supervising tapadars and appointing one Supervising tapadar per taluka for measurement work and maintaining extra bands as permanent measurers who may be paid from the fees charged in advance for private measurement work. When proposals in this connection take a definite shape, the Commissioner will submit them to Government for sanction.

3. The work of sorting and destroying records is reported to be up to date.

4. The Head Record Office came under the annual inspection of the Superintendent, Land Records, in May and June last, and the result was satisfactory.

5. No field survey parties were organized during the year.

The house measurement and enquiry work of the Hyderabad resurvey was completed during the year. The number of properties measured amounted to 19,508 and 18,894 properties were enquired into. The remaining work of map tracing and writing up of property registers is in progress and is expected to be completed shortly. The work done was inspected by the Superintendent, Land Records. He reports that the work has been done with great economy as though the number of properties far exceeds the estimated number of 16,000, the total expenditure on the survey will be well within the sanctioned allotment of Rs. 50,000.

The traverse work of Larkana town survey was started on the 8th November 1922, under the personal supervision of the Superintendent, Land Records, and the house measurement work on 2nd December 1922. The enquiry work commenced on 22nd March 1923. Up to the end of the year, 494 theodolite stations were demarcated, 5,663 properties measured and 2,607 properties enquired into. The enquiry work is in progress and is expected to be completed by the end of December next. The cost of the survey up to the end of the year amounted to Rs. 9,300-13-7 of which Rs. 3-3-0 have been realized on account of copying fees.

The town survey of Jacobabad was started on 23rd June 1923. The house measurement work commenced on 22nd July 1923 and up to the end of the year, 211 theodolite stations were demarcated and 343 properties measured. The enquiry work will begin after progress has been made with the house measurement work. The cost of the survey up to the end of the year amounted to Rs. 254-7-11.

The resurvey of Karachi is in progress. The work is likely to be completed by April 1924.

In the course of the maintenance of Shikarpur City Survey 1,141 theodolite stations and 9,742 properties were reviewed by the city surveyors during the year, leaving a balance of 757 theodolite stations and 3,832 properties for the completion of the second cycle of review. The balance of Rs. 2,151-7-7 shown as recoverable on account of the city survey operations at the close of the previous year was reduced to Rs. 1,000-6-10 at the close of the year under report.

The first cycle of review in the maintenance work of the Garhi Yasin town survey was completed during the year. In all 880 properties and 65 theodolite stations were reviewed, of which 450 properties and 30 theodolite stations pertain to the second cycle of review. The balance of Rs. 159-6-1 shown as outstanding last year against this survey has since been wiped off. In all Rs. 567-10-0 were recovered as sanad and late fees thus showing a surplus of Rs. 408-3-11 in favour of Government.

In the course of the maintenance of the Sukkur city survey 2,552 properties and 56 theodolite stations came under review. Out of the outstanding balance of Rs. 9,776-8-2 shown as recoverable on account of the cost of this survey, Rs. 3,625-3-3 were recovered during the year, leaving a balance of Rs. 6,151-4-11 to be recovered.

The maintenance work of the Rohri town survey was started on 5th September 1922. In all 1,640 properties and 100 theodolite stations were reviewed during the year. Out of the total cost of Rs. 8,081-11-9 on this survey, Rs. 7,537-6-0 were recovered and Rs. 348-0-0 written off during the year, leaving a balance of Rs. 196-5-9 for recovery at the end of the year.

6. The Superintendent tested 263 survey numbers measured by the village establishment and communicated the irregularities noticed by him to the Taluk officials concerned.

7. The four weeks' survey class was as usual held in August. It was attended by two Assistant Collectors, one Deputy Collector and three Mukhtyarkars, all of whom were granted the usual certificates. The formation of a survey party for the training of Head Munshis and graduates in survey work was dispensed with last year in the interests of economy.

8. The total cost of the Land Records Department for the year amounted to Rs. 95,088-9-11, of which Rs. 28,689-14-4 were spent on city surveys and Rs. 6,526-9-8 on field surveys.

9. The Record of Rights was neither introduced nor promulgated in any taluka in Sind during the year.

The Record was due for re-writing in 12 dehs of the Karachi taluka and in the Tatta, Shahbandar, Mirpur Bathoro, Jati and Sujawal talukas of the Karachi district, in the Tando Bago taluka of the Hyderabad district, in the Shahdadpur taluka of the Nawabshah district, in the Samaro taluka of the Thar Parkar district, in the Ratodero and Mirokhan talukas of the Larkana district, in deh Kartar of the Rohri taluka of the Sukkur district and in the Thul, Kandhkot and Kashmir talukas of the Upper Sind Frontier district. The work was actually carried out in 10 dehs of the Karachi taluka, and in the Tatta, Shahbandar, Mirpur Bathoro, Jati and Sujawal talukas of the Karachi district. The re-writing was postponed in deh Kartar of the Rohri taluka owing to the land being under water, in the Samaro taluka of the Thar Parkar district owing to the number of mutations being small, in dehs Thanu and Drigh of the Karachi taluka, in the Tando Bago taluka of the Hyderabad district, in the Shahdadpur taluka of the Nawabshah district, in the Ratodero and Mirokhan talukas of the Larkana district, and in the Thul, Kandhkot and Kashmir talukas of the Upper Sind Frontier district owing to the prospective introduction of the Maxwell system of keeping the Record of Rights under Government Resolution, Revenue Department, No. 395-B, dated the 28th February 1923. The re-writing of the Record in the Kotri taluka of the Karachi district, in the Sakrand and Kandiaro talukas of the Nawabshah district, in the Mirpurkhas, Jamesabad, Digri, Umakot, Sanghar and Khipro talukas of the Thar Parkar district, referred to in the previous year's report, was completed during the year under report.

The work of measuring fresh sub-divisions was up to date, except in the Kotri taluka of the Karachi district where it was postponed till September 1923 as the stones were not available. It was done by the village establishment as a part of their ordinary duties.

The total number of cases in which acquisition of rights was not reported during the year was 773 and the fines imposed amounted roughly to Rs. 2,500.

The revenue accounts were based on the entries in the Record of Rights in the whole Province except in the areas specially exempted from the operation of the rules.

The maintenance of the Record is on the whole satisfactory.

L. J. MOUNTFORD,
Commissioner in Sind.

APPENDIX B.

Showing the work done in the Head Record Office, Hyderabad, Sind, in connection with sketches, etc.

Year.	Number of cases necessitating correction in Survey Records.				Number of cases returned duly corrected.				Number of cases remaining for correction at the end of the year.				Number of extracts from Survey Registers supplied.	Number of Survey Registers prepared and supplied to		
	Survey Registers.	Maps.		Lists of Karia rebate.	Survey Registers.	Maps.		Lists of Karia rebate.	Survey Registers.	Maps.		Lists of Karia rebate.		Village Establishment.	District Officers.	Petitioners.
		English.	Sindhi.			English.	Sindhi.			English.	Sindhi.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1922-23 ...	2,948	115	2,248	...	2,948	115	2,248	...	...	...	...	...	252	32	...	19
1921-22 ...	2,690	110	1,972	18	2,690	110	1,972	18	...	...	...	...	790	16	...	4

APPENDIX B—continued.

Year.	Number of copies of Field Books supplied.	Land Registers prepared for the Head Record Office.	Number of Maps supplied.								Maps prepared for printing.		Maps prepared to replace old office copies in the Head Record Office.	Remarks.
			Free of cost to Village Establishment.	On payment to Village Establishment.	To District Officers.		To petitioners on payment.		To the Public Works Department.		English.	Sindhi.		
					English.	Sindhi.	English.	Sindhi.	English.	Sindhi.				
1	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1922-23	Cases 2,665 S. Nos. 9031	898	2,928	148	2	118	19	766	97	1,891	13	411	411	
1921-22	Cases 2,766 S. Nos. 11041	267	4,961	217	87	10	2	859	34	2,251	8	182	128	

A. M. GREEN,
for Commissioner in Sind.

APPENDIX C.

Showing the work done in the Head Record Office, Hyderabad, Sind, in connection with new measurements done by Village Establishments.

District.	Number of talukas in which survey work was done.	Number of survey numbers received for examination and entry in the Survey records.	Number of survey numbers received after making entries in the Survey records, maps and registers.	Number of survey numbers returned without entry in the Survey records with lists of errors.	Areas at the end of the year.	Remarks.
Sukkur ...	8	3,637	2,051	1,786	...	
Upper Sind Frontier ...	5	809	512	297	...	
Karachi ...	10	3,386	2,345	941	...	
Thar Parkar ...	8	604	355	449	...	
Larkana ...	11	1,010	593	417	...	
Nawabshah ...	7	1,194	755	439	...	
Hyderabad ...	7	2,010	1,068	942	...	
Total for 1922-23 ...	56	12,950	7,679	5,271	...	
Total for 1921-22 ...	55	11,879	5,884	6,045	...	

A. M. GREEN,
for Commissioner in Sind.

APPENDIX D.

Statement showing the test of Tapadars' and Supervising Tapadars' inspection work by Sub-divisional Officers in the Province during 1922-23.

Name of district.	Number of dehs.		Number of dehs in which boundary marks repair was examined.	Number of survey numbers in which crops and tenancy record was checked.		Number of dehs in which birth and death registers were checked.	Number of entries checked in Village Form 1-G and 1-D.	Remarks.
	Total in the district.	Number visited during the year.		Tapadars' work.	Supervising Tapadars' work.			
Karachi	798	507	84	9,059 A. g. +87 27 bigoti measurement.	4,261	74	8,478	
Hyderabad	925	404	70	4,698	4,694	155	1,898	
Thar Parkar	964	787	101	84,016 A. g. +979 5 bigoti measurement.	8,975	317	68,375	
Larkana	754	574	51	16,361	5,369	189	7,075	
Nawabshah	756	470	44	18,598	4,267	145	7,600	
Sukkur	677	475	88	19,678	3,823	158	5,125	
Upper Sind Frontier	488	363	44	4,705 A. g. +731 25 bigoti measurement.	1,154	98	1,600	
Total	5,307	3,573	1,283	94,949 A. g. +1,198 17 bigoti measurement.	32,363	1,110	95,136	

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A. M. GREEN,
for Commissioner in Sind.

No. 1226 of 1923.

OFFICE OF THE SUPERINTENDENT, LAND
RECORDS, BOMBAY SUBURBAN DIVISION.

Old Custom House Yard, Fort,
Bombay, 24th September 1923.

From

W. J. NEWLAND, Esq.,
Superintendent, Land Records,
Bombay Suburban Division, Bombay;

To

THE SETTLEMENT COMMISSIONER AND
DIRECTOR OF LAND RECORDS,
Bombay Suburban Division, Bombay.

Sir,

I have the honour to submit my report on the administration of the office of the Superintendent, Land Records, Bombay Suburban Division, for the year ending 31st July 1923.

2. I held charge as Superintendent, Land Records, and Mr. Bhatkar held charge as District Inspector, Land Records, throughout the year. Government in the Development Department have, in their Resolution No.S.C.-1226 dated 14th August 1923, extended the period of the appointments of Settlement Commissioner and Director of Land Records, and Superintendent, Land Records, for this Division, for a further period of three years from 1st April 1923.

3. *Tour.*—In May last I visited the City Survey Office, Bandra, and the District Survey Office, Andheri, for inspection. The District Inspector toured throughout the district, testing the work of the Circle Inspectors, and inspecting Record of Rights, etc.; he also inspected the Bandra City Survey Office. No serious irregularities were noticed during our inspections.

4. *District Survey Office.*—The District Survey Office is still housed in a portion of the Notified Area Committee's office building at Andheri; it will be removed next winter to the new Survey Office building which is now under construction.

During the year under report the District Survey Office disposed of 41 correction cases consisting of 462 Survey Numbers out of a total of 50 cases consisting of 610 Survey Numbers, and 662 miscellaneous cases. The remaining nine correction cases were received late in July last. One post of clerk was kept vacant for want of sufficient work upto April when it was filled as the work in the office showed a tendency to increase. Rs. 667-4-0 were realised from the sale of printed maps and extracts from survey records. The cost of maps and extracts supplied to Government officers free of charge comes to Rs. 281-12-0, approximately.

During the inspection of the District Survey Office I found that the records were not up-to-date, owing to the fact that all cases for

correction were not sent to the District Inspector. For instance, it was found that out of about 179 Notifications regarding acquisitions that have appeared in the *Gazette* since 1921, papers in connection with only 27 Notifications were received in the District Survey Office for correction of records. Similarly, as regards non-agricultural holdings the survey records are not up-to-date, as the information about conversion of agricultural lands into non-agricultural holdings and *vice versa* was not sent to the District Survey Office promptly. This matter has been brought to the notice of the Development Officers, and cases for correction are now being sent to the District Survey Office. It must, however, be noted that, unless all the officers in the district who are entrusted with the duties of acquisition and conversion of agricultural into non-agricultural lands co-operate with the Land Records staff in keeping the records upto date, hopeless confusion and serious consequences both as regards Government and private interests are inevitable.

The Tab and Pigeon-hole systems are in working order.

5. *Field work.*—In this district there is no staff of Cadastral Surveyors. Simple cases of measurement were done by the Revenue Circle Inspectors, and the important and complicated measurement and classification cases were done by the District Surveyor. Three Circle Inspectors disposed of 60 cases involving measurement of 143 Survey Numbers of course in addition to their routine duties. The close of the year under report showed a balance of 16 cases involving measurement of 42 Survey Numbers, pending with these Circle Inspectors. The District Surveyor alone disposed of 55 cases of measurement in 663 Survey Numbers and 6 cases of classification in 15 Survey Numbers. Rs. 619-6-0 were realised on account of measurement work done on private applications; the approximate cost of measurement work done on behalf of Government is reported to be Rs. 916-4-0.

Last year it was proposed that one Cadastral Surveyor should be appointed to do all measurement work in the district, as the Revenue Circle Inspectors did not show good results in their measurement work. But since then they have been brought under proper control with the result that the out-turn of measurement work done by them is not so discouraging; and if they continue to do this work promptly, the necessity for appointing a Cadastral Surveyor will not arise, unless it is proposed to take up the Pôt Hissa survey work which is held in abeyance on account of progressive Development operations.

One Circle Inspector was appointed temporarily during the year at the cost of the Bombay Municipality to measure lands required for the Tansa Pipe Line from Paspoli to Kiroi; the plans and statements for them were sent to the Assistant Development Officer for Kurla Area, for further action, and a detailed report thereon was submitted to the Collector, Bombay Suburban District. The amount spent on this work is Rs. 608-10-0 against Rs. 700 sanctioned by the Bombay Municipality. This measurement was done wholly under the supervision of the District Inspector. The District

Inspector's assistance and guidance is fully availed of by the Surveyors under the Development Officers in all complicated survey cases.

6. *City Survey and Maintenance.*—As no suitable man could be obtained, the post of Maintenance Surveyor, Bandra City Survey, was vacant upto 1st October 1922 when it was filled by the appointment of Mr. Rokde, who reviewed during the last 10 months 1,277 properties and 205 theodolite stations out of 2,091 properties and 654 theodolite stations. Out of the properties reviewed he had to measure 332 and correct the maps in respect of 265. The missing theodolite stones could not be replaced for want of funds. The accommodation for this office is insufficient and cramped, nor is the office properly equipped with necessary furniture, but provision in the next year's budget estimate has been made to meet all requirements. Progress of review work was rather slow, as the Maintenance Surveyor had not much experience of city survey work, and he had to spend much time in clearing off arrears of past years. He appears to be keen on his work and should with more experience prove a useful man.

7. *Village Site Survey.*—Provision has been made in the next year's budget estimate for the appointment of a Maintenance Surveyor for village sites in South Salsette, and it is hoped that his appointment will be made from 1st April 1924. The record stands in need of revision owing to certain changes in the gaathan limits. When the record is revised, occupants' sketches will be issued and fees recovered.

The Record of Rights for Malad gaathan could not be prepared during the year for want of funds. The Settlement Commissioner and Director of Land Records, Poona, has now provided money out of the grant at his disposal to meet the cost of this work, and the establishment will be entertained soon after the monsoon ceases.

8. *Town-planning Schemes.*—Only one Town Planning Scheme No. II of Santa Cruz was received for survey correction during the year, for which Kam Jasti Patraks were prepared and sent to the Mamlatdar for further action.

9. *Boundary Marks Repairs Work.*—Boundary Marks repairs work was done in the following villages in the South Salsette Taluks according to programme :—

Name of Circle.	Number of villages.
Bandra	3
Borivli	5
Kurla	6

10. *Boundary Dispute.*—No boundary dispute came up for decision during the year.

11. *Record of Rights.*—The rewriting of the Record of Rights was completed according to programme in the following circles during the year :—

Name of Circle.	Number of villages.
Bandra	13
Borivli	14

The Kurla Circle was to be taken up for rewriting according to the Maxwell System, but was postponed as printed forms and detailed instructions were not received in time from the Settlement Commissioner and Director of Land Records, Poona. The Ambarnath Taluka also was due for rewriting, but was held up, pending receipt of printed forms and instructions under the new system.

12. During the year under report 36 Kam Jasti Patrahs, affecting 462 Survey Numbers were received, and, after due scrutiny were sanctioned by me and returned to the District Inspector for further action.

13. The District Inspector used in 2 cases the power to levy fines under section 135-F of the Land Revenue Code, given in Government Order, Revenue Department, No. 1457, dated 25th May 1921.

14. *Establishment.*—The District Survey Office staff is reported to be working satisfactorily, and Mr. Bhatkar, the District Inspector, efficiently controlled the work of the office. A statement is enclosed to show the details of work done by the District Inspector during the year.

My office consisted of one Head Clerk, Mr. B. B. Nadgir, whose services have been useful and satisfactory.

I have the honour to remain,

Sir,

Your most obedient servant,

W. J. NEWLAND,
Superintendent, Land Records,
Bombay Suburban Division.

No. 89 of 1923.

OFFICE OF THE SETTLEMENT COMMISSIONER
AND DIRECTOR, LAND RECORDS, BOMBAY
SUBURBAN DIVISION.

Old Custom House Yard, Fort,
Bombay, 1st December 1923.

Submitted to Government.

2. As in last year a separate divisional report has not been compiled as Mr. Newland's report covers the whole of the Bombay Suburban Division. The work would seem to be generally satisfactory but the Superintendent, Land Records, brings to light an important matter in the failure of Officers concerned to give prompt notice of lands acquired and agricultural lands converted to

non-agricultural uses. Steps have apparently been taken to remedy this and the Collector, Bombay Suburban District, and Salsette Development Officer will further be addressed regarding it.

3. Mr. Newland has continued to conduct the office and work of Superintendent, Land Records, with smoothness and efficiency.

J. R. MARTIN,
Settlement Commissioner and
Director of Land Records,
Bombay Suburban Division.

STATEMENT I.

Statement I showing Crop, Waste, Boundary Marks and other Inspection carried out by Circle Inspectors in the district during the year 1922-23.

1 Name of District.	2 Number of Circle Inspectors in the district.		3 Number of villages in the district.	Crop and Tenancy Inspection.					Waste Inspection.						REPAIR OF BOUNDARY MARKS.				Inspection of Tegal work.		21 Remarks.
	3 Total.	4 Numbers in specked.		5 Number of days actually devoted to inspection work (average).	6 Total number of occupied Survey Numbers.	7 Number of Survey Numbers and sub-divisions.	8 Number of Waste numbers other than forest.	9 Number inspected.	10 Arrears, past year.	11 Current year's programme.	12 Arrears, past year.	13 Current year's programme.	14 Arrears, past year.	15 Current year's programme.	16 Average number of days spent by Circle Inspectors on inspection and repairs.	17 Number of Tegal works examined.	18 Number in which work was finished.	19 Number of entries checked in Birth and Death Registers.	20 Number of entries checked in Village Forms VI and VII.		
Bombay Suburban District.	4	92	73	148	6,460	1,066 H 4,697	566	119	1	13	1	13	223	977	15,675		

H. SMITH,
*for Settlement Commissioner and Director of Land Records,
 Bombay Suburban Division.*

STATEMENT II.

Statement II showing the measurement and classification work performed by the Circle Inspectors during the year 1922-23.

Name of District.	Arrears at the beginning of the year.		Received during the year.		Disposed of during the year.		Balance at the close of the year.		Remarks.
	Measurement.	Classification.	Measurement.	Classification.	Measurement.	Classification.	Measurement.	Classification.	
	S. Nos.	S. Nos.	S. Nos.	S. Nos.	S. Nos.	S. Nos.	S. Nos.	S. Nos.	
Bombay Suburban District.	98	5	806	18	806	15	94	3	***

*** This statement includes the work done by the District Surveyor.

STATEMENT III.

Statement III showing the test of Village Officers' and Circle Inspectors' work by Sub-Divisional Officers and Mamltdars in the district during the year 1922-23.

Name of District.	Number of villages.			Number of boundary marks examined.		Number of Survey Numbers in which Crop and Tenancy Records were inspected.		Number of villages in which Birth and Death Registers were checked.	Number of entries checked in Village Forms VI and VII.	Remarks.
	Total in district.	Number inspected.	Number of boundary marks examined.	Village Officers' work.	Circle Inspectors' work.					
1	2	3	4	5	6	7	8			
Bombay Suburban District—										
S. D. O. 1	...	...	...	4	4	6	60		
Mr. 2	92	44	179	195	1,017	35	2,651 (V. F. VI), 622 (V. F. VII).			
			H 620	H 1,042						

H. SMITH,

for Settlement Commissioner and
Director of Land Records,
Bombay Suburban Division.

STATEMENT IV.

Statement IV showing the details of work done by the District Inspector of Land Records, Bombay Suburban District, during the year 1922-23.

Name of district.	Number of villages in the District.		Number of days devoted to all kinds of inspection.	Number of Circle Inspectors.	Number of Circles.	Circle Inspector's work.	Crop and Waste Inspection numbers tested.			Number of boundary marks examined.		
	Total.	Inspected.					Early.	Late.	Waste.			
1	2	3	4	5	6	7	8	9	10	11	12	13
Bombay Suburban District.	98	63	196	4	4	...	30	...	...	...	9	27

Name of district.	Entries in the Return of Population and Agricultural Stock tested.	Entries in the Birth and Death Registers tested.	Number of Survey numbers tested.			Number of entries in Village Forms VI and VII tested.	Number of Village Accountants examined in measurement work.	Taluka Forms XX to XXIII tested.	Number of Taluk Works examined.	Number of entries in Village Form XVI inspected.	Remarks.	
			Measured by the Circle Inspector.	Classed by the Circle Inspector.	Measured by the District Surveyor.							Classed by the District Surveyor.
1	14	15	16	17	18	19	20	21	22	23	24	25
Bombay Suburban District.	...	284	310	...	173	10	2,069	...	...	...	69	

H. SMITH,
for Settlement Commissioner and
Director of Land Records,
Bombay Suburban Division.

Department of Land Records.

Annual Report of the — for the year
1922-23.

GOVERNMENT OF BOMBAY.

REVENUE DEPARTMENT.

Resolution No. P.—62.

Bombay Castle, 22nd February 1924.

Letter from the Superintendent of Land Records, Bombay Suburban Division, No. 1226 dated 24th September 1923—Submitting the Annual Report of the Department of Land Records of the Bombay Suburban Division for the year 1922-23.

Memorandum from the Settlement Commissioner and Director of Land Records, Bombay Suburban Division, No. 89 dated 1st December 1923.

Memorandum from the Commissioner in Sind No. P.—85-I. dated 10th October 1923.

Letter from the Settlement Commissioner and Director of Land Records No. A.D.—124 dated 11th January 1924—Submitting copy of the Report of the Department of Land Records in the Bombay Presidency for the year 1922-23 and making remarks.

RESOLUTION.—The progress of measurement and classification work is on the whole satisfactory, although arrears have increased in some districts. Special attention should be paid towards the reduction of these arrears as far as practicable. Government note with satisfaction that the measurement work in the Northern Division is now self-supporting; and with the increase in the measurement fees from January 1923, there is not likely to be a deficit on this account in the Central and Southern Divisions also.

2. The Settlement Commissioner remarks that for want of budget provision for field parties, Government work ordinarily done by such parties had to be suspended. A provision of Rs. 52,000 has been made for this purpose in the budget for 1923-24 and steps have been taken to provide sufficient funds in next year's budget also. Government trust that with the help of these provisions such important Government work as may have been left over will be taken up and completed forthwith.

3. As the Settlement Commissioner observes, the question of city surveys is now one of increasing importance. Great advance has already been made in city surveys and the work of maintaining them is in progress in many places. This maintenance work is done mostly at the public cost and the question of making it self-supporting is under the consideration of Government.

4. Government note that the very important work of keeping the land records up-to-date has been allowed to fall into arrears and neglect in the Bombay Suburban Division. The Settlement Commissioner and Director of Land Records of that Division should be requested to report to Government at an early date the result of the steps which he proposes to take to remedy this serious defect in the administration which is, otherwise, on the whole, satisfactory.

5. Government will await the report promised by the Commissioner in Sind in paragraph 2 of his report as regards the advisability of reducing the number of supervising tapedar and appointing one supervising tapedar per taluka for measurement work and maintaining additional permanent measures, with a view to more efficient performance of survey work in Sind.

6. The Governor in Council is pleased to notice the good work performed by the Land Records Department under the efficient supervision of the Directors concerned.

By order of the Governor in Council,

A. R. DALAL,

Deputy Secretary to Government.

G. R. No. P.—62, R. D., dated the 22nd February 1924.

To

The Commissioner in Sind,

The Commissioner, N. D.,

The Commissioner, C. D.,

The Commissioner, S. D.,

The Commissioner, Bombay Suburban Division,

All Collectors, including the Deputy Commissioner, Upper Sind Frontier,

The Settlement Commissioner and Director of Land Records,

The Settlement Commissioner and Director of Land Records,
Bombay Suburban Division,

The Accountant General,

The Director of Information,

The Private Secretary to His Excellency the Governor,

F. G. H. Anderson, Esquire, I.C.S.,

J. B. Martin, Esquire, I.C.S.,

The High Commissioner for India (by letter).

No.

of 1924.

Copy forwarded for information and guidance to



Report
on the
Land Records Administration
of Burma

For the Year ended
the 30th June 1924.

Z438, 2117
F4

Rangoon: Superintendent, Government Printing and Stationery Burma.

1924

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[The maximum limit of the text of the Report is 13 pages.]

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RESOLUTION
ON THE
LAND RECORDS ADMINISTRATION REPORT
OF BURMA

For the Year 1st July 1923 to the 30th June 1924.

READ—

- (i) The Report by the Commissioner of Settlements and Land Records Burma, on the Administration of the Land Records Department in Burma during the year ended the 30th June 1924.
- (ii) The Review of the Report by the Financial Commissioner, Burma.

RESOLUTION.—His Excellency the Governor-in-Council orders that the Report and the Financial Commissioner's Review thereon be published.

By order of the Governor-in-Council.

A. E. H. KILLICK,

*for Secretary to the Government of Burma,
Department of Finance and Revenue*

The Land Records Administration Report of Burma for the year 1923-24 is submitted for the information of Government.

2. *Paragraph 1.*—A Bill to allow of lump sum assessments being introduced into Lower Burma was thrown out by the Legislative Council in August 1924. This, however, does not affect the question of the proper settlement of areas in which cultivation is extending rapidly. It is obviously impossible for the Revenue Surveyor to decide as to ownership of holdings or holding boundaries in such areas. The most hopeful solution of the problem seems to lie in the creation of a Government Estate staff strong enough to take over the land before rights have been acquired and to distribute the land equitably when it is ripe for cultivation.

Whilst it is no doubt trying for the Land Records staff to have no definite orders as to the procedure to be followed I do not think that the delay in republishing the Land Records Manual is very greatly to be regretted. The modifications in the registers now proposed by Mr. Rees are such a great improvement upon those tentatively introduced that the delay has already been compensated for by the greater efficiency that will result. Another result of the delay is the successful experiment of writing up the tax-tickets by Surveyors. There are still, as noted in the report, points upon which opinion is still divided. It is of the utmost importance that the system should be crystallised before Mr. Rees goes on leave but the delay has hitherto, in my opinion, been an unmixed blessing.

3. *Paragraph 4.*—The present system of Survey allowances has proved almost impossible to work in spite of all efforts to simplify it. Mr. Rees is now at my request preparing an entirely new scheme which will give practically the same results with a tithe of the clerical work involved in the present scheme.

4. *Paragraph 5.*—I have very grave doubts as to the utility of general *kwin* inspections by Township Officers and consider that they should be held responsible for inspecting *kwins* where crop failures are serious and that this should be their main object in inspections. They are rarely if ever sufficiently conversant with the Land Records Manual to be able to criticise the Surveyor's work usefully in other directions.

5. *Paragraph 6.*—During the year the post of Inspector-General of Registration has been taken from the Excise Commissioner and is vested for the present in the Financial Commissioner. It is, however, intended ultimately to place the Commissioner of Settlements and Land Regards in charge of the Registration Department as he is the officer who is chiefly affected and is also the only officer who can judge of the extent to which transfers are made without the necessary Registered Deeds. The recent ruling of the High Court on this subject is, however, likely to affect the number of deeds registered adversely.

6. *Paragraph 7.*—The present record of tenancies in Upper Burma imposes a very heavy burden on the Surveyor and very largely neutralises the saving of work that has been effected in other directions. Steps should be taken to reduce the volume of apparently needless work.

7. *Paragraph 8.*—What one must hope is an unusual number of wrong assessments on a large scale is mentioned in the text of the Report. It is, however, only on turning up Statement III that it is realised that the number of over assessments is 40 per cent. greater than the number of under assessments and that the net result of inspections is an increase of less than Rs. 7,000. It is of course true that for the purpose of estimating the accuracy or otherwise of Land Records work the two sorts of errors should be added instead of subtracted, but the financial results of the inspections show that apart from two or three serious frauds and blunders the tendency of the Surveyor is to over assess rather than the reverse. It will also be noted that in Toungoo, Thaton and Yamethin the errors were of the sort that can be detected in office rather than in the field. The application of correct rates in a *kwin* is a matter for which every Superintendent of Land Records should consider himself personally responsible everytime that a change in the *kwin* rates is notified. When once the correct rate is applied it is unlikely to be erroneously altered without immediate detection. This defining of responsibility might well be incorporated in the Land Records Manual.

8. *Paragraph 13.*—From Statement IV it would seem probable that the instructions are interpreted in different ways in different districts. Only by including surveys of house sites in towns could 101 surveys cover only 24 acres in Yamethin whereas it is scarcely likely that no house sites were surveyed in 8 of the most important Lower Burma districts. The Report makes no mention of one class of grant that probably accounts for a number of surveys, *viz.*, grants of land to *ex* soldiers, of which a number have been issued in Tharrawaddy and elsewhere.

9. *Paragraph 23.*—Divisional Commissioners are being consulted on the subject of repealing the Boundary Act and adding a section or two to the Land Revenue Act and Regulation to take its place. The procedure under the Boundaries Act is rarely followed and when followed seems to result in more harm than good.

It is doubtful whether Superintendents of Land Records could find time to take action against encroachers on grazing grounds. The question of transforming the grazing grounds of Bassein and the neighbouring districts into Government Estates is being considered.

10. *Paragraph 26.*—It is understood that the Commissioner of Settlements and Land Records is enquiring into the staff of reservists required to prevent the need of employing unpaid apprentices as Revenue Surveyors.

11. Considering that the Department is in a state of transition from old to new methods of work the results of the year's work must be admitted to be satisfactory.

W. E. LOWRY,

Offg. Financial Commissioner, Burma.

The 3rd October 1904.

REPORT
ON THE
LAND RECORDS ADMINISTRATION OF BURMA
For the year ended the 30th June 1924.

CHAPTER I.

INTRODUCTORY.

1. Owing to the bad season, the department had a strenuous year. The work was on the whole satisfactory, but in poor and remote tracts the task of the surveyor is too heavy, and while the need of inspection is greatest it would be too costly to provide it on an adequate scale. A simpler method of assessment is the only solution for such areas. In rapidly developing tracts again it is difficult to keep an accurate cadastral record, and it is unfair to expect the surveyor to decide which rival claimant to occupation he should enter on the map. The time is passed when ownership of valuable waste land should vest in the person who first gets his name on the map, as is usually the case in practice at present. The inspectorate is still the weakest link in Land Records Administration, and improvement will necessarily be slow.

Two cases of misconduct by Superintendents occurred during the year, but I consider that the standard of the service as a whole is good.

The new procedure introduced last year continued to work well and results in a saving of work. I had hoped to give finality to it by completing the draft manual already issued, but changes in the Land Revenue Directions and the suggestions of the Financial Commissioner for further improvements have prevented this. In my opinion it is of paramount importance to crystallise the procedure, which has been in the melting pot for two years, as early as possible. Opinion is still divided as to whether assessment rolls should be written up kwin by kwin or after crop-marking is completed. The former system is prescribed, the latter is sometimes practised. The most important events of the year were the reconstitution of the special survey party, the reorganization of the Land Records cadre, and the inauguration of direct recruitment of inspectors. The status of the Commissioner of Settlements and Land Records and of the Deputy Director was reduced. Successful experiments were made with printing holding boundaries and other details now entered by hand on the maps, and with employing the surveyor to write the tax receipts.

The map which has hitherto accompanied this report has been discontinued.
Arrangement of Report.

CHAPTER II.

LAND RECORDS.

2. Complete land records are maintained in those parts of the province under supplementary survey, which show an increase in area from 32,096,473 acres to 32,335,887 acres since last year. The chief changes are the inclusion in the Hanthawaddy figures of 62,599 acres of waste land grant kwins previously omitted, a decrease in Thaton of 6,916 acres due to erosion by the sea, a decrease of 27,467 acres in Tavoy due to abandonment of supplementary survey on the introduction of fixed assessments in remote areas, and a large increase of 123,124 acres in Shwebo on recalculation at resettlement. Small additional areas have been brought under supplementary survey in Akyab, Katha, and Kyaukse. Myitkyina appears in this report for the first time owing to the transfer of some kwins from Katha, and there has also been a change of district boundary between Amherst and Tavoy.

The occupied area dealt with by the department is 19,225,059 acres or much the same as last year; the assessment by the department including cess but excluding municipal assessments decreased from Rs. 3,97,87,712 as published in last year's report to Rs. 3,81,55,942. Some corrections have now been made in the figures for last year, when some districts wrongly included cess in column 8A. There is a notable decrease in Government assessment in rural areas under supplementary survey from 351 to 337 lakhs, the cultivated area decreasing slightly and the assessed area decreasing by 800,000 acres.

The cost of the department as reported in Statement 2 after adding the cost of survey schools and a portion of the cost of the controlling office, was Rs. 23,58,724, or 6.6 per cent. of the total assessment in column 24, as against Rs. 23,75,574 and 6.3 per cent. last year.

The degree of economy effected is obscured by an increase of Rs. 20,000 in Rangoon City which is not under departmental control. That there is a real and substantial decrease in cost is indicated by the marginal figures for the last two financial years, which do not include the large saving under survey schools.

Variations in areas occupied and cultivated have been dealt with in the Season and Crop Report. Apparent decreases outside supplementary survey are partly due to last year's figures for Myingyan and

Head of account.	1922-23. Rs.	1923-24. Rs.
Land Records (voted)	21,82,729	21,37,086
Controlling Office ..	1,53,549	1,23,640
Total	23,36,278	22,60,726
Saving	75,552	...

Yamethin having included tracts not assessed by the Land Records Department. The decrease in assessments was due to extensive failures in the dry zone and to disastrous floods in Bassein and parts of other Lower Burma districts. In Bassein alone assessment declined by 3½ lakhs, while four other Lower Burma and seven Upper Burma districts declined by over a lakh. In Kyaukse new settlement rates contributed to a decline of 1·67 lakhs. In Pyapon there was an increase of 1·48 lakhs due mainly to new settlement rates, and the introduction of the full demand on the expiry of intermediate rates in parts of Pegu contributed to an increase of 1·12 lakhs. In Amherst and Yamethin the assessment declined largely in spite of the introduction of full rates in parts of these districts. Shwebo had a good season and shows an increase of 1·39 lakhs. A factor contributing largely to the failure of revenue to expand in the last two years is the increasing use by surveyors in Lower Burma of their new power to leave areas unassessed when the crops have been destroyed. There is no evidence of abuse of this power, and however unsatisfactory the financial result may be, it appears that the department is fulfilling its function of making the revenue fluctuate with the season.

Two towns, Waw and Victoria Point are newly included in Statement I.

3. The cadre of the Land Records Service was revised during the year, and a new grade of Extra Assistant Superintendents of Land Records sanctioned in order to put the supply of Assistant Superintendents for heavy districts on a satisfactory footing.

The increase of two inspectors is due to the inclusion of Myitkyina, to a temporary appointment pending the absorption of the teacher of the closed Katha Survey School in the permanent establishment and to an additional appointment in Kyaukpyu where the number previously sanctioned was insufficient. There is a decrease of one in Mandalay. The sanctioned number of surveyors remained the same, but some vacancies were unfilled in Akyab, Myaungmya, and Pyapon in anticipation of reductions in the establishments which have been rendered possible under the new procedure. An examination of the establishment in Prome, Pegu, Tavoy, and elsewhere has shown that further reductions will be possible, and these are already being pushed on. There was a considerable economy in temporary staffs for such purposes as island assessments, owing to better organization. The number of peons was reduced, and daily allowances to surveyors were substituted for chainmen.

4. The effect of the above economies was a reduction in expenditure. A further small improvement in the pay of surveyors was effected, and the pay of peons including those attached to inspectors was raised. In spite of this and of the fact that the full effect of the new time-scales, especially in the higher ranks, is only gradually being worked up to, as well as of the more liberal leave rules, the total cost is rather less than last year. The Survey allowance is not included in this statement, whereas the pay of survey chainmen which it has superseded was, so that exact comparison with last year is impossible. Again, part of the saving is nominal only, being due to less expenditure on

copying fees which are only a book entry, but the total saving would have been larger but for an exceptional expenditure on temporary clerks in connection with Mr. Couper's Tenancy enquiry.

Maung Ba Chit (1) in Man-bin and Mr. J. F. Williams in Pyapôn deserve mention for economical working. Mr. C. S. Devas, Superintendent of my office, initiated considerable economies in the office establishment.

5. The field work in all but nine districts was inspected by the Commissioner of Settlements and Land Records, Burma, or his assistants. Pyapôn has been omitted two years running, but the work there came under scrutiny in the course of Settlement

*Inspections,
Statement III.*

inspections. No field inspections by Commissioners are reported. Inspections by Revenue Officers rose from 5,145 to 5,322. Many officers still failed to inspect the minimum number prescribed. The Deputy Commissioner, Tharrawaddy, again made no kwin inspections, nor did the Deputy Commissioners, Amherst, Mergui and Myingyan; the last however examined 23 kwins in connection with remission. The Deputy Commissioners mention the following officers for good inspection work:—

Subdivisional Officers—Maung Chit Kaing (Zigôn), Maung Ba Pe (Shwedaung), Mr. A. J. S. White (Allanmyo), Maung Ba Shein (Myaungmya), Mr. Nicholas (Pyinmana), Maung Po Sa (Salin).

Township Officers—Maung Lwin (Allanmyo), Maung Pe Gyi (Mindôn), Maung Ba Than (Kyaunggôn), Maung Hla (Thabaung), Maung Tha Dun (Ngaputaw), Maung Ba Gyaw (Lemyethna), Maung Po Kywe (Einmè), Ah Shein (Wakèw), Maung Sin Gyaw (Tenasserim), L. Foke Kyia (Yesagyo), Maung Ba (Myaing), Maung Tun Win (Ye-u), Maung Dwe (Ngazun), Maung Po Shin (Chaung-u), Maung Zan (Mahlaing), Maung Ba Min (Salin).

Many of these inspections are of little use, being undertaken in some cases in May or June, and in one case as many as eleven purporting to be done in one day, or in another six of the inspections being done before the surveyor's visit. In some districts improvements have resulted by the adoption of the suggestion in the last year's report that Revenue Officers should accompany the Superintendent of Land Records on an instructional inspection.

Inspections by Superintendents in rural kwins rose from 3,824 to 3,963. The following Superintendents made over 50 inspections:—

Mr. Nicholas (Toungoo), Mr. B. F. Cooper (Katha), Maung Tun E (Lower Chindwin), Maung Po Aung (Upper Chindwin), and Maung Po Kyia (Yaméthin) who made 180. The number of inspections was very inadequate in Thayetmyo, Tavoy and Magwe. In Bassein the low number is due to the Superintendent being engaged on other duties in the flooded area.

The average number of inspections by inspectors in rural kwins increased from 130 to 137. The proportion of holdings checked in inspected kwins remains the same at rather under a third. In Sagaing the proportion goes down to one-fifth. The improvement in number of kwins and holdings inspected is general, except in Thatôn where an increase in number of kwins is accompanied by a decrease in number of holdings, and in Magwe.

6. Only 79 per cent. of holdings were found correct as against Accuracy of Records. 81 per cent. last year. This is due mainly to surveyors not marking as failures all the fields that failed to mature, to detection of errors in the new tenancy register with which the surveyors are not yet familiar, and to greater attention being paid by inspecting officers to bringing the record of ownership up to date, and to making notes of unreported transfers. The work of getting the names of the present owners substituted for those of the previous generation is making progress under the new procedure, the details of which are being improved. More attention is required to eliminating abandoned holdings. The recording of simple mortgages is now being discontinued. The Deputy Commissioner, Pyapón, reports that the revision of the record at Settlement has made it as accurate as it possibly can be. Under Mr. McKertick in Prome the work is of a high standard. There is an improvement in the notification of mutations by courts and registration offices. The requirements of the Registration Act are generally ignored in Upper Burma, nor are mutations reported to the surveyors. The few cases that used to be reported were for the sake of the counter-foil which was regarded as a title deed, but this is no longer given.

7. Statistical work was on the whole satisfactory. The experience of this year indicates that it will probably be necessary to relieve surveyors in Upper Burma of the duty of collecting statistical information as to every tenancy, and possibly of marking field by field second crops when unassessed. The number of crops which are to be separately shown was reduced at the close of the year.

8. The errors affecting assessment which were detected show a large increase. This is chiefly due to the marking of failures as matured and assessable crops, either owing to the crop failing after the surveyor's visit, to the surveyor not visiting the field, or to his usual tendency to err on the safe side. Such cases are always numerous in a bad season.

The enormous number of material errors detected in Shwebo which had a good season indicates a low standard of work among the surveyors. Many of these errors were detected during special inspections ordered by the Superintendent Mr. Nolan, as a result of suspicious totals in the assessment rolls. In one case a holding area was fraudulently altered involving a loss of Rs. 132, and four surveyors by fraudulent marking of failures reduced the assessment by Rs. 900. In this district inspection resulted in the detection of underassessments to the extent of Rs. 5,000. In Toungoo underassessments of over Rs. 2,000, are attributed to the surveyors under-estimating the proportion of full crop obtained when marking outturns for purposes of remission, through using the stated normal outturns instead of the Settlement outturns as the figure for a full crop. In Thayetmyo inadequate inspection probably resulted in many failures being wrongly assessed. In Bassein some large extensions were found unassessed. In Ma-ubin careful inspection brought to light a considerable aggregate of wrong assessments. In Thaton an under-

assessment of over Rs. 3,000 was discovered, due to assessment at 10 annas instead of Rs. 1-10 per acre in certain tracts outside supplementary survey which has been going on for the last 16 years. Dishonesty, chiefly in showing matured crops as failures, was also detected in Mandalay, Myingyan, Magwe and elsewhere. In Meiktila a large fraud by a surveyor in last year's assessment was detected and the amount, Rs. 4,000, recovered. In Yamèthin a surveyor failed to apply the revised rates in 10 kwins. On the whole fair accuracy in assessment is achieved.

Tax tickets were checked in 5,644 kwins so far as reported, and in Thayètmyo fraudulent alterations after issue were discovered, which the headman alleged had been made by *athins* to get him into trouble. Some carelessness, mainly in areas, was discovered in Sandoway, Ma-ubin, Pakòkku, Katha. Meiktila (where some section writers entered the page totals instead of the individual assessment), and elsewhere.

The experimental writing of tax tickets by surveyors in Sagaing and Pyapón was very successful, and will be extended. Mr. E. L. George and Mr. J. F. Williams deserve credit for this success.

The assessment lists were written by the surveyors. There are some complaints as to the lack of information in the list, but they have no substance if the tax tickets are properly written, as the old assessment roll merely repeated the information in the tax ticket.

9. In Upper Burma the submission of rolls according to a fixed

Assessment Rolls programme was rather disorganised by the numerous failures and necessity for remissions. There was however no serious delay in getting them in by the due date. Rolls were unpunctual in Pegu, Toungoo, Thayetmyo, in Bassein and Henzada where the rolls were detained by remission officers, Tavoy, Mergui Sagaing, Kyaukse, and Myitkyina; and very unpunctual in Pakòkku, Mandalay and Myinzyan. In Thayetmyo, Magwe, Mergui, and some other districts the importance of an early start in field work is not fully appreciated, and in Magwe and elsewhere the temptation to cut the field season at the other end by getting in all the rolls before the due date needs to be resisted.

Supplementary assessments to correct errors were rather numerous on account of the exceptional season.

Plus and Minus

Statements.

10. Several more municipalities undertook their own assessments this year. The question of the unsatisfactory state of Land Records in towns outside Rangoon

Urban Areas. is under examination. It is due partly to want of strictness in urban administration by revenue officers, which makes the maintenance of an accurate record of title which shall correspond with the actual facts a difficult undertaking, and partly to defects in the procedure for demarcation and survey.

11. The unsatisfactory system of conducting the assessment survey of island lands by temporary surveyors is being

Island Surveys,
Statement IV.

replaced where possible by bringing permanent formations under survey, and by redistribution of charges so as to enable the work to be done by the permanent staff.

This reform still needs attention in some districts. As a result of this policy there is a decrease in the number of annual surveys in Statement IV and in the cost.

12. The apparent decrease in surveys in unsurveyed tracts is due mainly to some districts in previous years having reported the whole area assessed instead of that actually surveyed during the year. The policy of bringing the more developed areas under regular survey and of substituting a cheaper and more satisfactory method in the remainder is being continued. The inspection of *kwiis* under lump sum assessment by Revenue and Land Records officers was adequate except in Myingyan, and revealed little extension of cultivation. The system is on the whole satisfactory to the cultivators and the *thamadis'* distribution fair.

13. Conservatism keeps alive the system of obtaining new land by grant or lease in the Arakan and Tenasserim divisions; elsewhere it is not resorted to by the ordinary cultivator. These surveys and those of house-sites are now carried out usually by the regular or apprenticed staff. In the case of large areas for rubber and the like special hands are employed. Inspection of patta surveys in Sandoway and Toungoo seems to have been inadequate.

The practice of 'pointing out holding boundaries' otherwise than in the ordinary course of field work has been prohibited except under the orders of a superior officer, as it led to abuses.

The preparation of plans in police cases causes some inconvenience, as the surveyor, possibly under a misapprehension, is required to attend as a witness.

The Department performed numerous duties in connection with Land Acquisition plans and the like.

14. The progress made in the policy of stationing surveyors at Inspector's headquarters, which continues to meet with approval, was satisfactory in many districts but poor in others. It will be desirable eventually to provide government offices in many circle headquarters for the Land Records staff.

Survey recess work and the recalculation of holding areas require close supervision, and it is necessary to call surveyors whose headquarters are outlying, to circle or district headquarters for this purpose. Some districts also called them in for the compilation of statistics, though this should not be necessary. The recasting of holding areas received more attention this year, especially in Meiktila under Maung Mya, but its importance is not yet generally realized.

15. There were several losses by fire during the year. The number of inspections of subordinate offices was generally sufficient, except by the Superintendents of Bassein and Lower Chindwin, and their condition was on the whole satisfactory. A great deal more examination of the work done in the field and of the accuracy of the registers is possible at these inspections than is usually achieved.

Some useful office inspections were done by Revenue officers, but though in Akyab there were 51 such inspections, only in five districts were any carried out.

16. The condition of Record Rooms is generally satisfactory except in Pyapôn, and the depletion of stocks of Record Rooms. maps for use is being made good but is serious in Bassein, Shwebo and Sagaing. Many Deputy Commissioners failed to inspect the Record Room, and the Superintendent, Thayetmyo neglected this duty. All but 10 Record Rooms were inspected by one of the administrative officers.

It has transpired that the mapping of topographical changes on the Survey of India maps is made no use of in correcting these maps. The record of topographical changes has therefore been confined to such details and performed by such methods as are required for district purposes in the interval of editions of the Survey of India maps.

17. The Land Records offices are in the main efficient, but need improvement in Pegu, Pakôkku and Yamèthin District Offices. Administrative officers inspected all but eight offices. Many Deputy Commissioners and some Superintendents of Land Records failed to inspect.

The preparation of leave accounts is much in arrears, and is in my opinion beyond the capacity of the Superintendent of Land Records and his staff in many cases. The substitution of daily allowance for chainmen has thrown much additional work on the staff, and has proved a failure.

The quality of stationery has improved, but certain articles especially rubber, are still poor. I must again protest against the inadequate allotments by Commissioners for stationery; the surveyors have to make up the deficiency out of their own pockets. There was less delay in supply of forms than last year, but dislocation was caused in Sandoway, Pakôkku and Prome by late receipt.

There was an improvement in the punctuality of pay day in most sub-treasuries, but the importance of this is not realised in Bassein and some other districts.

18. Bulletins were published during the year dealing with the statistical aspect of the forecasts. They contain Forecasts. useful figures from past years. District forecasts were on the whole carefully prepared, but attention is needed to distributing the normal fixed for the district over the component circles.

19. Further progress was made in the revision of famine programmes, which have been extended to districts liable to flood. A change was made in the orders regarding the Weekly Crop Reports, which now show the agricultural situation as known at district headquarters on Saturday, instead of being synchronous for every township. Although in districts like Meiktila the year was probably the worst for some generations, no measures were needed to deal with actual famine.

CHAPTER III.

SURVEYS.

20. The statement would indicate that there is less survey work outstanding than last year in all districts except Hanthawaddy, Henzad, Myaungmya, Pakökkü, Katha and Lower Chindwin; but considerably more attention is required to the examination of survey requirements in the field and upkeep of Register IV from which the figures are derived. During the coming year the special survey party will be employed chiefly in Myaungmya where resurvey is necessary before settlement in Labutta Township, and in original surveys in Myitkyina.

21. 1,427 kwins were resurveyed during the year, or about the same area as last year. Of these 159 were done by the special survey party. Minor revision was done by the local staffs in 735 kwins as against 885 last year. Original survey was extended, mainly by the special survey party, to 153 kwins, the area being rather less than last year. Town surveys were done in 39 blocks as against 128 last year. Mining, rubber and oil areas were traversed by the special survey party over an area of 55 square miles as against 19 last year.

Hitherto the special survey parties, usually two in number, have been recruited temporarily year by year mainly from India. With a view to putting the party on a permanent footing as a nucleus to be expanded, according to the requirements of each year, by drafting in surveyors from the district staffs, and as a training ground to improve the professional standard of revenue surveyors, it was reorganised at the beginning of this year as a single party. It was still necessary to entertain a proportion of temporary surveyors and menials from India, but some of the work was done by 20 inspectors and surveyors deputed from the districts for advanced training. Two Probationary Assistant Superintendents and two probationary inspectors were also given training. The number of Indian menials last year was 324, this year it was 251, as 144 Burmans and Kachins were engaged as against 72 last year. Several of the tindals are old survey school pupils, and they are given an opportunity to learn surveying, and retained in the recess as computers, thus furnishing a valuable source of recruits for posts of revenue surveyor. It is intended also to open a central survey school as an adjunct to the party.

The work done by the party was even more scattered than usual, and consisted of the following:—

(a) In Pegu some 11,000 acres were resurveyed chiefly for colonization purposes, and 28,000 acres of Sittang accretions were brought under original survey, at a cost of Rs. 18,649, or 7½ annas per acre. (The cost given in this paragraph refers to field work only except in some cases where the mapping was done in the field.)

(b) In Pyawbun an occupied area of 56,712 acres was resurveyed for settlement purposes, and the traces supplied to the Settlement

Officer in the field. The cost was Rs. 10,884, or 6 annas an acre. It was found that a few of these kwins did not really need resurvey. This unfortunate waste was due mainly to frequent changes of Superintendent, but indicates the necessity of greater attention to the survey programme, Register IV.

(c) In Myitkyina, village boundaries were demarcated and traverse completed over an area of 95,000 acres, and original survey completed over an occupied area of 15,101 acres, at a total cost of Rs. 29,046. The operations were rather costly owing to the difficult nature of the country which contains much kaing jungle, to sickness, and to the fact that the work was done in the course of the advanced training of Land Records hands. The year's programme in this district was not completed owing to the men falling sick in large numbers in April and May.

(d) In the islands of Magwe, an occupied area of 25,062 acres was traversed, the cadastral survey being assigned to the local staff. The cost was Rs. 3,051 or Rs. 78 per square mile.

(e) In Myaungmya, 35,000 acres were traversed in the difficult delta country of Labutta Township, with a view to cadastral resurvey and settlement in the coming year. The cost was Rs. 8,079 or Rs. 145 per square mile. This is high but includes the cost of returning 40 coolies to Hazaribagh. The local staff was ordered to help in these operations, but the Superintendent did not succeed in giving any useful assistance.

(f) The gardens of Madaya Township, Mandalay, were resurveyed for settlement purposes, and the mapping completed in the field, on the 32-inch scale. The cost was Rs. 4,801 or Rs. 1-6 per acre.

(g) Fourteen kwins in the Maymyo subdivision left over from last year were surveyed at a cost of Rs. 2,639, or 10 annas an acre.

(h) The traverse and survey of Yenangyeung town on the 64-inch scale was begun, and has cost so far Rs. 3,791. There was difficulty about the demarcation. The inspector employed on the traverse who has been engaged on town surveys for several years also turned out unsatisfactory, and some of the work has to be redone.

(i) Kyōnmangè and Kyaikpi towns in Myaungmya district were surveyed on the 64-inch scale at a cost of Rs. 6,580 or Rs. 11-15 per acre. The survey of Labutta, which was also on the programme, had to be postponed owing to the commencement of dredging operations in the town.

(j) Fourteen mining leases covering 12.18 square miles, 10 in Mergui and 4 in Tavoy were traversed. The work on another lease in Mergui was abandoned through the applicant failing to demarcate. The leases traversed at Victoria Point were not connected with a Great Triangulation Station as no guide could be provided by the manager or found elsewhere. The connection will be made next year.

In Mergui district, rubber blocks covering 15,600 acres (24.37 square miles) were also traversed. The total cost of these operations was Rs. 15,132 including line clearing done for the lessees in Tavoy district.

(k) In Minbu district, the Ngahlaingdwin oil area of 10 square miles was retraversed, as the previous traverse done by a local

inspector had been found defective. The cost was Rs. 3,005 or Rs. 160 per square mile.

Great credit is due to the successive Superintendents in charge, Mr. D'Souza and Maung Ba Hla, for having carried out a scattered programme larger than that originally laid down, at reasonable cost. Sickness and strikes added to their difficulties, while much of the work was done by men not fully trained and to whose instruction much attention had to be devoted. The work done by these men though slow is more reliable than that of the more sophisticated professional surveyors previously employed.

Inspectors Mahomed Salin, Maung Ba Sein and Tirath Raj also deserve commendation:

The amount of surveys done was very satisfactory in Akyab, Pegu, Toungoo, Thayetmyo, Ma-ubin, Tavoy, Surveys by Local Staffs. Sagaing, Yamethin, and Minbu, but was unsatisfactory in Bassein, Myaungmya, Pakokku, and Lower Chindwin. In Katha Mr. B. F. Cooper again completed a large programme. The work was adequately partialled and found to be on the whole satisfactory. Arrangements have been made for the mapping to be done by the special survey party for districts with a short recess season.

22. The figures for the cost of surveys by the local staff include in most cases the pay of the permanent surveyors during the time spent on survey, their survey allowances, and contingencies. The Yamethin and possibly some other district figures seem however to exclude the pay of surveyor. The survey allowance, which replaces the old system of chainmen whose pay of Rs. 12 a month was insufficient, slightly increases the cost, but the difference from last year's figures is not noticeable. The work of the special survey party was on the whole economically done, but the cost was increased by the necessity of moving large staffs from one field of operations to another.

23. Tenure enquiries were conducted in connection with the survey of Yenangyaung, and a small demarcation staff was entertained, but the work done was of little value and was stopped. It is very doubtful if the procedure under section 2 of the Boundaries Act is ever useful, as the more informal procedure under section 28 is all that is required for survey purposes, while questions of possession are more easily dealt with after the maps have been made.

In the Myaungmya towns and elsewhere the necessary demarcation for survey purposes was done by the ordinary staff. In Mandalay some useful work was done by the ordinary staff in setting out on the ground the layout of a new residential quarter. In Thaton, fishery demarcation was done by a special staff prior to survey by the local surveyors. Here again section 28 of the Act was found sufficient.

In the Upper Chindwin, holding-marking was conducted by the local staff in kwins to which supplementary Holding-marking, survey is to be extended. Elsewhere holding marking was done in the field after resurvey, except in some districts which persist in copying the boundaries from the old maps.

The duty of repair of marks has now been transferred from the Survey Marks headman to the surveyor, and it will be interesting to see if this will remedy for the neglect from which they have suffered.

	Supdts. and Asst. Supdts.	Inspectors,	
Marks inspected ...	10,517.	88,785	The marginal table shows the result of inspections so far as reported.
Found protected ...	8,040	67,043	
Boundary Marks.	Boundary marks in towns are much neglected.		

Grazing grounds still need more attention, and it would probably be better to have the Superintendent himself deal with encroachments instead of reporting to the revenue officers. The upkeep of grazing grounds in Bassein has been neglected for many years, and the Superintendent is engaged in straightening things out.

24. Rs. 2,910 was spent on pay of Demarcation Officer in Yenangyaung, and Rs. 1,089 in Thatón.
Cost of Demarcation.

CHAPTER IV.

RECRUITMENT, TRAINING AND CONDUCT.

25. In pursuance of the decision arrived at last year the number of schools was reduced from 17 to 6. The central training school at Shwebo has not yet opened.

There were 219 applicants for admission of whom 67 were rejected or voluntarily withdrew. There was naturally a large increase of applicants in the surviving schools. The total number of admissions during the term was 152. On the 30th June 1924, the number on the rolls had declined to 102 owing to voluntary withdrawals and to removals for failure to pass the preliminary public examination in surveying.

There has been a still further improvement in the educational qualifications of the pupils. Of the number on the rolls at the end of the term, 61 per cent. held certificates for the VIIth and higher standards as compared with 58 per cent. last year. In the Moulmein and Kyaukse schools the percentage this year was 81 and 74 respectively. There was only one student with qualifications below the VIth standard.

Scholarships were awarded only to 9 districts where recruitment needed stimulating, and the number awarded was 29 as against 144 last year. The exemption from payment of fees was largely restricted. Sixty-seven pupils paid fees.

Hostels are provided at four of the six centres, the exceptions being Bassein and Kyaukse. The hostel at Promé which accommodated 19 students is the only one that has worked satisfactorily. The one at Moulmein was not patronised at all. The school accommodation is in most cases satisfactory.

The provincial expenditure as a result of the reduction of the number of schools from 7 to 6 fell from Rs. 49,608 in the year previous to Rs. 15,164 in the year under report. A comparison of the figures for the six schools in session during the year also shows an appreciable reduction in the expenditure from Rs. 20,371 to Rs. 15,164 in spite of an increase in the number of pupils. The heads under which this decrease is reported are scholarships (Rs. 4,824) and contingencies (Rs. 1,142).

Several causes have contributed to the decrease under contingencies the chief of which is a saving in house rent effected at Bassein by accommodating the school in a Government building. The chief increase in expenditure is under establishments (Rs. 676) and is due to annual increments and leave allowances of absent Teachers, and increase in pay of peons.

The average cost of each pupil presented from these six schools this year was Rs. 144. The average cost in the seventeen schools last year was Rs. 185 and in these six schools Rs. 200 per pupil. The highest cost this year (Rs. 261 per pupil), was at Prome where only 12 out of 21 admissions were presented for the final examination. The lowest cost is reported from Ma-ubin where it was Rs. 109.

With the exception of the school at Minbu all the others were adequately inspected by the Superintendents; the number of inspections per school for the term averaged 13. The Minbu school was inspected only three times by the Superintendent. Of the Deputy Commissioners only those of Ma-ubin and Kyaukse inspected Survey Schools. None were inspected by Divisional Commissioners and only one (Minbu) by officers of the Educational department. Administrative officers of the Land Records department inspected four of the six schools; those not inspected were Moulmein and Minbu.

The attendance of the students was good and their conduct, except for a few cases of indiscipline in the Ma-ubin school, is reported to be satisfactory.

The percentage of passes in Revenue Law is 64 and in surveying 50 as compared with 90 and 68 respectively in the year previous. Only two schools (Minbu and Moulmein) presented candidates for Revenue Law. Except in Kyaukse the passes in surveying are poor. All but 5 out of 27 candidates presented from Ma-ubin failed. At the other four centres the results were not much better. The failures were mainly in the theoretical examination. An attempt to raise the standard of the examination as a result of the concentration of the school course on surveying is partly responsible for the unsatisfactory results. The examination in Arithmetic has been abolished, and that in Revenue Law postponed until the student has joined the department and had some practical experience.

Maung Ba Saing (Kyaukse) is the only successful survey teacher still remaining.

The Survey School at Ma-ubin was closed at the end of the school term under report. There will thus be only five schools next year. It is intended in future to train the majority of recruits by attaching them to surveyors instead of sending them to a survey school.

26. The sanctioned number of paid reservists and apprentices is admittedly insufficient, and pending examination district by district, unpaid apprentices up to 3 per cent. of the staff are allowed. As the paid apprentices are usually officiating in leave vacancies, their systematic training is difficult. During the year 100 apprentices qualified as reservists, of whom 38 qualified without examination as they were officiating as surveyors. Thirty-nine apprentices have been on the books for over a year without receiving a certificate. More attention was paid to weeding out inefficient apprentices.

27. The necessity for thorough instruction of the staff by practical demonstration at the beginning of the season is beginning to be realized. The work is somewhat handicapped by delay of final issue of the new Manual in English and Burmese.

As already explained, men were deputed from districts to the special survey party for advanced survey training. This does not however relieve Superintendents of their duties in this respect, and theodolite training in particular needs more attention.

28. Superintendents in the course of the year gave Land Records training to eight officers of the Indian Civil Service, six of the Burma Civil and Burma Frontier Services, and 19 of the Subordinate Civil Service.

One probationer completed his training, and four others including two newly appointed men, were under training during the year.

29. During the year 31 Inspectors and surveyors died, 11 were dismissed, 37 removed, and 141 otherwise punished. These totals are swelled by the Yaméthin figures, where the whole staff was punished, mainly by stoppage of increment, as a result of last year's scandal. The Deputy Commissioners report the conduct of staff to be poor in Thayetmyo, Bassein, Pyapôn, Shwebo and Meiktila. It would also appear to be unsatisfactory in Pegu and Myaungmya. In ten districts it is reported to be fair, and in the remainder good or satisfactory.

CHAPTER V.

ADMINISTRATION.

30. At the beginning of the year the Financial Commissioner, Mr. H. Clayton, C.I.E., I.C.S., held charge of the department. Mr. O. M. Rees, I.C.S., was Commissioner of Settlements and Land Records from 13th July 1923 for the remainder of the year. Mr. L. E. Palmer was Deputy Director until the 16th July 1923, and for the remainder of the year Mr. A. H. Seymour, I.C.S. was Assistant to the Commissioner. Mr. R. S. Carrapiett was Assistant Director up to the 25th March 1924, and Mr. F. A. D'Souza, after that date.

FOR THE YEAR ENDED THE 30th JUNE 1924.

15

One Superintendent, Mr. H. A. Hardless, was removed from the service, and two others Messrs. L. Aubert and C. E. L'Estrange, were under suspension at the end of the year. One Assistant Superintendent Maung Kyaw Nyun was appointed to the Burma Civil Service. Mr. L. E. Palmer, to whose service a tribute was rendered in the 1921-22 Report retired during the year.

The services of one probationer, Mr. W. R. M. Morris, were dispensed with as he was unsuitable. Two new probationers were recruited.

The following officers not already mentioned have come to notice for good work during the year. Mr. R. F. Craen, Mr. P. P. L'Estrange, Maung On Pe, A.T.M., Mr. J. H. Reynaud, Mr. D. Carey, Maung Po Kyin, and Maung Po Aung.

O. M. REES,

*Commissioner of Settlements,
and Land Records, Burma.*

RANGOON, 29th September 1924.

STATEMENT No. I—Area dealt with by Land

District.	Total Area.	Rural Area under			
		No. of kwins.	Gross Area.	Occupied Area.	Cultivated Area.
(1)	(a)	(3)	(4)	(5)	(6)
	Acres.		Acres.	Acres.	Acres.
Akyab ...	3,287,040	1,154	1,135,679	741,115	628,685
Kyaukpysu ...	2,807,680	936	549,860	181,146	133,750
Sandoway ...	2,481,760	314	175,006	66,858	62,119
Rangoon City ...	48,602	...	...	...	...
Insein ...	1,218,336	1,213	828,468	600,733	579,873
Hanthawaddy (a) ...	1,194,739	1,135	1,087,510	174,513	849,935
Tharrawaddy ...	1,832,537	1,077	790,851	555,378	539,766
Pegu ...	2,613,415	1,380	1,370,880	930,490	895,383
Prome ...	1,865,668	1,150	1,125,765	324,000	381,012
Toungoo ...	3,926,483	1,174	977,807	498,918	471,200
Thayetmyo ...	3,040,032	849	866,368	199,167	129,774
Bassein ...	2,640,661	1,804	1,457,654	810,099	760,438
Henzada ...	1,818,332	1,454	1,141,453	660,520	623,084
Myaungmya ...	1,696,300	1,007	1,196,957	823,300	785,793
Maubin ...	1,049,897	1,057	1,016,740	540,018	510,559
Pyapôn ...	1,375,032	1,097	859,879	719,238	697,093
Thatôn ...	3,091,592	1,711	1,466,889	686,105	637,544
Amherst ...	4,516,880	1,309	1,109,936	518,180	464,089
Tavoy ...	3,368,000	449	276,504	126,749	117,375
Mergui ...	6,204,960	758	432,349	124,575	115,847
Pakôkku ...	3,976,001	2,015	2,120,641	777,525	504,174
Katha ...	4,912,045	1,850	708,693	804,020	169,403
Shwebo ...	3,656,960	3,633	2,302,163	1,107,201	743,084
Sagaing ...	1,167,924	1,528	1,095,475	804,856	520,409
Lower Chindwin ...	2,227,200	1,358	1,220,802	803,654	506,868
Upper Chindwin ...	6,743,725	182	66,576	45,304	33,952
Mandalay ...	1,363,859	896	431,360	262,071	185,325
Kyaukse ...	820,323	660	372,125	267,583	171,721
Meiktila ...	1,413,531	1,762	897,905	642,458	411,958
Yamethan ...	2,578,245	1,781	866,640	533,173	395,935
Myingyan ...	1,756,348	2,292	1,583,647	1,082,546	957,672
Magwe ...	2,365,794	2,008	1,580,348	937,065	502,626
Minbu ...	2,107,572	1,119	681,058	420,386	239,262
Myitkyina ...	4,543,291	104	54,510	27,421	25,792
Total for 1923-24 ...	89,760,764	43,172	32,154,652	18,012,732	14,469,346
Total for 1922- ...	85,982,913*	42,683	31,015,861*	17,901,025	14,195,522

(a) Waste Land grants in this district are included

* Revised

Records Staff in 1923-24—(Paragraph 2).

Supplementary Survey.			Urban Area under Supplementary Survey.			
Assessed Area.	Assessment on Occupied Area.	Cess if any.	No. of Towns.	No. of Blocks.	Gross Area.	Residential.
(7)	(8a)	(8b)	(9)	(10)	(11)	(12)
Acres.	Rs.	Rs.			Acres.	Acres.
740,306	22,59,007	2,25,060	5	60	5,760	1,133
170,213	2,83,086	23,398	1	6	640	71
60,616	1,21,335	12,133	1	6	351	86
...
592,741	15,06,616	1,37,288	1	358	18,912	9,841
265,161	31,28,060	3,10,149	15	58	5,752	471
...
548,397	14,57,106	1,46,711	7	100	4,661	1,834
929,813	26,22,728	2,69,140	12	64	10,334	283
394,470	6,30,351	63,015	17	107	8,017	4,031
407,172	10,52,164	1,05,244	7	42	8,320	2,291
05,232	1,51,434	15,144	10	73	7,241	2,276
...
710,114	17,72,204	1,76,021	2	15	1,843	972
058,731	18,69,853	1,86,826	6	158	11,572	3,171
828,109	25,32,279	2,53,285	7	120	8,394	1,767
545,780	16,05,091	1,60,519	9	97	4,341	762
710,093	23,20,117	2,22,841	5	78	3,157	1,539
...
040,766	13,57,544	1,36,603	4	245	4,149	1,257
447,231	9,31,359	93,135	9	246	8,518	211
112,857	3,06,225	30,622	3	119	12,594	2,324
117,978	3,02,230	30,523	1	79	6,638	2,010
...
312,301	3,68,844	...	3	44	1,582	153
164,281	1,94,500	...	1	51	2,560	1,150
601,726	16,18,258	...	5	49	1,240	1,100
355,493	4,49,433	...	14	44	2,833	1,416
355,020	3,26,430	...	3	51	1,975	758
31,267	40,116	...	2	23	991	755
...
175,194	5,77,893	...	...	...	...	...
152,612	6,62,064	...	...	...	...	...
206,100	4,14,304	...	...	...	...	...
315,224	6,97,177	...	...	...	...	...
443,509	3,84,600	...	...	...	...	...
397,947	4,88,342	...	...	...	...	...
202,580	8,77,895	...	...	...	...	...
...
25,589	50,531	...	...	...	...	...
...
13,497,494	3,37,12,041	26,07,270	174	3,631	182,235	55,536
14,091,289	25,14,321,17*	2,28,600*	172	3,593*	180,612*	55,177

in rural area under Supplementary Survey. figures.

STATEMENT No. I—Area dealt with by Land

District.	Urban Area under Supplementary Survey.				
	Agricultural.		Area assessed by Government.	Assessment.	
	Occupied.	Cultivated		Government.	Municipal.
	(1)	(13a)	(13b)	(14)	(15)	(16) †
	Acres.	Acres.	Acres.	Rs.	Ra.
Akyab ...	98	588	2000	20,630	1,000
Kyaukpyu ...	75	75	125	2,328	...
Sandoway ...	89	87	89	374	...
Rangoon City ...	4,149	3,913	7,554	45,488	11,39,418
Insein ...	3,712	3,498	4,003	28,390	42,381
Hanthawaddy ...	1,338	1,316	3,075	41,410	...
Tharrawaddy ...	7,643	7,415	7,661	66,808	55,233
Pegu ...	4,086	4,051	4,875	65,937	6,867
Prome ...	4,501	4,301	4,791	46,910	17,116
Toungoo ...	2,287	2,173	3,680	56,250	...
Thayetmyo ...	609	320	594	10,755	39,787
Bassein ...	6,132	5,557	6,102	64,956	3,818
Henzada ...	5,059	4,990	7,560	43,825	...
Myaungmya ...	1,910	1,860	2,272	18,613	82,578
Maubin ...	1,618	1,618	1,931	15,985	...
Pyapon ...	1,869	1,835	1,944	28,712	...
Thaton ...	4,217	4,181	3,300	15,119	...
Amherst ...	6,813	6,876	6,575	31,872	5,451
Tavoy ...	4,011	3,974	4,139	15,420	...
Mergui ...	919	852	857	6,300	...
Pakokku ...	1,126	1,075	738	3,953	548
Katha ...	140	131	453	6,357	...
Shwebo ...	44	263	642	5,760	...
Sagaing ...	820	634	823	4,764	5,586
Lower Chindwin ...	236	112	169	4,522	...
Upper Chindwin ...	...	...	...	...	...
Mandalay ...	4,230	3,696	5,317	61,020	56,355
Kyaukse ...	586	484	455	5,111	...
Meiktila ...	1,135	619	712	7,859	14,275
Yamethin ...	627	436	461	10,098	13,630
Myingyan ...	964	803	1,154	5,639	27,105
Magwe ...	219	175	433	12,098	11,222
Minbu ...	920	634	824	7,258	34,808
Myitkya ...	91	91	91	1,429	...
Total for 1923-24 ...	74,505	68,524	85,425	7,61,081	14,54,817
Total for 1922-23 ...	79,176	71,877	87,043	7,43,704	16,06,032

(b) Assessment by

(c) Not available owing to method of

(d) Excludes 61,730 acres outside Supplementary

Revised

Records Staff in 1923-24—(Paragraph 2)—concluded.

Area outside Supplementary Survey				Total Area			Total Assessment.	Remarks.
Occupied Area.	Cultivated Area.	Assessed Area.	Assessment.	Occupied.	Cultivated.	Assessed.		
(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	
Acres.	Acres.	Acres.	Rs.	Acres.	Acres.	Acres.	Rs.	
94,499	88,941	94,370	1,81,871	837,729	718,154	836,670	24,62,108	
27,748	23,977	27,623	29,539	209,040	177,808	200,991	3,15,853	
29,838	28,070	28,803	38,677	96,871	90,270	95,568	1,00,380	
...	...	...	...	13,999	3,923	7,354	45,488
2,300	2,260	2,300	4,571	637,216	585,631	599,014	15,39,577	
...	...	...	...	875,085	851,951	868,230	31,79,376
92,472	79,812	77,065	1,27,764	655,776	626,993	633,063	16,61,622	
98,248	79,329	92,618	1,00,400	1,036,855	970,763	1,027,106	27,89,771	
8,013	7,921	8,013	12,282	400,805	393,314	407,274	6,09,543	
87,025	29,975	25,613	38,981	530,501	509,348	436,474	11,47,095	
82,905	70,952	60,236	68,273	283,053	201,040	146,008	2,30,402	
12,220	11,126	1,220	17,974	861,522	777,121	728,436	18,55,194	
2,559	2,516	2,559	4,093	675,905	631,190	668,859	19,17,771	
8,780	8,658	8,780	15,661	839,758	796,311	839,358	25,07,153	
...	...	...	...	549,175	512,177	547,711	16,21,070
5,883	5,880	5,883	13,230	728,347	705,100	726,920	23,68,359	
53,395	50,382	50,477	50,604	743,928	692,107	703,543	14,23,977	
40,009	40,232	40,322	43,999	500,283	510,997	404,188	10,07,230	
25,489	25,378	24,433	27,909	158,208	146,727	151,429	3,49,554	
24,950	24,580	21,944	29,733	150,593	141,279	138,779	3,41,265	
60,813	57,199	(c)	36,189	835,683	559,448	343,039	4,28,986	
22,981	17,023	18,068	40,336	225,241	180,557	182,802	2,41,193	
3,036	1,961	1,746	1,461	1,112,095	745,309	664,114	10,26,079	
10,528	6,590	4,619	1,251	815,902	527,042	360,535	4,55,148	
51,082	23,078	17,917	14,174	855,727	530,668	373,126	3,55,126	
...	...	...	...	(d)43,304	33,952	33,267	40,116
6,325	6,325	...	...	278,364	195,340	180,511	9,38,913
1,920	448	216	305	271,408	170,053	153,283	6,07,480	
...	...	...	...	551,577	412,577	266,119	4,21,162
...	...	...	...	535,497	396,371	315,886	7,07,475
...	...	...	...	1,084,457	958,475	444,663	3,99,239
181,457	49,385	43,459	31,814	1,120,369	552,180	441,819	5,32,254	
47,109	15,054	8,923	11,756	476,112	254,950	212,387	8,09,909	
59,730	50,220	46,216	1,31,193	87,333	76,803	71,890	1,83,156	
1,089,286	805,581	724,363	10,74,046	10,828,069	10,749,161	14,807,283	8,58,48,872	
1,170,559	839,013	763,358	10,81,123	12,206,880	12,405,419	15,141,600	9,89,67,814	

Development Trust, assessing by outturn. Survey not dealt with by Land Records Staff. figure...

STATEMENT NO. II.—*Strength and Cost of Land Records*

District.	Strength of				
	Gazetted staff.	Inspectors.	Surveyers including		
			Rural.	Urban.	Combined rural and urban.
(1)	(2)	(3)	(4)	(5)	(6)
Akyab ...	2	10	66	2	4
Kyaukpadaung ...	1	5	27	...	1
Sandoway ...	1	3	18	...	1
Rangoon City ...	3	4	...	12	...
Insein ...	2	5	46	1	11
Hanthawaddy ...	2	7	72	...	7
Tharrawaddy ...	1	6	51	...	10
Fegu ...	2	8	66	2	15
Pyaw ...	1	5	50	3	6
Toungoo ...	1	5	38	4	10
Thayetmyo ...	1	4	30	...	2
Bassein ...	2	9	86	5	4
Henzada ...	1	7	66	2	7
Myaungmya ...	2	6	66	...	6
Maubin ...	1	5	50	...	5
Pyapön ...	2	7	71	...	4
Thatön ...	1	8	60	2	2
Amherst ...	1	6	59	3	3
Tavoy ...	1	3	20	1	1
Mergui ...	1	3	20	...	2
Paköku ...	2	9	70	1	...
Katha ...	1	6	31	...	5
Shwebo ...	3	12	108	...	14
Sagaing ...	1	8	60	...	3
Lower Chindwin ...	1	7	61	...	2
Upper Chindwin ...	1	1	7	...	...
Mandalay ...	2	6	47	1	5
Kyaukse ...	1	6	40	...	5
Meiktila ...	1	7	61	1	3
Yamethin ...	2	6	60	1	...
Myingyan ...	2	7	68	1	1
Magwe ...	2	9	79	1	2
Minbu ...	1	6	50	2	...
Myitkyina ...	1	1	7	...	1
Total for 1923-24 ...	...	207	1,720	45	118
Total for 1922-23 ...	...	205	1,754	51	140

Establishment in 1923-24—(Paragraphs 3 and 4).

Establishment.

Yachtsmen.			Office.			
Special.	Reservists and Apprentices.	Temporary.	Clerks.	Record-Keepers.	Draftsmen and computers.	Temporary staff.
(7)	(8)	(9)	(10)	(11)	(12)	(13)
3	9		2	2	...	...
4	4	...	1	1	...	...
...	4	...	1	1	...	...
8	...	1	5	2	4	2
...	8	...	2	2	1	2
...	13	...	3	2	...	...
...	12	3	2	1	1	2
...	11	3	3	1	...	1
...	8	...	2	1	...	2
...	10	...	2	1	...	...
...	5	...	1	1	...	...
...	15	...	2	2	...	2
...	13	...	2	1	...	2
...	20	...	2	2	...	2
...	10	1	2	1	...	...
...	10	...	2	2	...	2
...	20	...	2	2	...	2
...	16	...	2	1	...	2
...	5	...	1	1	...	...
...	2	...	1	1	...	...
...	18	9	2	1	...	...
...	5	...	1	1	...	...
...	20	...	3	2	...	...
...	13	2	2	1	...	15
...	8	3	2	1	...	...
...	1	...	1	...	...	...
2	7	6	2	2	...	...
3	8	...	2	1	...	...
...	10	...	2	1	...	...
...	11	...	2	1	...	2
...	15	...	2	1	1	...
...	17	7	2	1	...	10
...	11	...	1	2	...	...
...	2	...	1	...	...	...
30	340	35	65	43	7	48
11	370	132	66	45	4	67

STATEMENT NO. II.—*Strength and Cost of Land Records*

District.	Cost (including pay and travelling allowance).				
	Superintend- ence.	Inspection.	Subordi- nate Estab- lishment.	Miscellane- ous and contingen- cies.	Total
	(14)	(15)	(16)	(17)	(18)
(1)	Rs.	Rs.	Rs.	Rs.	Rs.
Akyab ...	14,268	16,522	67,838	5,043	1,03,671
Kyaukpyu ...	9,051	7,144	18,709	1,097	36,061
Sandoway ...	9,033	5,932	7,927	8,11	23,783
Rangoon City ...	34,515	8,641	42,787	15,681	1,01,624
Insein ...	16,912	9,603	37,787	2,488	66,790
Hanthawaddy ...	20,612	11,157	49,812	1,205	89,786
Tharrawaddy ...	13,298	9,585	38,577	1,338	62,798
Fegu ...	18,303	13,079	50,506	2,154	84,072
Frome ...	14,505	7,992	30,337	1,274	60,108
Toungoo ...	10,037	8,616	35,636	1,330	55,619
Thayetmyo ...	6,936	6,530	26,354	1,040	40,866
Bassein ...	17,672	15,237	55,609	1,351	89,929
Henzada ...	9,804	11,964	51,145	1,271	74,184
Myaungmya ...	15,311	9,922	41,584	3,736	71,553
Maubin ...	8,786	9,310	30,742	1,644	50,482
Pyapön ...	11,667	11,456	41,180	1,813	66,356
Thatön ...	14,728	13,589	48,663	2,006	78,986
Amherst ...	11,229	10,499	43,261	1,492	66,501
Tavoy ...	16,756	4,774	14,637	799	36,966
Mergui ...	8,573	5,448	17,253	922	32,226
Paköku ...	12,315	15,062	42,919	2,611	72,937
Katha ...	9,997	9,992	25,045	1,365	46,999
Shwebo ...	18,627	19,714	82,542	3,844	1,24,727
Sagaing ...	10,992	15,225	48,872	1,836	76,925
Lower Chindwin ...	10,737	11,723	40,040	1,223	64,723
Upper Chindwin ...	8,021	2,103	5,818	723	16,666
Mandalay ...	18,369	11,000	37,280	1,123	68,872
Kyaukse ...	10,890	9,697	30,934	1,664	53,185
Meiktila ...	10,183	10,742	41,009	2,108	64,042
Yamethin ...	11,185	9,126	35,701	1,618	57,630
Myingyan ...	14,887	11,541	44,538	1,329	71,295
Magwe ...	13,881	15,578	53,137	2,320	84,916
Minbu ...	10,588	10,299	34,376	2,522	57,885
Myitkyina ...	2,117	2,648	5,182	1,125	10,072
Total for 1923-24 ...	4,14,786	3,53,090	12,91,737	71,821	21,63,434
Total for 1922-23 ...	4,33,103*	3,39,129*	13,32,706*	73,251	21,69,192

* Revised figures.

Establishment in 1923-24—(Paragraphs 3 and 4)—concluded.

Average cost per square mile.			Average inclusive cost.			Remarks.
Superintendence.	Inspection.	Subordinate Establishment and Miscellaneous.	Per square mile.	Per acre occupied.	Percentage of total assessment.	
(19)	(20)	(21)	(22)	(23)	(24)	
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	(25)
6'81	7'88	34'77	49'46	0'14	4'55	
10'59	8'36	23'23	42'18	0'20	12'00	
3*97	21'65	33'18	86'80	0'35	19'54	
...	
12'53	7'11	29'22	49'47	0'11	4'35	
12'08	6'54	29'90	46'52	0'09	2'01	
10'62	7'66	31'28	50'16	0'11	4'80	
8'49	6'35	24'45	39'29	0'08	3'11	
8'19	4'51	21'22	33'92	0'15	8'88	
6'52	5'60	24'00	36'12	0'11	5'01	
5'11	4'81	20'19	30'11	0'20	25'20	
7'70	6'64	24'23	39'17	0'11	4'89	
5'46	6'66	29'17	41'29	0'11	3'88	
8'16	5'28	21'62	38'12	0'09	2'80	
5'36	5'68	23'40	34'44	0'10	3'48	
8'64	8'53	31'99	49'15	0'09	2'82	
6'39	5'90	21'98	34'27	0'11	5'75	
6'40	5'98	25'53	37'91	0'13	6'90	
37'01	10'80	34'02	83'63	0'28	11'49	
12'65	8'04	26'85	47'54	0'06	10'34	
3'71	4'54	13'73	21'98	0'09	18'57	
9'01	9'01	24'35	42'27	0'23	23'39	
5'16	5'47	23'90	34'59	0'11	7'08	
6'41	8'88	20'66	44'82	0'10	16'94	
5'54	6'04	21'52	33'16	0'08	18'87	
77'13	20'22	62'90	160'25	0'38	41'54	
25'87	16'76	54'37	97'00	0'25	7'34	
18'65	16'10	55'22	91'07	0'20	7'97	
7'23	7'63	30'62	45'18	0'10	15'17	
7'96	6'40	26'54	40'99	0'11	8'15	
6'00	4'66	18'50	29'16	0'07	18'53	
5'61	6'30	22'43	34'35	0'09	16'97	
9'91	9'74	34'55	54'20	0'14	6'54	
21'62	30'79	61'71	117'12	0'36	19'38	
†8'12	†6'22	†25'29	†40'83	†0'11	†5'99	
8'64	6'58*	28'03*	4'05*	0'12	†5'82*	

† Excludes figures for Rangoon City.

STATEMENT III.—*Inspections*

District.	No. of Inspecting.		Inspections in Rural areas under survey—			
	Revenue Officers.	Land Records Officers.	(a) by Revenue Officers.	(b) by Superintendent.	(c) by Assistant Superintendent.	(d) by Inspectors of Land Records.
(1)	(2a)	(2b)	(3a)	(3b)	(3c)	(3d)
Akyab	17	11	216	134	156	1,172
Kyaukpny	9	7	106	140	...	516
Sandoway	6	6	55	150	...	379
Rangoon City	5	7	...	...	...	...
Insein	8	9	137	100	65	778
Hanthawaddy	10	9	169	124	107	1,001
Tharrawaddy	12	8	167	113	...	611
Pegu	8	10	140	114	110	899
Prome	11	6	230	115	...	733
Toungoo	12	6	201	155	...	784
Thayetmyo ... ..	...	...	153	91	...	432
Bassein	13	6	...	...	...	...
Henzada	10	12	166	63	124	1,028
Myaungmya	9	8	224	107	...	954
Maubin	8	8	197	116	122	808
Pyapón	7	6	178	115	...	710
...	7	9	26	101	132	749
Thatón	0	9	186	115	9	1,149
Amherst	11	7	132	140	...	670
Tavoy	5	5	35	75	16	304
Mergui	7	4	119	127	...	420
Pakókku	12	10	330	126	...	1,220
Katha	11	7	108	166	...	1,110
Shwebo	12	17	283	119	219	1,879
Sagaing	9	9	323	135	...	1,040
Lower Chinwin	9	9	170	15	...	1, 82
Upper Chinwin	3	2	41	107	...	75
Mandalay	11	8	103	103	157	848
Kyaukse	4	7	114	121	...	800
Meiktila	7	8	135	114	...	830
Yamèthin	8	8	231	180	6	1,000
Mingyan	8	8	179	137	...	1,101
Magwe	15	16	266	59	88	1,351
Minbu	8	7	163	100	...	1,161
Myitkyina	7	2	1	54	...	13
Total for 1923-24 ..	364†	264†	5,322	3,963	1,371	28,299
Total for 1922-23 ...	315	285	5,145	3,824	1,156	26,640

† Excluding Rangoon city.

1923-24—(Paragraphs 5 to 7).

Inspections in Urban areas under survey—				Inspections in areas outside survey—				Total.	
(a) by Revenue Officers. (b) by Superintendent. (c) by Assistant Superintendent. (d) by Inspectors of Land Records.				(a) by Revenue Officers. (b) by Superintendent. (c) by Assistant Superintendent. (d) by Inspectors of Land Records.				No. of Inspections.	No. of Kwins inspected.
(4a)	(4b)	(4c)	(4d)	(5a)	(5b)	(5c)	(5d)		
...	6	41	305	8	19	9	102	1,988	1,864
...	3	...	9	...	5	...	12	784	610
4	...	...	7	...	10	...	13	618	480
175	95	192	267	...	1	109	116	955	267
6	4	...	27	...	1	...	1	1,110	878
26	26	24	88	...	...	...	...	1,616	1,095
3	6	...	22	16	9	...	94	1,051	803
...	5	3	44	...	...	1	17	1,339	1,069
6	10	...	42	...	6	...	31	1,173	836
21	16	...	47	28	...	...	54	1,307	1,135
1	4	...	8	26	9	...	64	788	705
12	3	17	61	...	1	2	27	1,507	1,080
19	7	...	92	...	...	...	7	1,410	1,403
25	14	9	28	...	2	...	3	1,334	1,133
25	17	...	27	...	...	...	...	1,072	1,003
32	24	7	58	...	...	...	2	1,131	1,008
24	41	4	115	...	3	...	71	1,717	1,352
...	12	...	119	...	18	...	22	1,106	898
5	3	...	38	3	...	...	27	596	520
3	1	...	14	...	17	...	25	726	660
...	10	...	40	110	...	...	...	2,442	2,147
...	6	...	26	...	27	...	234	1,679	1,320
...	8	...	21	...	...	...	...	2,535	2,500
...	...	...	19	...	...	...	...	1,517	1,030
...	6	...	10	...	...	...	8	1,445	1,370
...	...	...	...	...	...	...	...	283	158
10	143	...	292	...	...	...	...	1,656	1,241
...	8	...	50	...	...	...	7	1,100	1,779
4	4	...	64	9	5	...	...	1,105	805
...	7	...	15	16	2	...	14	1,471	1,398
...	8	...	39	...	...	...	...	1,465	982
3	...	...	11	45	10	18	149	2,003	1,357
...	5	...	66	16	3	...	2	1,516	926
...	4	...	2	22	36	...	40	172	161
405	506	287	1,875	209	184	139	1,136	43,786	35,254
394	575	171	2,045	245	95	32	780	41,102	33,025*

* Revised figures.

STATEMENT III.—*Inspections*

District.	Y			Number of errors		
	(a) Total number of holdings in Kwins inspected.			Total number of errors.		
	(b) Number actually inspected, and (c) Number found correct.			(a) in Area.	(b) in Crops.	(c) in Assessment.
(1)	(7a)	(7b)	(7c)	(8a)	(8b)	(8c)
Akyab ...	174,271	54,353	41,883	492	148	529
Kyaukpny ...	69,237	18,087	15,170	47	102	12
Sandoway ...	73,313	21,370	15,302	848	293	130
Rangoon City ...	18,605	4,913	4,913	...	...	...
Insein ...	37,226	17,228	13,792	187	02	52
Hanthawaddy ...	68,798	39,369	24,012	294	116	256
Tharrawaddy ...	71,538	19,036	14,949	84	40	74
Fegu ...	48,394	17,807	10,939	404	13	2
Prome ...	149,097	37,206	31,502	134	171	256
Toungoo ...	59,975	25,559	19,781	316	352	355
Thayetmyo ...	102,760	28,817	22,145	220	534	100
Bassein ...	66,769	27,838	18,400	340	771	336
Henzada ...	118,553	42,543	34,026	297	197	123
Myaungmya ...	41,430	18,848	13,347	108	222	351
Ma-ubin ...	45,251	19,380	13,243	225	137	102
Fyapón ...	28,791	14,086	10,079	88	49	8
Thatón ...	58,300	25,659	20,481	79	85	521
Amherst ...	67,879	33,304	27,702	122	115	45
Tavoy ...	41,908	19,232	13,814	136	161	66
Mergui ...	25,225	9,937	7,469	202	93	529
Pakókku ...	250,052	77,932	68,821	237	1,188	187
Katha ...	46,316	23,732	15,905	287	1,482	138
Shwebo ...	310,689	79,603	67,806	4,501	4,642	6,833
Sagaing ...	332,484	65,308	49,071	60	7,040	23
Lower Chindwin ...	270,005	61,089	50,807	128	1,640	411
Upper Chindwin ...	21,945	9,990	9,003	3	411	3
Mandalay ...	106,549	39,085	31,622	227	1,485	125
Kyaukse ...	89,554	24,868	19,928	378	554	80
Meiktila ...	129,410	32,112	23,060	49	2,287	584
Yaméthin ...	89,535	26,288	13,553	390	2,770	243
Myingyan ...	172,328	54,976	43,752	186	2,400	59
Magwe ...	214,508	60,320	52,314	268	1,102	161
Minbu ...	139,703	53,018	45,183	151	2,356	274
Myitkyina ...	2,016	853	499	3	3	9
Total for 1923-24 ...	3,538,124	1,100,508	869,279	11,053	33,117	12,977
Total for 1922-23 ...	3,256,063	1,009,605	815,328	6,006	27,589	4,713

* Revised

Ann 1923-24—(Paragraphs 5 to 7)—concluded.

affecting assessment.				Number of errors not affecting assessment.				Remarks. (12)
Result of correcting errors.				(a) In holding boundaries. (b) Crop marking. (c) Survey details. (d) Record.				
Increase.		Decrease.						
(a) Area. (b) Assessment.	(c) Area. (d) Assessment.	(a) Area. (b) Assessment.	(c) Area. (d) Assessment.	(11a)	(11b)	(11c)	(11d)	
(9a)	(9b)	(10a)	(10b)					
Acres.	Rs.	Acres.	Rs.					
469	249	181	265	1,611	1,906	3,636	4,190	
68	138	66	64	250	1,093	986	1,021	
195	339	158	243	577	2,040	2,043	2,574	
...	
200	839	6	28	415	2,263	7,109	393	
435	1,641	58	158	319	971	3,827	1,853	
245	773	147	176	660	1,082	3,398	1,042	
402	2	11	1	188	1,894	9,506	89	
71	124	54	109	450	204	2,709	2,709	
507	3,600	313	1,545	958	1,413	2,644	1,079	
179	302	266	438	339	972	881	2,101	
881	1,745	357	3,010	506	1,464	4,018	3,970	
323	773	157	324	453	2,358	3,447	3,915	
223	581	678	639	361	871	3,988	1,537	
740	2,075	414	1,068	416	3,298	2,249	1,588	
238	556	59	143	263	1,350	3,622	1,226	
168	3,440	77	211	286	1,202	2,844	1,113	
169	676	67	411	410	2,148	3,283	674	
385	294	70	122	553	684	1,661	2,485	
137	347	65	182	260	462	611	996	
530	510	1,674	1,281	1,049	1,751	897	3,702	
206	283	381	371	492	430	2,397	3,192	
3,447	5,235	1,054	1,598	726	1,522	2,247	4,579	
1,805	2,032	8,205	8,910	868	2,712	923	5,241	
820	723	1,049	1,254	358	1,236	722	3,000	
55	57	80	83	53	99	189	316	
654	3,441	612	1,974	364	626	1,167	3,160	
453	1,330	160	575	84	333	605	1,222	
1,083	6,102	2,319	2,610	1,276	1,120	1,488	4,461	
709	1,190	1,473	2,421	1,300	1,827	3,823	7,150	
1,618	1,136	3,735	2,517	792	2,243	830	5,515	
509	663	939	1,187	1,998	1,555	1,261	1,670	
695	1,313	1,115	1,754	1,034	1,988	1,897	4,256	
12	13	3	8	15	168	643	90	
18,641	43,278	26,205	30,184	19,724	45,521	81,242	82,829	
16,096	29,468	11,118	18,186	22,155	46,271	88,133	66,239	

Figures.

STATEMENT No. IV.—Miscellaneous Minor

District, (1)	Island Surveys.					
	No. and Area of Holdings.				Cost of Survey—	
	Surveyed.		Inspected.		(a) Superintendence and Inspections.	
	No.	Area.	No.	Area.	(b) Staff and Miscellaneous.	
(2a)	(2b)	(3a)	(3b)	(4a)	(4b)	
	Acres.		Acres.	Rs.	Rs.	
Akyab ...	52	146	52	146	...	...
Kyaukpyu ...	...	...	...	...	...	...
Saodway ...	...	...	...	...	...	...
Insein ...	...	...	...	...	...	...
Hanthawaddy ...	...	...	...	...	...	...
Tharrawaddy ...	1,324	8,552	614	3,039	...	137
Pegu ...	...	...	...	...	...	...
Prome ...	1,533	1,998	770	1,194	...	...
Toungoo ...	...	...	...	...	...	...
Thayetmye ...	299	413	80	65	...	...
Bassein ...	...	...	...	...	...	...
Henzada ...	4,781	14,609	915	2,084	...	...
Myaungmya ...	...	...	...	...	...	...
Ma-ubin ...	...	...	...	...	...	...
Pyapön ...	...	...	...	...	...	...
Thatön ...	3,868	9,146	1,185	2,805	...	...
Amherst ...	...	...	...	...	...	...
Tavoy ...	...	...	...	...	...	...
Mergui ...	...	...	...	...	...	...
Paköku ...	25,114	37,814	9,848	17,446	...	859
Katha ...	690	763	158	113	...	...
Shwebo ...	214	545	37	68	...	...
Sagaing ...	4,016	5,977	1,615	3,185	...	...
Lower Chindwin ...	5,611	8,368	1,075	2,291	...	576
Upper Chindwin ...	2,896	2,604	578	785	...	...
Mandalay ...	3,726	12,326	2,529	8,788	...	882
Kyaukse ...	...	...	...	...	...	...
Meiktila ...	...	...	...	...	...	...
Yamethin ...	...	...	...	...	...	...
Myingyan ...	3,092	5,388	1,897	3,698	...	499
Magwe ...	14,891	16,134	6,937	7,137	3,822	895
Minbu ...	490	765	68	75	...	...
Myitkyina ...	...	...	...	...	...	...
Total for 1923-24 ...	72,900	120,488	28,382	53,843	3,822	3,848
Total for 1922-23 ...	86,746	150,794	32,275	55,309	4,561	7,165

(a) Particulars

Surveys in 1923-24—(Paragraphs 11 to 13).

Surveys in Unreserved Tracts.							
No. and Area of Holdings.				Cost of Survey— (a) Superintendence and Inspections, (b) Staff and Miscellaneous.		No. and Area of	
Surveyed.		Inspected.				For Survey.	
No. (-a)	Area. (-b) Acres.	No. (6a)	Area. (6b) Acres.			No. (8a)	Area. (8b) Acres.
				Rs.	Ra.		
				(7a)			
866	5,950	696	4,558	...	1,639	23	814
73	280	73	280	...	...	80	978
378	717	64	104	92	106	86	479
571	2,300	74	455	...	...	...	...
...	...	...	...	...	...	267	4,142
8,257	50,981	1,522	6,809	...	...	324	2,584
31	1,840	182	2,998	...	...	...	...
2,108	4,535	556	1,489	136	326	...	...
2,597	5,286	632	1,392	...	...	1,984	4,951
(a)	(a)	(a)	(a)	...	...	...	...
1,830	7,779	335	2,290	...	...	...	...
310	888	...	...	...	...	16	48
...
76	470	33	320	...	...	...	...
5,638	27,953	1,236	4,883	...	...	275	3,081
2,091	9,750	229	1,529	200	660	208	4,108
101	256	56	140	...	...	47	412
196	689	87	319	...	...	127	3,684
83	2,805	7,771	...	...	1,812	12	27
5,447	8,428	881	1,168	...	...	34	649
...
32	114	...	...	...	...	...	...
...
1,273	3,241	579	1,442	...	...	290	288
...
...
107	152	107	152	998	5	101	24
64	69	11	17	...	...	...	...
2,300	7,643	669	1,761	...	...	...	...
34,459	142,126	15,787	32,106	1,426	4,600	3,874	25,669
48,780	208,793	17,006	40,685	2,186	7,804	2,454	22,448

not recorded.

STATEMENT No. IV.—Miscellaneous Minor

District.	Surveys and Miscellaneous			
	Grants and Leases.			
	Surveyed.		Inspected.	
	No.	Area.	No.	Area.
(1)	(9a)	(9b)	(10a)	(10b)
		Acres		Acres.
Akyab ...	23	214	23	214
Kyaukpyu ...	77	912	43	179
Sandoway ...	82	823	8	24
Insein ...	...	...	...	...
Hanthawaddy ...	172	3,519	94	2,970
Tharrawaddy ...	324	2,584	172	1,013
Pegu ...	...	...	...	...
Prome ...	...	...	...	...
Toungoo ...	1,984	4,951	204	309
Thayetmyo... ..	...	...	...	...
Bassein ...	...	...	...	...
Henzada ...	16	48	16	48
Myaungmya ...	...	...	...	...
Ma-ubin ...	...	...	...	...
Pyapön ...	...	...	...	...
Thatön ...	269	3,058	269	3,058
Amherst ...	191	3,821	200	3,074
Tavoy ...	41	257	41	257
Mergui ...	121	3,599	114	3,217
Pakōkku ...	12	27	12	27
Katha ...	34	649	22	466
Shwebo ...	...	...	...	...
Sagaing ...	...	...	...	...
Lower Chindwin ...	...	...	...	...
Upper Chindwin ...	...	...	...	...
Mandalay ...	290	288	425	347
Kyaukse ...	...	...	...	...
Meiktila ...	...	...	...	...
Yamethin ...	101	24	11	...
Myingyan ...	...	...	...	...
Magwe ...	...	...	...	...
Minbu ...	...	...	...	...
Myitkyina ...	...	...	...	...
Total for 1923-24 ...	3,737	24,774	1,643	16,994
Total for 1922-23 ...	2,462	20,807	2,220	16,248

(b) Includes Rs. 102 received by the

Surveys in 1923-24—(Paragraphs 11 to 13)—concluded.

work for private parties.

Cost of Survey— (a) Superintendence and Inspections. (b) Staff and Miscellaneous.		Fees received— (a) by Surveyors (b) by Government.		Other Miscellaneous work.			
(11a)	(11b)	(12a)	(12b)	No. of cases.	No. of Surveyors employed.	Fees received— (a) by Surveyors, (b) by Government.	
Rs.	Rs.	Rs.	Rs.	(13)	(14)	Rs.	Rs.
...	147	147	...	46	26	25	...
...	805	11	6	4	...
...	392	...	...	...	...
...	...	1,077	...	16	2	325	...
...
...	81	41	71	...
...	17	...	...	...
...	17	17	275	...
...	17	6	17	...
...	...	646	277	...	...	...	...
...	...	363	156	...	...	...	...
...
...	...	10	...	56	1	68	...
...	1	1	25	...
...	209	32	238	...
...	2	2	10	...
...
...	1	1	150	60
...	...	15	...	3	3	15	...
...	8	7	...	...
...	...	136	8	8	3	(b) 164	69
...
...
...
...	147	2,258	1,266	493	148	1,456	28
...	855	3,563	1,492	153	47	1,471	591

Superintendent of Land Records.

STATEMENT V.—General Progress of

District.	No. of kwins at beginning of year, (a) for Redrawing (b) for Revision. (c) for Resurvey.			Area for Resurvey		(a) for dis (b) receiv						
	(1)	2(a)	2(b)	2(c)	Gross.	Occupied	Traverse Section					
					3(a)	3(b)	4(a)	4(b)	4(c)	4(d)		
					Sq. m.	Acres.						
Akyab ...	57	1	19	28	10,399	6	19	18	7			
Kyaukpyu ...	31	10	19	26	5,834							
Sandoway ...	32	12	47	39	11,515	12			12			
Insein ...	81	72	127	169	64,670							
Hanthawaddy ...	54	31	5	8	4,627			1				
Tharawaddy ...	40	16	46	65	31,923							
Pegu ...	266	161	111	178	95,314	93		25	68			
Prome ...												
Toungoo ...	22	2	20	29	6,899							
Thayetmyo ...			48	94	16,508							
Bassein ...	86	442	111	185	37,203	55		4	51			
Henzada ...	42	102	123	358	88,938	68		9	68			
Myaungmya ...	38	15	91	131	47,232			73	29			
Mau-bin ...	70	20	54	81	34,011	4	5		9			
Fyapön ...	17	1	80	108	48,681	45	10	55				
Thatön ...	19	61	74	113	44,197	10		1	9			
Amherat ...		1	2	3	830							
Tavoy ...	57	70	59	66	16,452							
Mergui ...	45	196	40	27	5,956							
Pakökku ...	44	1	3	11	1,468							
Katha ...		17	19	6	1,196			74	74			
Shwebo ...	158	0	7	9	2,788			6	6			
Sagaing ...		214	347	372	154,704	153		35	118			
Lower Chindwin ...	155	40	3	3	1,933							
Upper Chindwin ...	8	62	18	3	3,285							
Mandalay ...	73	14	10	14	2,046	3		3				
Kyaukse ...	2	117	36	57	21,794	15			15			
Meiktila ...		40	30	23	9,037							
Yamethin ...	15	128	69	58	14,939	7			7			
Myingyan ...	42											
Magwe ...	75	287	10	58	17,651			40	40			
Minbu ...	84	15	62	03	24,074	17	8	17	8			
Myitkyina ...		8	13	17	5,565			8	8			
Total for 1923-24 ...	1,593	2,162	1,703	2,405	833,963	488	253	340	401			
Total for 1922-23 ...	1,917	2,697	1,905	2,414	891,253	598	57	454	481			

(a) 25 kwins were taken off Traverse Section and added on to cadastral
 (b) 11 kwins were eroded, 2 in column 5c, 5 in column 6c, and 4 in column 7c.
 (c) 2 kwins were rejected and were revised again this year.

Survey and Mapping in 1923-24—(Paragraph 20).

Number of kwins in each section:—

posals beginning of the year. (e) disposed of during the year.
ed during the year. (d) remaining for disposal at end of the year.

Cadastral Section.				Revision Section.				Computation and Mapping Section.			
5(a)	5(b)	5(c)	5(d)	6(a)	6(b)	6(c)	6(d)	7(a)	7(b)	7(c)	7(d)
13	23	28	8	1	30	16	15	37	44	37	44
109	12	19	17	10	15	10	15	31	29	31	29
35	10	16	29	12	7	4	15	32	24	32	24
127	11	26	112	72	6	34	44	81	99	83	97
5	5	4	6	31	9	31	9	54	35	54	35
46	11	25	32	16	1	10	7	40	29	42	27
18	25	43	...	161	...	...	161	266	43	114	195
...	...	...	...	...	31	31	...	81	31	81	31
20	36	56	...	2	7	9	...	71	79	85	65
43	3	30	(c) 21	...	...	...	...	5	30	5	30
56	5	25	30	442	...	49	393	86	74	86	74
55	9	19	45	102	549	2	649	42	21	42	21
91	54	26	119	15	32	...	47	38	26	38	26
50	46	70	20	20	87	89	18	70	153	70	153
35	80	113	2	1	1	1	...	132	144	135	141
61	2	(b) 8	58	61	...	(b) 11	50	19	43	(b) 47	15
2	9	10	1	1	24	25	...	50	35	(d) 56	35
59	8	25	42	70	...	5	65	57	30	35	52
(e) 40	...	19	...	196	22	47	...	45	66	...	111
3	23	...	26	1	28	...	29	44	1	...	45
19	114	107	26	17	99	111	5	213	230	271	271
7	43	48	2	6	101	107	...	158	155	158	155
194	35	94	135	214	...	17	197	209	111	209	111
3	9	1	11	40	31	41	30	155	187	155	187
18	3	3	18	62	10	10	62	8	13	8	13
7	3	10	...	14	51	65	...	73	75	98	50
21	18	6	33	117	13	17	103	14	33	14	33
28	15	37	6	36	8	43	1	66	80	66	80
62	15	53	24	128	13	37	104	97	90	80	107
...	...	...	...	...	45	45	...	42	47	42	47
10	40	50	...	287	...	4	283	75	54	75	54
45	57	57	45	15	...	5	10	84	62	84	62
8	8	...	...	...	...	...	...	8	8	...	8
13	...	2	11	8	...	...	8	...	2	...	2
1,213	739	1,040	891	2,158	1,219	880	2,491	2,541	2,189	2,294	2,436
1,228	1,114*	1,143*	1,277*	1,776	1,323	1,123	1,971	2,909*	2,527*	3,144	2,298

section (column 5b) without doing traverse work.
(c) 2 kwins were transferred to Revision Programme.
(e) 21 kwins of these have been transferred to Revision Programme.
* Revised figures.

STATEMENT V.—General Progress of

District.	Number of kwins:— (a) for disposal at beginning of year. (b) received during the year. (c) disposed of during the year. (d) remaining for disposal at end of the year.				Number of kwins at end of the year. (a) for Redrawing. (b) for Revision. (c) for Resurvey.		
	Printing Section.						
(+)	8(a)	8(b)	-8(c)	8(d)	9(a)	9(b)	9(c)
Akyab ...	30	37	67	...	...	15	15
Kyaukpyu ...	15	31	46	...	29	15	17
Sandoway ...	2	32	...	32	27	15	41
Insein ...	...	83	83	...	97	44	112
Hanthawaddy ...	11	54	65	...	35	9	6
Tharrawaddy ...	45	42	87	...	27	7	32
Pegu ...	44	114	149	9	195	161	68
Prome ...	...	81	81	...	...	...	...
Toungoo ...	...	85	83	2	...	...	...
Thayetmyo ...	...	5	5	...	...	2	19
Bassein ...	90	86	125	51	74	203	87
Henzada ...	...	42	42	...	...	649	113
Myaungmya ...	39	38	73	4	...	47	148
Ma-ubin ...	53	70	103	...	...	18	35
Pyapón ...	...	135	135	...	27	...	2
Thatón ...	...	43	43	...	15	50	67
Amherst ...	...	54	54	...	...	...	1
Tavey ...	...	35	35	...	52	65	42
Mergui ...	...	...	...	...	45	171	...
Pakókku ...	...	...	...	...	45	29	26
Katha ...	...	172	172	...	...	5	26
Shwebo ...	209	158	85	282	155	...	2
Sagaing ...	2	269	270	1	...	197	253
Lower Chindwin ...	...	155	10	145	123	30	11
Upper Chindwin ...	...	8	8	...	8	62	12
Mandalay ...	47	98	47	98	50	...	...
Kyaukse ...	...	14	14	...	2	103	48
Meiktila ...	...	66	66	...	...	1	6
Yamèthin ...	...	80	...	80	15	104	32
Myingyan ...	17	42	59	...	47	...	...
Magwe ...	...	75	28	47	...	283	...
Minbu ...	...	84	84	...	62	10	53
Myitkyina ...	...	...	...	...	8	...	11
Total for 1923-24 ...	602	2,288	2,139	751	1,138	2,493	1,290
Total for 1922-23 ...	2,184	2,710*	3,466*	642	1,618*	1,971*	1,742*

* Revised

Survey and Mapping in 1923-24—(Paragraph 20)—concluded.

Area for Resurvey.		Number of kwins in which.						Remarks.
Gross.	Occupied.	Stock is depleted.	Gross area exceeds 1,000 acres.	Occupied area exceeding 800 acres.	Field Numbers exceeding 2,000	Number of sheets exceeding 2.	More than one village tract is found.	
10(a)	10(b)	11(a)	11(b)	11(c)	11(d)	11(e)	11(f)	
Sq. m	Acres							
26	7,948	13	494	344	789	301	156	
24	2,747	...	...	...	...	...	4	12
43	9,976	2	5	...	5	...	...	...
155	59,251	40	229	188	221	89	243	
14	5,001	2	3	3	2	3	...	...
45	22,020	29	...	...	...	...	...	...
105	38,908	7	338	260	285	222	600	
...	...	...	346	87	305	259	279	
...	...	52	235	120	51	255	...	...
58	8,005	...	114	10	30	60	15	
159	26,676	203	377	201	375	208	28	
313	74,930	...	306	187	599	207	333	
245	107,919	14	63	59	52	20	111	
63	19,847	19	145	69	113	287	21	
1	193	2	265	328	50	139	113	
104	40,432	16	27	17	6	13	1	
2	427	...	...	...	...	...	...
45	10,509	...	55	6	35	33	20	
...	...	...	80	7	15	68	8	
46	12,957	23	155	69	42	212	...	
34	2,882	...	129	18	68	28	6	
2	1,117	...	...	...	...	...	...
282	118,998	48	86	74	69	28	...	
22	7,051	...	73	47	10	39	37	
3	3,225	18	...	...	5	...	18	
...	...	2	5	1	4	5	...	
38	16,096	...	86	75	71	46	3	
4	1,823	103	71	2	1	8	...	
30	7,311	42	138	40	48	50	18	
...	...	...	161	153	85	59	3	
54	25,679	297	72	42	10	29	2	
...	...	2	79	51	35	27	2	
13	2,124	1	3	5	...	6	...	
1,030	635,704	955	4,162	2,465	3,404	2,615	2,031	
2,394	831,455	1,439	3,922	2,366	3,322	2,389	2,116	

16-inch scale.
64-inch scale.

figures.

STATEMENT NO. VI.—*Progress and*

District	Area	Length in miles of Traverse.		Azimuths observed.	Mathematical results.	
		(a) Boundaries, (b) Connection.			Average angu- lar error.	Average linear error.
		(3a)	(3b)				(5a)	(5b)
(1)	(2)	(3a)	(3b)	(4)	Seconds.	Links.
A (i)—Resurveys in Rural Areas.						
Akyab	25	92	15	...	0'05	0'02
Kyaukpyu	...	...	...	...	...	...
Sandoway	...	...	...	...	...	...
Insein	...	...	...	...	...	...
Hanthawaddy	2	11	1	...	...	0'24
Tharrawaddy	...	...	...	...	...	...
Pegu	...	...	...	...	...	...
Prome	...	...	...	...	...	...
Toungoo	...	...	...	...	...	...
Thayetmyo	...	...	...	...	...	...
Bassein	8	22	7	...	...	...
Henzada	16	55	14	...	0'64	0'02
Myaungmya	...	...	...	...	...	...
Ma-ubin	...	...	...	...	...	...
Pyapön	...	...	...	...	...	...
Thatön	...	...	...	...	...	...
Amherst	...	...	...	...	...	...
Tavoy	...	...	...	...	...	...
Mergui	...	...	...	...	...	...
Pakökku	12	55'05	...	...	4'50	0'30
Katha	...	...	156'45	17	...	...
Shwebo	6	19'85	53	4	2'00	0'20
Sagaing	30	25'81	29	...	0'02	0'03
Lower Chindwin	7	25	2	...	0'63	0'94
Upper Chindwin	...	...	...	...	...	...
Mandalay	2	9	...	...	0'01	0'02
Kyaukse	...	...	...	...	...	...
Meiktila	...	...	...	...	...	...
Yaméthin	...	...	...	...	...	...
Myingyan	...	...	...	...	...	...
Magwe	...	...	...	...	...	...
Minbu	14	7	39'82	...	0'09	0'01
Myitkyina	...	...	...	...	...	...
By Special Survey Party	135	411	...	...	...	...
Total for 1923-24	257	733	317	21	...	...
Total for 1922-23	339	4,015	281	...	...	...

Cost of Surveys in 1923-24—(Paragraphs 21 and 22).

No. of kwins.		Cadastral.					
Traversed, (6a)	Partialled, (6b)	Area.		Fields.		Number of kwins	
		Gross, (7a)	Occupied, (7b)	Number, (8a)	Average area, (8b)	Before survey, (9a)	After survey, (9b)
		S. m.	Acres.		Acres.		
18	12	41	14,020	84,455	0'17	28	39
...	...	26	5,384	38,039	0'14	19	25
...	...	6	2,154	20,474	0'11	8	11
...	...	32	14,184	49,528	0'29	30	40
1	1	8	4,627	10,613	0'44	5	8
...	...	36	18,581	...	...	25	39
...	...	73	30,406	81,460	0'43	43	68
...
...	...	97	22,690	60,606	0'37	56	87
...	...	37	10,001	40,161	0'25	30	30
4	...	26	10,527	...	...	25	100
9	2	54	18,527	43,467	0'43	19	76
23	...	38	14,994	14,800	1'01	23	35
...	...	81	35,532	...	...	96	70
...	...	45	22,416	30,102	0'74	38	42
...
...	...	12	4,112	14,502	0'28	10	10
...	...	32	8,573	26,964	0'32	25	27
...	...	9	2,797	7,442	0'38	19	19
22	3	9	2,730	4,871	0'56	5	7
74	...	14	2,870	46,728	0'33	23	23
6	...	42	17,408	...	...	50	48
35	...	89	35,706	47,454	0'86	68	94
7	7	0'44	74	61	1'21	1	1
...	...	1	720	5,651	0'13	3	5
3	...	14	2,940	...	...	24	31
...	...	3	1,346	...	...	6	6
...	...	29	12,742	21,766	0'58	37	40
...	...	47	11,326	21,040	0'54	53	59
...	...	7	2,853	1,661	2'09	2	5
...	...	57	20,884	14,788	1'41	30	55
17	...	51	23,845	47,381	0'50	57	72
...	...	4	1,441	...	...	2	3
131	13	118	63,016	83,169	...	129	159
350	38	1,139	446,026	810,763	...	989	1,343
384	51	1,228	487,760	779,374	...	981	1,382

STATEMENT NO. VI.—*Progress and Cost*

District.	Cadastral.		Cost (Field)		
	Number partalled.		Cost		
	By Inspector. (10a)	By Superintendent. (10b)	Superintendence (11a)	Inspection. (11b)	Subordinate Staff. (11c)
(i)					
			Rs.	Rs.	Rs.
<i>A (i)—Resurveys in Rural Areas—contd.</i>					
Akyab ...	39	21	...	771	4,248
Kyaukpnyu ...	19	12	...	496	1,435
Sandoway ...	6	5	...	34	734
Insein ...	71	21	...	391	5,075
Hanthawaddy ...	5	4	...	...	1,659
Tharrawaddy ...	39	25	...	1,070	4,553
Pegu ...	68	40	...	...	4,010
Prome ...	...	...	...	...	...
Toungoo ...	87	31	...	803	5,098
Thayetmyo ...	30	17	...	385	1,989
Bassein ...	162	34	...	2,296	5,478
Henzada ...	76	25	...	...	4,513
Myaungmyā ...	35	20	...	546	3,030
Ma-ubin ...	70	43	...	778	5,999
Pyapōn ...	37	26	...	1,064	5,927
Thatōn ...	...	...	...	...	...
Amherst ...	10	8	...	156	543
Tavoy ...	94	27	...	...	1,324
Mergui ...	19	12	...	182	530
Pakōkku ...	7	8	...	17	175
Katha ...	94	13	...	867	2,705
Shwebo ...	48	29	...	226	5,321
Sagaing ...	94	25	...	1,062	8,963
Lower Chindwin ...	1	...	...	...	8
Upper Chindwin ...	1	4	23	4	139
Mandalay ...	27	3	...	...	1,130
Kyaukse ...	11	1	...	...	1,397
Meiktila ...	37	20	...	538	1,929
Yamēthin ...	59	12	...	...	1,160
Myingyan ...	5	...	...	190	530
Magwe ...	53	21	...	518	3,102
Minbu ...	72	16	...	934	7,154
Myitkyinā ...	...	3	...	...	247
By Special Survey Party ...	159	5	8,063	3,420	27,454
Total for 1923-24 ...	1,533	521	8,086	16,763	1,18,159
Total for 1922-23 ...	1,312*	476*	9,794	21,566	1,27,641

* Revised

of Surveys in 1923-24—(Paragraphs 21 and 22)—continued.

and Recess.)

of		Incidence of cost.					Remarks.
Miscellaneous.	Total.	Per square mile.	Per linear mile.	Per acre occupied.	Budget to which debited.		
(11d)	(12)	(13)	(14)	(15)	(16)		
Rs.	Rs.	Rs.	Rs.	Rs.		(17)	
5,331	10,350	252	..	0'74	...		
...	1,931	74	...	0'36	...		
...	708	128	...	0'36	...		
...	5,466	171	...	0'39	...		
...	1,659	207	...	0'36	...		
...	5,628	156	...	0'30	...		
...	4,010	55	...	0'11	...		
...	5,924	61	...	0'26	...		
23	3,972	107	...	0'40	...		
1,598	7,774	70	...	0'19	...		
...	4,513	84	...	0'24	...		
...	4,176	110	...	0'28	...		
...	6,777	84	...	0'19	...		
...	6,991	155	...	0'31	...		
...	699	58	...	0'17	...		
1,407	2,731	85	...	0'32	...		
...	718	80	...	0'26	...		
...	102	21	...	0'70	...		
3,916	7,488	217	...	0'48	...		
...	5,517	132	...	0'32	...		
...	10,025	112	...	0'28	...		
...	8	18	...	0'11	...		
154	320	215	...	0'44	...		
520	1,650	118	...	0'56	...		
85	1,423	44	34	0'09	...		
1,293	3,700	129	...	0'29	...		
...	1,160	25	...	0'10	...		
...	720	103	...	0'25	...		
...	3,020	64	...	0'17	...		
...	8,038	158	...	0'34	...		
...	247	62	...	0'17	...		
15,849	54,795	...	...	...	S. S. P.	In Pypou, Alvaugoyes, Maudalay, Melkila, Miyang Sab, Mocuya, Sagal, Ing, Yamethin and Pego.
30,117	1,73,125	...	...	...	...
20,256	1,99,257	...	...	...	...

figures.

STATEMENT No. VI.—*Progress and Cost*

District.	Traverse.					
	Area.	Length in miles of Traverse.		Azimuths observed.	Mathematical results.	
		(a) Boundaries.	(b) Connection.		Average angular error.	Average linear error.
(i)	(2)	(3a)	(3b)	(4)	(5a)	(5b)
A (ii).— <i>Revision Surveys in Rural Areas.</i>	Sq. m.				Ses.	Links.
Akyab
Kyaukpyu
Sandoway
Insein
Hanthawaddy
Tharrawaddy
Pegu
Prome
Toungoo
Bassein
Myaungmya
Ma-ubin
Thaton
Amherst
Tavoy
Mergui
Katha
Shwebo
Lower Chindwin
Kyaukse
Meiktila
Yamethin
Magwe
Minbu
Total for 1903-24
Total for 1922-23
B.— <i>Original Surveys in Rural Areas.</i>						
Akyab
Sandoway
Katha
By Special Survey Party	262	758	4	57	...	...
Total for 1923-24	262	758	4	57	...	...
Total for 1922-23	139	422	3	32	...	...

† Includes 4,750 acres partially resurveyed with

of Surveys in 1923-24—(Paragraphs 21 and 22)—continued.

No. of kwins.		Cadastral.					
Traversed. (6a)	Partially. (6b)	After.		Fields.		No. of kwins.	
		Gross. (7a)	Occupied. (7b)	Number. (8a)	Average area. (8b)	Before Survey. (9a)	After Survey. (9b)
		Sq. m.	Acres.		Acres.		
...	...	18	3,700	10,799	0'35	16	16
...	...	10	3,605	10,300	0'35	10	19
...	...	5	657	5,979	0'11	4	4
...	...	44	19,773	48,125	0'41	30	54
...	...	42	24,592	33,668	0'73	31	49
...	...	6	3,593	...	...	3	7
...
...	...	43	14,806	57,120	0'26	31	37
...	...	18	3,637	9,261	0'39	9	14
...	...	85	39,376	...	...	49	...
...
...	...	121	43,268	...	...	107	89
...	...	21	8,033	...	...	13	15
...	...	49	22,935	54,612	0'48	25	40
...	...	4	2,035	5,673	0'16	5	5
...	...	37	6,158	10,078	0'61	47	47
...	...	57	9,555	40,929	0'23	98	95
...	...	93	140,000	...	...	107	107
...	...	68	39,030	...	...	41	...
...	...	29	14,621	...	...	27	31
...	43	50
...	...	32	11,809	31,824	0'37	37	43
...	...	3	1,550	567	0'73	4	5
...	...	2	753	2,300	0'33	5	5
...	...	781	304,726	321,294	...	742	735
...	...	1,105	318,891	317,491	...	973	885
...	...	9	5,050	2,300	2'60	...	23
...	...	4	1,798	9,396	0'19	8	8
...	...	20	12,710	...	...	...	84
247	56	126	55,149	128,390	...	106	122
247	56	159	77,607	140,086	...	114	237
233	247	171	74,729	23,356	...	222	279

plane table and chain.

STATEMENT No. VI.—*Progress and Cost*

District.	Cadastral		Cost		
	No. partalled.		Cost		
	By Inspector.	By Superintendent.	Superintendence.	Inspection.	Subordinate staff.
(1)	(10a)	(10b)	(11a)	(11b)	(11c)
			Rs.	Rs.	Rs.
<i>A(ii)—Revision Surveys in Rural Areas—contd.</i>					
Akyab ...	16	7	...	...	731
Kyaukpyu ...	10	3	...	275	470
Sandoway ...	1	4	...	9	65
Insein ...	18	4	...	261	1,302
Hanthawaddy ...	31	7	...	1,230	1,139
Tharrawaddy ...	7	4	...	...	290
Pegu ...	...	...	...	...	...
Prome ...	...	...	...	361	1,803
Toungoo ...	14	1	...	105	203
Bassein ...	...	...	...	...	...
Myaungmya ...	...	...	...	...	...
Ma-ubin ...	89	...	...	...	1,541
Thaton ...	15	6	...	...	1,006
Amherst ...	95	18	...	307	1,004
Tavoy ...	...	...	...	...	145
Mergui ...	47	9	...	230	528
Katha ...	80	7	...	263	538
Shwebo ...	107	21	...	388	2,216
Lower Chindwin ...	41	4	...	...	1,013
Kyaukse ...	5	3	...	...	...
Meiktila ...	43	5	...	185	493
Yamethin ...	43	6	...	...	347
Magwe ...	4	...	...	...	...
Minbu ...	5	...	...	...	62
Total for 1923-24 ...	601	109	...	3,614	16,186
Total for 1922-23 ...	922	120	200	3,453	20,597
<i>B.—Original Surveys in Rural Areas—contd.</i>					
Akyab ...	6	...	...	...	937
Sandoway ...	8	4	...	44	406
Katha ...	...	...	...	...	...
By Special Survey Party ...	113	18	5,390	3,312	38,298
Total for 1923-24 ...	127	22	5,390	3,356	39,641
Total for 1922-23 ...	197	70	9,404	3,917	22,481

of Surveys in 1923-24—(Paragraphs 21 and 22)—continued.

(Field and Recess).

of		Incidence of cost.			Budget to which debited.	Remarks.
Miscellaneous	Total.	Per sq. mile.	Per linear mile.	Per acre occupied.		
(11a)	(12)	(13)	(14)	(15)	(16)	(17)
Rs.	Rs.	Rs.	Rs.	Rs.		
599	1,430	111	...	0'35	...	
...	745	75	...	0'21	...	
...	74	15	...	0'11	...	
...	1,563	36	...	0'08	...	
292	2,661	63	...	0'11	...	
...	290	48	...	0'08	...	
...	
...	2,164	50	...	0'15	...	
...	308	17	...	0'08	...	
...	
...	1,541	13	...	0'03	...	
...	1,696	81	...	0'21	...	
...	1,911	39	...	0'08	...	
141	286	67	...	0'14	...	
...	758	21	...	0'12	...	
152	953	17	...	0'10	...	
...	2,604	28	...	0'07	...	
...	1,013	15	...	0'03	...	
...	
60	738	...	...	...	...
...	347	11	...	0'03	...	
...	
...	62	30	...	0'08	...	
1,244	21,014	...	...	...	...
334	24,534	...	...	...	...
702	1,639	182	...	0'27	...	
...	450	113	...	0'25	...	
...	
15,305	62,305	...	...	...	S.S.P.	In Hanthawaddy, Pegu, Myitkyina, Mandalay and Nagay.
16,007	64,304	...	...	...	...
6,549	22,351	...	...	...	...

STATEMENT NO. VI.—*Progress and Cost*

District.	Traverse.					
	Area.	Length in miles of Traverse.		Azimuths observed.	Mathematical results.	
		(a) Boundaries.	(b) Connection.		Average Angular error.	Average Linear error.
(1)	(2)	(3a)	(3b)	(4)	(5a)	(5b)
<i>C.—Town Surveys.</i>	Sq. m.				Secs.	Links.
Myaungmya ...	...	1	...	...	...	...
Meiktila ...	...	...	...	...	...	...
Minbu ...	1	...	22.83	...	0.07	0.01
By Special Survey Party	172	42	6	3	...	...
Total for 1923-24 ...	272	43	28.83	3	...	...
Total for 1922-23 ...	231	82.5	12	...	...	...
<i>D.—Non-Revenue Surveys.</i>						
Thaton ...	...	...	...	...	...	...
By Special Survey Party	55.30	195.14	20.53	88	...	...
Total for 1923-24 ...	55.30	195.14	20.53	88	...	...
Total for 1922-23 ...	19	76	8	35	...	...

of Surveys in 1923-24—(Paragraphs 21 and 22)—continued.

No. of kwins.		Area.		Fields.		No. of kwins.	
Traversed (6a)	Paralled. (6b)	Gross.	Occupied.	Number. (8a)	Average Area.	Before Survey. (9a)	After Survey. (9b)
		Sq. m. (7a)	Acres. (7b)		Acres. (8b)		
4	4	0'28	151	800	0'19	1	4
...	..	0'27	172	549	0'31	5	5
8	...	1 00	454	4,924	0'09	8	13
28	18	0'94	550	1,544	...	17	17
40	22	2'49	1,327	7,817	0'17	31	39
41	41	7'45	4,825	16,842	2 75	1 3	128
...	...	12	7,418	...	...	216	216
33	23	...	...	...	...	...	...
33	23	12	7,418	...	...	216	216
12	12	...	...	...	...	...	...

STATEMENT NO. VI.—Progress and Cost

District.	Cadastral.		Cost (Field)				
	Number partalled.		Cost of				
	By Inspector.	By Superintendent.	Superintendence.	Inspection.	Subordinate Staff.	Miscellaneous.	Total.
(1)	(10a)	(10b)	(11a)	(11b)	(11c)	(11d)	(12)
<i>C.—Town Surveys— contd.</i>							
Myaungmya ...	4	4	...	20	82	...	102
Meiktila ...	5	4	...	...	96	30	126
Minbu ...	13	2	...	...	602	...	602
By Special Survey Party	17	17	885	972	6,965	3,992	12,814
Total for 1923-24 ...	39	27	885	992	7,745	4,022	13,644
Total for 1922-23 ...	128	61	2,491	2,719	11,245	2,350	18,805
<i>D.—Non-Revenue Surveys—contd.</i>							
Thaton ...	136	10	...	...	...	...	...
By Special Survey Party	...	...	391	1,150	9,119	8,624	19,284
Total for 1923-24 ...	136	16	391	1,150	9,119	8,624	19,284
Total for 1922-23 ...	...	...	2,689	1,340	4,642	6,131	14,805

APPENDICES.

47

of Surveys in 1923-24—(Paragaphs 21 and 22)—concluded.

Incidence of Cost.				Budget to which debited.	Remarks
Per sq. mile.	Per linear mile.	Per acre occupied.			
(13)	(14)	(15)	(16)	(17)	
Rs.	Rs.	Rs.			
364	...	0'68	...		
470	...	0'73	...		
708	...	1'33	...	64"=1 mile.	
...	S.S.P.	In Pegu, Akyab, Myaungmya and Magwe.	
...		
...		
1,176	957	...	S.S.P.	In Tavoy, Mergui and Minbu.	
...		
...		

STATEMENT No. VIII.—*Statistics relating to*

District.	Daily average number of pupils on the rolls.	Number of days the school was in session.	Average number of days on which tuition was received by each pupil presented for examination.	Number of pupils on the rolls on the 30th June 1924.			Total income for the year.
				Pupils paying fees.	Free pupils.	Total.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Prome ...	11	261	249	2	9	11	Rs. 130
Bassein ...	13	267	236	5	10	15	188
Ma-ubin ...	19	253	239	17	24	21	384
Amherst ...	22	262	244	20	1	21	631
Kyaukse ...	18	243	232	8	11	19	125
Minbu ...	15	250	229	15	...	15	211
Total for 1923-24	98	256*	238*	67	35	102	1,669
Total for 1922-23†	246	258*	238*	37	205	242	1,130

† Total for 17 Schools.

* Average.

Government Survey Schools, for the year 1923-24—(Paragraph 25).

Total expenditure for the year.					Number of pupils presented at the last examination in				Remarks.
On Establishment.	On Scholarships.	On prizes and bonuses.	On other contingencies.	Total.	Surveying.		Revenue law.		
(9)	(10)	(11)	(12)	(13)	Presented. (14)	Passed. (15)	Presented. (16)	Passed. (17)	
Rs. 1,712	Rs. 879	Rs. 153	Rs. 389	Rs. 3,133	11	7	..	..
1,817	558	89	357	2,811	16	10	..	..
1,146	491	112	549	2,298	27	5	..	..
1,352	175	116	800	2,443	21	10	21	15	
1,395	575	37	314	2,321	19	18	..	..
1,618	..	136	394	2,148	15	5	15	8	
9,040	2,678	643	2,803	15,164	109	55	36	23	
22,154	16,596	1,661	9,197	49,608	268	183	232	209	

NOTE ON THE ADMINISTRATION
OF THE
REGISTRATION DEPARTMENT

UNITED PROVINCES OF AGRA AND OUDH

For the year 1923.

Z 252,98.38

PUBLISHED BY AUTHORITY.



ALLAHABAD:
PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRESS, UNITED PROVINCES
1924.

Note on the Administration of the Registration Department for the year 1923.

The department remained under my charge throughout the year under report.

Administration

2. The number of documents registered aggregated 266,626 against 281,285 in 1922, showing a decrease of 14,659, or nearly 5·2 per cent., which is spread over all classes of instruments except those under the petty items of "awards" and "certified copies of decrees and orders of courts." About a third of the decrease is under the instruments of leases (perpetual and other than perpetual), the figures for which are liable to considerable fluctuations from year to year as agricultural leases are renewed after fixed periods. The fall under other instruments is ascribed mainly to the general prosperity of the season owing to the good harvests. The increase in the stamp duty is also considered by some of the District Registrars to be one of the possible causes for the decrease.

Forms nos. I and II.

3. The total receipts during the year show a fall by Rs. 29,951, or of 2·3 per cent., which is of course due to the reduction in the number of documents registered.

Form no. III.

4. The total expenditure during the year was Rs. 4,47,745 against Rs. 4,64,691 in 1922. The decrease is due in a large measure to the retrenchments referred to in paragraph 3 of the report for the last triennium, which took effect between May and October 1922, and to some extent to a reduction in expenditure on account of temporary establishment and also under other miscellaneous items on account of decrease of work.

Form no. IV.

5. Two cases of prosecution under the Registration Act were instituted during the year, in the Gorakhpur and Almora Registration districts, and the accused in both the cases were convicted under section 82 of the said Act. The cases against the two registration muharrirs who were committed to the sessions for participating in the commission of forgery, referred to in paragraph 9 of the last year's report, resulted in acquittal.

Prosecution and punishments.

A registration muharrir of the Sub-Registrar's office at Mussorie was accused of having accepted illegal gratification, and the charge having been brought home to him in a departmental enquiry, he was dismissed from Government service. The two muharrirs of the Sub-Registrar's office at Ghazipur, whose case for complicity in the embezzlement committed by the Sub-Registrar had been under consideration, have been dismissed from Government service, and their appeal against the order of dismissal is before the Government. The Sub-Registrar of Malihabad in district Lucknow was reduced from Rs. 75 to Rs. 60 grade for six months as a punishment for neglect of duty.

6. The total number of inspections during the year under report was 590 against 476 in 1922. Of the inspections in 1923, 128 were made by District Registrars, one by Additional Judge, 186 by Inspectors, 215 by the District staff, and 60 by me.

Inspections.

The Registrars of Farrukhabad, Pilibhit, Jhansi, Benares, Jaunpur, Almora, Hardoi, Sitapur, and Gonda, inspected all the Sub-Registration offices under their control, and those of Budaun, Shahajahanpur, Azamgarh and Muzabad inspected all offices but one in their respective districts. The Registrars of Banda, Ghazipur, Gorakhpur, and Lucknow inspected more than half of the offices under them; while the Registrars of Mainpuri,

Naini Tal, and Garhwal made only one inspection each. No inspections were made by the District Registrars of Cawnpore, Allahabad, Rae Bareilly, and Mirzapur. The omission is ascribed to the pressure of sessions work in the first three districts, while no reason is given for it by the District Registrar of Mirzapur, from whom an enquiry has been made.

M. Alauddin, Inspector of Registration offices, I Circle, reverted to his substantive post as deputy collector on 2nd August, 1923, and was succeeded by Khan Sahib M. Bashir Ali Khan, Deputy Collector. Pandit Raja Ram Upadhyaya, B.A., held his office as Inspector of Registration offices, 2nd circle, throughout the year

accommodation. 7. Funds were allotted for the following works during the year under report:—

- (a) Construction of a new Sub-Registrar's office at Sandila in the Hardoi district.
- (b) Completion of a combined building for the Sub-Registrar's office and the central office of records at Sitapur.
- (c) Completion of Sub-Registrar's office at Jalesar, district Etah.
- (d) Ditto at Sardhana, district Meerut.
- (e) Extension of Sub-Registrar's office at Phulpur, district Allahabad.
- (f) Extension of Sub-Registrar's office at Bansdih, district Ballia.
- (g) Additions and alterations in the Sub-Registrar's office at Muttra.

Funds were re-allotted during the year for the purchase of the dak bungalow at Purwa, in district Unao for conversion into the Sub-Registrar's quarters, the amount allotted in the preceding year having not been utilized by the Public Works department.

The works of repairs and petty construction in districts up to a cost not exceeding Rs. 1,000 are now entrusted to District Registrars in consequence of the transfer of these duties from the Public Works department to the department in occupation under G. O. no. 2898A/456W-1921, dated the 6th December, 1922.

eral.

8. The Government of India, with the advice of the Director of Statistics made certain changes in the statements appended to the annual notes and reports on the Registration Department and in compliance with G. O. no. 4, Registration, dated the 8th May, 1923, the revised forms have been adopted in the appendices to the present report.

Government orders were received towards the close of the year under report for realization of a fee of Rs. 5 per quarter from "Qabala Navis" or "Dastawez Navis" who write out documents at the offices of Sub-Registrars. The orders have been given effect to and the rules framed for regulating the practice of deed-writing and licensing the deed-writers are in submission to Government for approval.

Government order regarding the abolition of the Registration office at Ramnagar in district Bara Banki was received in December last, and has since been carried out. Further proposals relating to retrenchments in this department are under the consideration of Government.

BRIJ LAL,

*Inspector-General of Registration,
United Provinces.*

LUCKNOW :

The 25th April, 1924.

APPENDICES.

*Statement of instruments registered and of the value of property transferred
of Agra and Oudh*

Serial number.	Registration districts.	Immovable						
		Number of Registration offices.	Gift of immovable property [section 17 (1) clause (a)].			Sale or exchange of the value of Rs. 100 and upwards.		
			Number.	Aggregate value.	Fees.	Number.	Aggregate value.	Fees.
			3	4	5	6	7	8
	PROVINCE OF AGRA		Rs.	Rs.		Rs.	Rs.	
1	Sahasranpur	8	240	2,61,585	1,417	2,607	32,26,468	15,589
2	Meerut	12	748	9,32,456	8,607	5,724	84,45,896	28,788
3	Aligarh	14	389	5,87,546	2,889	5,216	54,94,781	18,054
4	Agra	12	252	40,889	1,085	2,566	48,42,305	18,848
5	Farrukhabad	6	227	1,29,447	767	1,347	10,87,877	5,455
6	Mainpuri	10	243	3,10,182	1,164	1,453	16,43,946	7,069
7	Bareilly	6	100	1,67,198	544	1,508	15,82,392	6,325
8	Filibhit	3	41	83,895	154	484	6,11,114	2,241
9	Moradabad	12	365	3,02,597	1,445	4,438	58,14,728	20,680
10	Budaun	6	203	1,33,254	693	1,480	11,71,188	6,162
11	Shahjahanpur	5	132	85,717	442	986	7,34,127	3,611
12	Gawnpore	11	843	7,41,037	2,070	2,163	46,43,981	14,154
13	Banda	14	304	2,08,099	1,147	891	4,46,089	3,450
14	Allahabad	7	286	6,88,957	1,666	1,231	17,59,237	5,830
15	Jhansi	11	205	1,05,405	739	928	5,81,739	3,402
16	Benares	4	372	3,89,250	1,597	2,075	25,56,855	9,880
17	Mirzapur	5	167	1,01,265	800	950	7,86,087	4,089
18	Jaunpur	6	395	3,51,557	1,628	1,965	11,29,498	7,671
19	Ghaazipur	8	235	3,65,927	1,256	1,433	32,66,064	6,648
20	Gorakhpur	12	720	9,29,937	3,408	2,908	62,83,298	19,191
21	Asamgarh	6	441	2,22,660	1,475	995	8,41,188	5,027
22	Maini Tal	4	36	43,215	167	888	5,37,417	1,846
23	Almora	5	179	60,789	501	797	5,96,832	3,819
24	Garchwal	4	105	51,558	330	820	2,89,180	1,302
	Total, Province of Agra, 1923 ..	191	6,718	71,20,792	30,876	42,823	5,75,37,028	2,14,822
	Ditto 1922 ..	191	7,081	81,51,962	32,232	45,447	6,42,59,973	2,22,707
	OUDH.							
25	Lucknow	14	711	8,84,889	3,155	3,124	44,38,764	15,659
26	Fardoi	5	297	3,02,615	1,275	988	9,44,617	4,314
27	Sitapur	9	277	4,83,314	1,242	701	8,58,899	3,888
28	Gonda	9	493	4,71,285	1,698	800	11,52,931	3,750
29	Fyzabad	10	792	4,86,051	2,606	1,490	12,99,395	6,990
30	Rae Bareli	8	587	5,99,374	2,223	1,036	11,53,972	4,838
	Total, Oudh, 1923 ..	65	3,162	31,53,328	12,199	8,074	98,48,178	38,439
	Ditto 1922 ..	65	3,075	26,33,150	10,769	8,444	1,14,94,137	39,729
	Grand Total, United Provinces, 1923 ..	246	9,880	1,02,74,320	43,075	50,897	6,73,85,206	2,53,261
	Ditto 1922 ..	246	10,108	1,06,95,112	48,001	53,891	7,57,54,110	2,62,486

registered instruments together with the fees thereof in the United Provinces the year 1923.

Part (Book I).									Serial number,
Using immoveable property.									
Sale or exchange of value less than Rs. 100 (sections 54 and 118 of Transfer of Property Act).			Mortgage.			Others registered under [section 17 (1) clauses (b) and (c)].			
Number.	Aggregate value.	Fees.	Number.	Aggregate value.	Fees.	Number.	Aggregate value.	Fees.	
9	10	11	12	13	14	15	16	17	
	Rs.	Rs.		Rs.	Rs.		Rs.	Rs.	
378	26,370	631	2,155	88,76,114	16,711	674	10,57,690	8,697	1
870	50,297	1,037	2,256	87,48,621	41,566	1,448	13,32,057	6,551	2
607	34,309	801	4,754	47,87,948	32,993	1,798	48,59,950	11,986	3
436	26,182	534	2,750	34,97,048	16,151	961	18,83,371	5,490	4
610	51,728	796	1,814	11,74,297	6,487	677	9,21,192	2,731	5
410	26,583	492	1,904	15,36,331	8,052	698	7,49,370	3,320	6
425	22,994	504	2,114	14,05,459	7,189	481	7,94,822	2,638	7
524	12,218	250	526	6,29,825	2,135	149	2,88,743	966	8
1,079	55,399	1,285	3,952	30,51,589	16,113	1,875	33,38,978	10,829	9
570	31,750	436	2,078	11,60,807	6,501	659	16,38,142	4,384	10
368	18,790	426	1,030	7,19,925	3,679	282	3,66,725	1,872	11
698	85,118	810	2,213	40,58,405	13,680	515	20,40,611	7,941	12
327	36,238	470	689	3,53,154	2,259	192	1,48,161	737	13
295	15,739	363	1,245	10,84,190	5,095	367	4,45,591	1,715	14
423	24,411	487	742	4,71,284	2,638	259	2,10,980	1,069	15
501	25,645	548	5,806	28,52,635	17,709	516	6,89,302	2,374	16
283	15,452	329	2,995	16,89,951	10,537	270	2,14,208	945	17
430	22,229	492	8,456	32,16,264	26,349	538	4,70,650	2,137	18
393	23,408	497	6,688	38,83,499	25,296	283	4,08,550	1,418	19
659	40,838	880	7,966	60,70,963	30,953	2,222	27,14,776	9,796	20
134	12,068	327	1,088	8,33,307	7,235	255	1,81,065	1,200	21
42	2,210	48	881	6,10,078	1,882	98	62,008	324	22
27	1,892	36	897	2,40,268	1,496	102	64,466	410	23
19	1,286	24	62	53,631	271	85	10,638	81	24
10,567	5,20,672	12,659	78,481	5,50,58,735	2,92,902	15,129	2,53,80,754	83,728	
11,240	6,37,339	13,324	75,638	5,86,12,318	2,95,425	16,729	2,50,10,137	86,067	
1,007	49,428	1,149	6,258	55,34,495	28,747	681	16,12,828	4,095	25
222	16,311	349	2,980	15,23,806	10,125	460	6,51,525	2,133	26
237	9,718	250	2,109	20,37,579	8,419	379	6,00,162	1,921	27
699	17,838	431	3,155	24,35,575	11,060	568	6,87,772	3,463	28
512	28,057	578	11,059	36,80,064	28,842	677	9,30,918	2,819	29
249	22,314	355	8,517	17,57,120	13,000	892	31,835	1,583	30
2,686	1,50,966	3,106	29,574	1,70,37,699	94,185	3,448	48,20,580	15,920	
3,743	2,82,245	3,946	28,277	1,81,49,005	91,428	3,891	46,26,359	17,074	
13,053	7,71,333	15,745	1,02,855	7,20,96,432	3,87,085	18,577	2,99,01,334	99,846	
18,983	16,78,684	17,270	1,08,910	7,69,61,823	3,86,869	20,680	2,96,36,496	1,03,131	

*Statement of instruments registered and of the value of property transferred
of Agra and Oudh*

Serial number.	Registration districts.	Immoveable							
		Compulsory Registrations affecting immovable							
		Perpetual lease [section 17 (1) clause (d)].				Lease (other than perpetual lease).			
		Number.	Value of annual rents.	Amount of premia.	Fees.	Number.	Value of annual rents.	Amount of premia.	Fees.
1	18	19	20	21	22	23	24	25	
	PROVINCE OF AGRA.		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
1	Sabarapur ..	158	6,078	..	377	2,121	8,62,410	..	3,026
2	Meerut ..	333	87,829	18,957	619	4,768	7,14,127	86,589	5,964
3	Aligarh ..	776	1,68,511	915	1,059	4,147	6,28,071	83,102	4,885
4	Agra ..	97	5,801	..	172	1,464	2,26,251	37,885	2,358
5	Farrukhabad ..	121	8,843	5,545	195	485	61,639	4,993	608
6	Mainpuri ..	227	20,845	895	402	700	1,03,709	26,129	1,025
7	Bareilly ..	87	7,257	1,727	131	549	1,06,168	1,400	827
8	Pilibhit ..	40	8,058	1,474	54	151	54,951	368	270
9	Moradabad ..	55	4,416	..	78	2,467	6,15,829	84,646	4,358
10	Budaun ..	91	10,369	3,466	145	409	45,726	7,846	532
11	Shahjahanpur ..	20	126	740	20	160	23,044	895	217
12	Cawnpore ..	50	8,600	..	101	572	1,60,413	..	1,104
13	Banda ..	21	805	1,350	34	139	82,498	845	276
14	Allahabad ..	224	6,092	26,528	351	536	1,13,314	25,477	886
15	Jhansi ..	86	591	..	47	246	19,971	..	457
16	Benares ..	1,537	26,251	2,71,188	2,245	1,122	1,24,857	40,664	1,890
17	Mirzapur ..	258	12,785	..	537	462	58,395	..	731
18	Jaunpur ..	1,119	11,781	1,98,895	1,851	443	24,000	10,430	462
19	Ghazipur ..	627	9,794	1,45,393	1,370	550	48,416	..	577
20	Gorakhpur ..	217	9,215	13,247	335	776	1,70,308	10,163	1,261
21	Azamgarh ..	440	6,982	26,068	565	139	12,307	1,327	155
22	Naini Tal ..	27	2,571	9,305	66	121	36,852	9,305	158
23	Almora ..	183	294	25,044	265	149	2,367	2,600	239
24	Garkwal ..	98	4	19,181	176	19	569	..	15
	Total, Province of Agra, 1923 ..	16,857	5,58,289	7,69,308	11,095	22,715	37,55,130	5,35,663	31,576
	Ditto 1922 ..	8,921	4,30,651	..	11,110	25,194	44,55,846	12,96,248	50,697
	OUDH.								
25	Lucknow ..	28	2,255	2,078	68	215	83,803	2,106	460
26	Hardoi ..	31	386	..	34	231	22,824	..	805
27	Sitapur ..	13	1,391	..	17	274	1,15,014	..	437
28	Gonda ..	7	559	..	7	567	2,91,044	..	1,043
29	Fyzabad ..	387	4,161	..	810	472	29,026	..	440
30	Rae Bareilly ..	301	5,938	2,18,286	831	117	12,762	..	119
	Total, Oudh, 1923 ..	767	14,680	2,20,364	1,767	1,876	5,54,273	2,100	2,804
	Ditto 1922 ..	746	97,451	..	1,325	2,408	9,16,600	3,11,411	3,206
	Grand Total, United Provinces, 1923 ..	7,604	5,72,969	9,89,672	12,862	24,591	45,09,403	5,37,763	34,380
	Ditto 1922 ..	9,367	5,28,102	..	12,435	27,602	63,71,846	16,07,659	33,903

registered instruments together with the fees thereof in the United Provinces for the year 1923—(continued).

Property (Book I)—(continued).

Mandatory compulsory registrations affecting immovable property.			Optional Registrations affecting immovable property.											Serial number.
Number.	Aggregate value.	Fees.	Sale or exchange of value less than Rs. 100.			Mortgage.			Lease.					
			Number.	Aggregate value.	Years.	Number.	Aggregate value.	Years.	Number.	Aggregate value of rents.	Amount of premia.	Years.		
25	27	28	29	30	31	32	33	34	35	36	37	38		
	Rs.	Rs.		Rs.	Rs.		Rs.	Rs.		Rs.	Rs.	Rs.		
9,331	88,15,850	41,941	..	..	..	..	..	..	289	30,457	..	188	1
33,145	2,07,06,113	88,150	..	..	..	..	..	..	1,268	41,528	8,006	1,016	2
15,682	1,65,41,061	63,717	..	..	..	..	..	..	679	37,199	6,838	492	3
9,526	1,00,51,742	39,589	..	..	..	..	..	..	289	21,617	..	273	4
5,281	34,03,823	18,839	..	..	..	..	..	..	196	7,058	..	157	5
5,641	43,89,917	21,524	..	..	..	..	..	..	186	7,969	4,517	184	6
5,214	40,86,228	18,758	..	..	..	..	..	..	200	30,731	..	180	7
1,615	16,39,799	6,149	..	..	..	..	..	..	228	39,961	170	815	8
14,241	1,31,82,486	54,294	..	..	..	..	..	..	981	37,858	13,210	1,093	9
5,590	42,11,266	19,096	..	..	..	..	..	..	641	17,880	8,370	532	10
2,938	19,88,554	9,867	..	..	..	..	..	..	162	17,242	..	180	11
6,517	1,16,32,160	39,860	..	..	..	..	..	..	25	1,885	..	28	12
2,558	12,24,544	8,872	..	..	..	..	..	..	1	40	..	1	13
4,074	40,63,220	16,867	..	..	..	..	..	..	1	1	..	1	14
2,940	14,15,441	8,704	..	..	..	..	..	..	4	221	..	3	15
11,429	64,14,235	35,043	..	..	..	..	..	..	140	8,700	..	109	16
5,295	38,75,703	17,781	..	..	..	..	..	..	80	7,799	..	63	17
13,846	52,06,634	40,485	..	..	..	..	..	..	3	230	..	2	18
10,314	80,04,623	36,982	..	..	..	..	..	..	23	38,500	..	70	19
15,468	1,51,69,024	65,824	..	..	..	..	..	..	42	8,559	..	47	20
4,502	21,65,697	15,884	..	..	..	..	..	..	..	..	..	..	21
1,088	12,84,951	4,491	..	..	..	..	..	..	1	54	..	1	22
1,834	9,66,422	6,266	..	..	..	..	..	..	..	..	..	..	23
453	8,66,924	2,199	..	..	..	..	..	..	..	..	..	..	24
78,070	14,98,31,598	6,77,656	..	..	..	..	..	..	5,218	3,65,854	27,212	4,945	25
30,405	16,16,38,226	6,91,559	..	..	..	..	..	..	5,625	3,93,839	30,857	4,921	26
12,019	1,26,06,502	48,327	..	..	..	..	..	..	18	18,009	..	86	25
5,280	64,81,394	18,638	..	..	..	..	..	..	10	958	..	41	26
9,960	41,58,077	16,074	..	..	..	..	..	..	17	16,188	..	63	27
6,380	50,57,044	21,442	..	..	..	..	..	..	215	1,75,981	..	508	28
15,329	64,66,372	42,085	..	..	..	..	..	..	1	26	..	1	29
6,499	35,29,815	21,952	..	..	..	..	..	..	..	..	..	..	30
19,587	1,52,79,504	1,88,418	..	..	..	..	..	..	256	2,10,507	..	519	31
49,588	3,67,98,447	1,67,477	..	..	..	..	..	..	140	64,825	..	198	32
27,457	18,51,11,002	8,46,054	..	..	..	..	..	..	5,474	5,74,081	47,212	5,464	33
39,788	20,06,26,873	8,59,039	..	..	..	..	..	..	5,785	4,64,164	80,857	5,213	34

*Statement of instruments registered and of the value of property transferred
of Agra and Oudh*

Serial number.	Registration districts.	Immoveable								
		Optional Registrations								
		Other registered under section 18, clauses (a) and (b).			Awards [section 17 (2) clause (VI)].			Miscellaneous registrations other than certified copies of decrees and orders of court.		
		Number.	Aggregate value.	Fees.	Number.	Aggregate value.	Fees.	Number.	Aggregate value.	Fees.
1	39	40	41	42	43	44	45	46	47	
		Rs.	Rs.		Rs	Rs.		Rs.	Rs.	
1	Sabarapur ..	305	12,914	354	4	8,000	30	..	..	..
2	Meerut ..	686	30,704	717	1	300	3	..	..	..
3	Aligarh ..	618	22,895	646	2	500	17	..	..	..
4	Agra ..	223	10,158	238	4	4,350	95	..	..	..
5	Farrukhabad ..	195	8,972	329	23	19,560	124	..	..	..
6	Mainpuri ..	98	1,555	84	5	215	16	..	..	..
7	Barilly ..	129	8,838	142	1	..	2	..	..	..
8	Pilibhit ..	71	3,599	79	1	300	4	..	..	..
9	Moradabad ..	554	36,038	634	10	17,150	101	2	4,975	18
10	Budaun ..	429	14,317	430	6	43,584	83	..	..	..
11	Shahjahanpur ..	89	16,547	127	6	3,400	31	..	..	..
12	Cawnpore ..	38	3,203	51	5	13,200	48	1	5,700	2
13	Banda ..	34	9,053	50	1	800	4	..	..	..
14	Allahabad ..	40	1,547	46	..	..	..	..	..	..
15	Jhansi ..	41	8,253	83	..	..	..	..	..	..
16	Benares ..	134	4,732	140	9	4,650	45	..	..	..
17	Mirzapur ..	71	2,180	87	5	81,599	75	..	..	..
18	Jaunpur ..	125	6,839	152	..	..	..	..	..	..
19	Ghasipur ..	45	2,280	58	4	85,375	64	..	..	..
20	Gorakhpur ..	968	60,297	1,237	2	16,000	36	..	..	..
21	Assamgarh ..	107	11,061	158	..	..	..	..	..	..
22	Naini Tal ..	1	50	1	1	200	3	..	..	..
23	Almora ..	13	1,139	20	..	..	..	..	..	..
24	Garhwal ..	..	..	..	..	..	..	..	..	..
	Total, Province of Agra, 1923 ..	4,944	2,75,370	5,698	89	1,97,523	720	3	10,575	20
	Ditto 1922 ..	5,856	3,50,254	6,786	87	3,43,484	896	76	17,611	123
	Oudh.									
25	Luoknow ..	53	2,792	61	3	400	28	12	12,081	18
26	Hardoi ..	64	5,327	84	13	12,705	95	4	21,624	7
27	Sitapur ..	85	29,501	188	4	14,000	36	23	53,430	37
28	Gonda ..	344	15,250	484	..	..	..	13	11,256	19
29	Fyzabad ..	185	6,240	152	2	3,600	14	3	1,510	4
30	Rae Bareilly ..	110	6,680	128	..	..	..	2	800	3
	Total, Oudh, 1923 ..	791	65,890	1,057	22	39,705	173	57	1,03,651	88
	Ditto 1922 ..	679	82,065	1,035	11	10,285	70	82	1,01,752	185
	Grand Total, United Provinces, 1923 ..	5,735	3,39,460	6,755	111	2,28,228	893	60	1,14,326	108
	Ditto 1922 ..	6,535	4,42,319	7,771	98	3,53,669	966	158	1,19,363	259

No. 1.

by registered instruments together with the fees thereof in the United Provinces for the year 1923—(concluded).

property Book 'I'—(concluded).								
affecting immovable property.								
Certified copies of decrees and orders of court.			Total, optional registrations affecting immovable property.			Total (compulsory and optional), affecting immovable property (columns 26 to 28 and 51 to 53).		
Number.	Aggregate value.	Fees.	Number.	Aggregate value.	Fees.	Number.	Aggregate value.	Fees.
48	49	50	51	52	53	54	55	56
	Rs.	Rs.		Rs.	Rs.		Rs.	Rs.
..	..	..	538	51,971	572	9,889	88,67,921	41,918
..	..	..	1,955	79,433	1,736	25,100	9,08,25,545	89,866
..	..	..	1,329	50,594	1,095	19,991	1,65,91,655	68,812
..	..	..	468	26,125	546	3,992	1,00,57,867	40,084
..	..	..	414	35,580	510	5,695	84,45,408	17,449
..	..	..	219	9,159	233	5,860	49,99,066	31,757
1	40	1	331	29,687	335	5,546	41,15,865	19,088
..	..	..	360	38,880	393	1,915	16,72,679	6,547
1	800	2	1,498	1,46,864	1,848	15,739	1,38,29,320	56,142
..	..	..	1,076	74,781	1,045	6,665	42,86,017	20,141
..	..	..	246	37,249	288	2,242	19,76,843	10,155
1	5,000	1	70	22,278	130	6,597	1,17,20,438	89,990
..	..	..	86	3,396	55	2,569	12,27,940	6,427
..	..	..	41	1,548	47	4,115	40,64,768	16,404
..	..	..	45	8,474	86	2,885	14,28,915	6,850
..	..	..	283	18,084	294	11,712	64,27,377	36,337
..	..	..	106	42,528	225	5,401	29,18,321	17,989
1	1,000	5	129	8,129	159	18,475	52,14,768	40,644
..	..	..	71	176,155	187	10,285	80,80,783	37,149
..	..	..	1,012	79,856	1,320	16,475	1,52,48,880	67,144
..	..	..	107	11,061	158	4,609	21,76,658	16,042
..	..	..	3	804	5	1,091	12,85,255	4,496
..	..	..	13	1,189	20	1,847	9,67,567	6,286
..	..	..	..	..	..	653	8,53,924	2,199
4	6,340	9	10,258	8,51,662	11,292	1,68,328	15,06,83,060	6,88,928
2	958	3	11,646	11,22,096	13,879	2,01,851	16,29,50,322	7,04,331
8	21,514	22	89	54,746	165	12,108	1,26,61,248	48,492
..	..	..	91	40,614	197	5,971	85,02,508	18,735
1	210	4	130	1,16,274	278	4,110	49,74,351	16,352
5	6,889	8	577	3,08,776	1,029	6,857	52,65,820	22,471
6	14,539	9	147	26,715	180	15,476	64,32,387	42,255
3	5,000	11	115	9,530	142	6,614	35,39,595	23,094
23	46,252	54	1,149	4,57,005	1,891	50,536	3,57,36,809	1,70,409
22	68,384	75	984	3,26,611	1,613	50,517	3,91,25,053	1,69,090
27	52,592	65	11,407	15,06,667	13,285	2,39,364	18,64,19,669	8,59,337
24	69,192	78	12,650	14,48,707	14,293	3,52,368	30,20,75,380	8,73,321

Statement of instruments registered and of the value of property transferred
of Agra and Oudh for the year 1923,

Serial number.	Registration districts.	Compulsory.			Optional.					
		Gift-affecting movable property (section 128, clause 2; Transfer of Property Act).			Sale, etc., of moveable property (section 18, clause (d)).			Bonds or obligations for payment of money (section 18, clause (f)).		
		Number.	Aggregate value.	Fees.	Number.	Aggregate value.	Fees.	Number.	Aggregate value.	Fees.
		1	2	3	4	5	6	7	8	9	10
	Province of Agra		Rs.	Rs.		Rs.	Rs.		Rs.	Rs.
1	Saharanpur ..	1	100	2	264	2,10,011	668	257	1,12,278	688
2	Meerut ..	..	..	..	1,046	2,16,068	1,661	665	2,60,975	1,815
3	Aligarh ..	..	..	..	558	1,59,824	860	964	4,23,229	2,055
4	Agra ..	1	609	5	848	83,204	624	274	1,23,029	719
5	Barrukhabad ..	2	1,150	6	185	40,220	258	137	73,369	334
6	Mainpuri ..	..	..	..	178	29,237	252	165	49,819	372
7	Ba silly ..	1	100	1	274	87,028	423	264	75,650	532
8	Filibhit ..	..	..	..	106	33,649	197	151	24,750	219
9	Moradabad ..	1	200	2	1,364	2,14,668	1,877	425	1,38,419	925
10	Budaun ..	..	..	..	594	73,448	708	291	68,747	487
11	Shahjahanpur ..	..	..	..	254	44,483	340	265	88,841	557
12	Cawnpore ..	3	1,800	9	113	51,807	268	171	1,49,856	687
13	Banda ..	..	..	..	16	4,694	81	82	40,008	123
14	Allahabad ..	..	..	..	15	3,124	81	84	59,877	148
15	Jhansi ..	2	745	6	32	25,755	85	40	98,337	148
16	Benares ..	18	7,680	36	60	40,838	182	421	1,23,352	903
17	Mirzapur ..	3	450	4	19	8,571	84	177	1,22,244	444
18	Jaunpur ..	..	..	..	25	7,787	55	370	77,470	671
19	Ghazipur ..	1	800	3	14	7,671	42	309	1,08,850	963
20	Gorakhpur ..	..	..	..	66	50,518	190	247	1,12,454	634
21	Amangarth ..	..	..	..	29	20,087	98	66	15,889	165
22	Naini Tal ..	..	..	..	44	16,408	153	15	19,120	71
23	Almora ..	1	52	1	7	19,228	33	13	20,148	66
24	Garhwal ..	..	..	..	1	500	3	4	5,360	23
	Total, Province of Agra, 1923 ..	28	13,177	75	5,586	13,69,508	9,048	5,809	22,51,959	15,564
	Ditto 1922 ..	67	82,543	216	6,017	16,44,020	10,412	6,543	25,76,290	15,274
	Oudh.									
25	Lucknow ..	8	400	4	209	1,00,055	411	355	1,46,584	805
26	Hardoi ..	3	9,084	20	140	20,245	176	164	49,964	324
27	Sitapur ..	2	84	2	206	83,379	339	242	1,46,423	581
28	Gonda ..	1	500	3	62	43,919	192	289	2,35,501	1,020
29	Fyzabad ..	1	300	2	59	17,954	133	651	1,62,496	1,225
30	Bae Bae II ..	3	800	7	44	24,508	117	197	2,10,778	812
	Total, Oudh, 1923 ..	15	11,148	59	720	2,90,060	1,368	1,987	9,51,851	4,767
	Ditto 1922 ..	13	2,050	19	668	1,66,102	1,076	1,837	7,74,419	4,499
	Grand Total, United Provinces, 1923 ..	41	24,325	114	6,306	16,59,568	10,416	7,796	33,03,810	18,331
	Ditto 1922 ..	79	84,593	235	6,685	18,10,122	11,488	8,440	33,50,879	19,773

No. II.

by registered instruments together with the fees thereof in the United Provinces Moveable property (Book 4) and wills (Book 3).

All other documents registered under section 18, clause (f).			Total, registrations affecting moveable property (Book 4).			Optional.		Compulsory.		Serial number.
Number.	Aggregate value.	Fees.	Number.	Aggregate value.	Fees.	Wills including cancellation (Book 3).		Written authorities to adopt (including cancellations) other than those conferred by wills (Book 3).		
						Number.	Fees.	Number.	Fees.	
11	12	13	14	15	16	17	18	19	20	
	Rs.	Rs.		Rs.	Rs.		Rs.		Rs.	
895	82,078	1,202	917	4,04,465	2,560	112	542	..	..	1
682	4,89,562	4,492	2,373	9,15,633	5,768	388	1,672	..	..	2
678	4,03,825	2,454	2,200	9,36,379	5,369	148	645	..	..	3
541	4,62,328	2,015	1,164	6,72,226	3,363	128	627	..	..	4
262	75,298	795	686	1,69,646	1,388	64	310	1	5	5
874	51,868	1,205	717	1,20,424	1,629	90	451	..	..	6
918	2,77,184	2,232	1,452	4,12,962	3,128	64	314	..	..	7
1,852	4,43,780	3,870	2,108	5,02,179	4,088	24	113	..	..	8
630	4,47,796	2,449	2,420	8,01,118	5,254	111	541	..	..	9
149	1,35,929	537	1,034	2,56,110	1,732	20	96	..	..	10
155	2,86,801	628	674	3,70,205	1,425	18	82	..	..	11
707	20,97,853	2,645	994	23,00,815	8,519	168	791	2	10	12
255	77,552	725	868	1,42,214	1,018	54	249	..	..	13
259	1,21,873	895	808	1,54,178	1,049	98	492	..	..	14
879	97,038	1,200	458	21,870	1,439	51	244	..	..	15
498	8,57,807	1,734	993	5,29,977	2,325	238	1,112	2	9	16
198	89,681	598	898	2,15,896	1,075	51	244	..	..	17
190	55,535	494	585	1,40,593	1,220	25	116	..	..	18
204	1,18,460	582	528	2,80,381	1,590	58	289	..	..	19
671	6,45,795	2,218	877	8,08,767	3,042	217	1,040	..	..	20
128	8,479	848	218	44,446	601	15	69	..	..	21
57	21,771	205	116	57,299	429	18	83	2	15	22
25	2,400	154	55	41,828	254	47	214	..	..	23
18	..	55	28	5,860	81	29	69	..	..	24
10,125	66,65,912	31,417	21,948	1,05,38,551	34,104	2,160	10,284	8	41	
10,422	71,77,943	38,578	28,049	1,14,80,769	69,475	2,217	10,607	16	65	
1,184	7,10,831	8,729	1,751	9,57,860	4,949	268	1,250	..	..	25
288	55,692	868	686	1,34,965	1,388	55	307	..	..	26
387	78,469	1,240	887	8,08,395	2,162	97	449	..	..	27
747	2,70,468	1,859	1,088	5,50,382	3,104	90	416	..	..	28
516	1,34,363	1,478	1,327	3,14,922	2,689	125	626	..	..	29
872	1,18,668	1,049	716	8,49,733	1,965	176	824	..	..	30
5,494	15,63,304	10,248	6,214	26,16,163	16,422	221	5,672	..	..
8,378	12,64,423	10,459	5,868	21,98,994	16,058	897	4,199	..	..
13,619	80,27,216	41,658	27,762	1,50,14,714	70,826	2,981	14,156	8	41	
13,795	84,32,366	44,032	28,917	1,36,77,760	75,528	3,108	14,808	16	65	

Statement of income from fees on registrations and all other

Serial number.	Registration districts.	Registrations under section 25.		Registrations under section 34.		Commission issued (sections 33 and 36).	
		Number.	Fines.	Number.	Fines.	Number.	Fees.
		2	3	4	5	6	7
			Rs.		Rs.		Rs.
	Office of the Inspector-General of Registration, United Provinces, PROVINCE OF AGRA.	..	..	..	..	..	..
1	Saharanpur	1	8	..	..	1	10
2	Meerut .. .. .	..	..	..	..	4	30
3	Aligarh	2	62	..	..	5	50
4	Agra .. .. .	..	..	..	..	3	20
5	Farrukhabad .. .. .	..	..	..	..	..	..
6	Mainpuri .. .. .	..	..	..	..	3	25
7	Barailly	2	23	..	..	3	30
8	Filibhit .. .. .	..	..	..	..	1	10
9	Moradabad	2	15	..	..	3	30
10	Budhan .. .. .	..	..	..	..	1	5
11	Shehjabanpur .. .. .	..	..	..	..	5	35
12	Cawnpore	1	8	1	80	..	..
13	Banda .. .. .	..	..	..	..	5	50
14	Allahabad .. .. .	..	..	4	167	3	30
15	Jhansi .. .. .	..	..	..	..	..	..
16	Benares	2	68	1	15	3	30
17	Mirzapur	2	7	1	1	1	10
18	Jaunpur .. .. .	..	..	..	..	1	10
19	Ghatampur .. .. .	..	..	1	48	7	70
20	Gorakhpur .. .. .	..	..	..	..	5	50
21	Azamgarh	2	168	..	..	6	40
22	Najaf Tal .. .. .	..	..	..	..	1	10
23	Almora .. .. .	..	..	8	7	1	10
24	Gazhwal .. .. .	..	..	..	..	..	..
	Total, Province of Agra, 1923..	14	359	11	117	61	553
	Ditto 1922 ..	41	286	9	330	57	702
	ODDH.						
25	Lucknow	2	16	1	5	3	25
26	Hardoi .. .. .	..	..	..	..	..	..
27	Bitapur	1	8	..	..	3	15
28	Gonda	3	27	..	..	..	..
29	Fyzabad .. .. .	..	..	..	..	2	15
30	Rae Bareilly .. .. .	..	..	..	..	..	..
	Total Oudh, 1923 ..	6	46	1	5	6	55
	Ditto 1922 ..	6	40	..	..	3	35
	Grand Total, United Provinces, 1923..	20	405	12	122	69	610
	Ditto 1922 ..	47	326	9	330	59	787

19. III.

receipts with the number of operations thereunder.

Visits paid (sections 81, 83 and 85).		Inspection of Books 1 and 2 and the Indexes to Book 1 (section 57(i)).		Applications for searching Indexes III and IV and Inspection of Books 3 and 4 (under section 57(4)).		Applications for copies of entries in books and indexes.		Covers containing wills deposited (section 42).		Serial number.
Number.	Fees.	Number.	Fees.	Number.	Fees.	Number.	Fees.	Number.	Fees.	
8	9	10	11	12	13	14	15	16	17	
..	Rs.	..	Rs.	..	Rs.	..	Rs.	..	Rs.	
188	1,875	823	1,981	96	528	2,435	2,825	..	..	1
172	1,715	3,908	4,317	28	22	6,574	6,968	..	..	2
250	2,471	2,590	3,889	3,419	15,781	5,450	6,470	1	3	3
167	1,560	1,938	9,017	15	10	2,836	3,168	..	..	4
53	525	857	478	912	5,546	1,921	1,875	..	..	5
88	626	1,842	7,186	9	18	1,909	2,230	..	..	6
109	1,006	1,210	4,862	17	11	1,852	1,478	..	..	7
42	420	390	828	364	1,469	522	550	..	..	8
332	3,350	3,776	11,148	78	46	3,748	4,524	..	..	9
92	900	3,042	7,935	15	8	1,862	1,449	..	..	10
67	665	405	794	1	1	842	847	..	..	11
180	1,760	1,552	4,580	476	2,720	2,160	3,018	..	..	12
20	200	228	694	368	1,156	753	856	..	..	13
107	1,040	727	1,990	189	1,479	1,157	1,437	..	..	14
61	356	137	255	276	1,748	694	647	..	..	15
194	1,855	3,612	4,913	243	935	2,740	3,019	..	..	16
80	800	631	970	7	7	1,181	1,307	..	..	17
37	870	1,259	1,517	6	8	1,868	2,084	..	..	18
58	665	1,291	2,166	531	4,066	2,227	2,678	..	..	19
105	1,035	5,284	15,428	67	77	5,290	6,437	..	..	20
52	475	635	475	306	1,076	1,711	1,800	..	..	21
19	190	45	68	54	229	151	139	..	..	22
16	144	92	54	2	2	327	225	..	..	23
1	10	12	11	..	..	156	98	..	..	24
2,484	124,242	32,543	83,638	7,465	58,355	49,446	56,122	19	78	
2,850	25,968	88,687	83,285	7,697	84,675	57,028	66,022	26	104	
197	1,895	1,594	9,082	15	10	4,319	4,801	..	..	25
42	385	1,190	1,298	479	2,800	1,579	1,848	..	..	26
58	615	352	627	4	3	1,550	1,741	..	..	27
49	471	615	1,327	509	2,812	1,755	1,698	..	..	28
48	464	1,991	3,040	68	2,439	2,878	2,781	..	..	29
59	580	536	576	267	1,610	1,571	1,811	..	..	30
458	4,414	6,278	15,040	1,337	9,574	12,062	14,960	10	40	
445	4,320	6,414	17,260	1,608	5,744	14,041	15,914	12	48	
2,937	28,656	58,821	1,00,678	8,800	46,829	60,498	70,782	23	110	
2,795	30,782	40,001	1,07,485	9,365	40,419	71,069	81,986	38	152	

Statement of income from fees on registrations and all other

Serial number.	Registration districts.	Covers containing wills withdrawn (section 44).		Covers containing wills opened (section 45).		Powers of Attorney authenticated.	
		Number.	Fees.	Number.	Fees.	Number.	Fees.
		18	19	20	21	22	23
			Rs.		Rs.		Rs.
	Office of the Inspector-General of Registration, United Provinces.	..	..	..	..	..	..
	PROVINCE OF AGRA						
1	Saharanpur	2	8	..	..	74	188
2	Meerut	1	4	..	..	60	109
3	Aligarh .. .. .	..	..	1	5	94	270
4	Agra .. .. .	..	..	..	..	74	177
5	Farrukhabad	1	4	1	4	19	55
6	Mainpuri .. .. .	..	..	..	..	27	75
7	Bareilly .. .. .	..	..	..	..	37	99
8	Firibid .. .. .	..	..	..	..	5	15
9	Moradabad .. .. .	..	..	..	..	90	251
10	Budoun .. .. .	..	..	1	4	15	40
11	Shahjahanpur .. .. .	..	..	..	..	9	25
12	Cawnpore .. .. .	..	..	..	..	61	156
13	Banda .. .. .	..	..	..	..	15	42
14	Allahabad .. .. .	..	..	..	..	50	136
15	Jhansi .. .. .	..	..	..	..	12	34
16	Benares .. .. .	..	..	..	..	128	351
17	Mirzapur .. .. .	..	..	..	..	22	57
18	Jaunpur .. .. .	..	..	2	10	43	128
19	Ghaziपुर .. .. .	..	..	..	..	32	92
20	Gorakhpur	1	4	1	4	74	212
21	Azamgarh .. .. .	..	..	..	..	17	45
22	Naini Tal .. .. .	..	..	..	..	20	45
23	Almora	1	1	..	..	11	30
24	Garhwal .. .. .	..	..	..	..	1	2
	Total, Province of Agra 1923..	6	21	6	27	995	2,695
	Ditto 1922	7	24	12	49	1,060	2,557
	ONDH.						
25	Lucknow	1	4	2	6	85	220
26	Hardoi .. .. .	..	..	1	4	15	41
27	Sitapur .. .. .	..	..	2	12	46	146
28	Gonda .. .. .	..	..	1	4	85	261
29	Fyzabad .. .. .	..	..	2	8	49	153
30	Rae Bareilly .. .. .	..	..	..	..	20	55
	Total, Oudh, 1923	1	4	8	36	300	886
	Ditto 1922	4	16	7	28	289	639
	Grand Total, United Provinces, 1923.	7	25	14	63	1,295	3,579
	Ditto 1922	11	40	19	77	1,349	3,246

No. III.

receipts with the number of operations thereunder—(concluded).

All other receipts.	Total receipts.	Total of all registrations Forms I, (columns 64 and 66) and II (columns 14 and 16 to 20.)		Total income	Total expenditure (Form IV).	Total net income.	Serial number.
		26	27				
24	25	26	27	28	29	30	
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
..	..	..	..	..	25,880	(-)-25,880	
5,458	12,879	10,786	44,473	57,394	15,484	42,460	1
10,034	39,271	27,473	35,954	1,26,497	28,614	97,883	2
255	39,257	19,181	69,181	93,039	29,201	63,838	3
612	14,576	11,156	43,447	58,655	29,430	29,225	4
245	8,732	6,281	18,637	27,879	9,044	18,835	5
168	10,547	6,577	33,586	34,586	16,744	17,842	6
233	7,741	6,997	22,276	30,331	13,809	17,522	7
6	9,318	4,018	10,638	14,064	6,023	8,041	8
4,841	24,143	18,159	61,396	86,080	26,995	59,085	9
99	10,444	7,700	21,373	33,413	11,571	20,842	10
4,525	6,892	3,916	11,680	18,554	8,845	9,709	11
296	12,675	7,681	43,509	56,985	17,984	38,901	12
123	3,126	2,952	9,445	12,320	9,186	3,684	13
2,766	8,913	4,423	17,458	26,858	9,961	16,907	14
608	8,843	3,368	10,288	14,390	7,910	6,680	15
227	11,491	12,704	39,133	51,765	14,108	37,657	16
2,402	5,261	5,797	19,061	24,568	3,220	10,346	17
4,043	8,674	14,060	41,964	50,654	11,681	38,973	18
458	10,133	10,813	38,739	49,141	14,603	34,538	19
543	23,862	17,852	70,186	95,088	26,954	68,134	20
1,247	5,326	4,827	16,643	22,038	6,625	15,413	21
44	745	1,207	4,925	5,768	2,784	2,984	22
268	785	1,902	5,610	7,489	3,938	3,551	23
..	119	678	2,280	2,467	1,149	1,318	24
43,806	2,32,603	2,09,876	7,45,032	10,03,965	3,25,833	6,80,312	
47,357	2,61,254	2,24,900	7,63,706	10,35,632	3,36,435	6,99,197	
210	16,320	13,959	53,441	71,011	80,000	41,011	25
262	6,642	5,956	20,118	27,067	8,937	18,130	26
2,991	6,223	4,947	18,514	25,186	12,207	12,979	27
175	6,789	7,955	25,675	32,780	12,989	19,791	28
800	8,192	16,708	45,104	53,222	16,998	36,224	29
808	3,440	7,380	24,079	30,348	19,071	17,273	30
4,746	49,606	55,750	1,86,831	2,40,509	96,212	1,44,097	
6,697	81,251	56,885	1,85,143	2,40,698	1,08,919	1,37,374	
50,532	3,02,214	2,66,626	9,29,863	12,46,274	4,57,745	7,98,529	
53,924	3,12,505	2,81,285	9,48,849	12,76,225	4,64,691	8,11,584	

*Statement of expenditure in each district of the United Provinces,
for the year 1923.*

Serial number.	Registration districts.	Fixed salaries of Registering officers.	Percentage paid to Registering officers.	Cost of establishment.			Other items of expenditure.	Total expenditure.
				Perma- nent.	Tempo- rary.	Total.		
1	2	3	4	5	6	7	8	9
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
	Office of the Inspector-General of Registration, United Provinces of Agra ...	10,110	...	7,135	408	7,543	8,227	25,880
1	Saharanpur ...	7,057	...	7,390	...	7,390	1,087	15,434
2	Meerut ...	15,692	...	11,808	172	11,476	1,447	28,614
3	Aligarh ...	17,493	...	9,953	80	10,033	1,075	29,201
4	Agra ...	13,992	...	7,816	...	7,816	1,622	23,430
5	Farrukhabad ...	4,378	...	4,025	...	4,025	641	9,044
6	Mainpuri ...	11,120	...	4,591	...	4,591	1,033	16,744
7	Bareilly ...	6,333	...	5,632	152	5,785	691	12,609
8	Pilibhit ...	3,568	...	2,758	416	3,174	281	6,023
9	Moradabad ...	15,138	...	13,347	20	10,367	1,890	26,995
10	Budun ...	6,584	...	4,410	...	4,410	597	11,571
11	Shahjahanpur ...	5,335	...	2,897	...	2,897	613	8,845
12	Cawnpore ...	9,642	...	6,921	35	6,956	1,886	17,984
13	Banda ...	2,678	...	5,191	...	5,191	269	9,136
14	Allahabad ...	5,040	...	4,880	...	4,880	81	9,961
15	Jhansi ...	4,141	...	2,962	51	3,013	656	7,810
16	Benares ...	6,108	...	7,221	261	7,482	518	14,108
17	Mirzapur ...	3,509	...	3,886	89	3,975	786	8,220
18	Jaunpur ...	5,631	...	4,549	388	5,437	613	11,681
19	Ghazipur ...	8,856	...	4,686	321	5,007	740	14,503
20	Gorakhpur ...	13,541	...	9,575	453	10,028	2,885	25,954
21	Azamgarh ...	5,790	...	3,222	81	3,303	642	9,625
22	Naini Tal ...	1,385	...	1,323	...	1,323	127	2,784
23	Almora ...	2,004	...	1,770	...	1,770	164	3,938
24	Garhwal ...	294	...	840	...	840	15	1,149
	Total, Province of Agra, 1923. ...	1,75,277	...	1,28,047	2,970	1,31,017	19,359	3,25,855
	Ditto 1922 ...	1,85,445	...	1,26,899	5,960	1,31,759	19,291	3,38,495
	ONDH.							
25	Lucknow ...	18,107	...	10,025	...	10,025	1,868	30,000
26	Hardoi ...	4,466	...	3,853	3	3,856	615	8,937
27	Etahpur ...	7,368	...	4,003	...	4,003	816	12,207
28	Gonda ...	7,756	...	4,276	...	4,276	967	12,999
29	Fyzabad ...	9,943	...	7,589	310	7,899	1,157	19,998
30	Bae Bareilly ...	7,578	...	4,554	41	4,595	900	13,071
	Total, Ondh, 1923 ..	55,233	...	34,300	354	34,654	6,323	96,212
	Ditto 1922 ...	59,405	...	34,715	275	34,990	6,924	1,08,319
	Grand Total, United Provinces, 1923 ...	24,0,622	...	1,69,482	5,732	1,75,214	33,909	4,47,745
	Ditto 1922 ...	2,54,510	...	1,68,904	6,192	1,74,396	35,765	4,64,691

FORM No. V.
Statement of principal operations other than registrations in Books I, III and IV.

Serial number.	Registration districts.	Wills removed to courts under section 269 of the Indian Succession Act copy kept in Book III under section 86.	Refusals to register (sections 71 and 76.)	Appeals against such refusals (section 73) and applications under section 73 regarding such refusals.			Presentations (section 68.)	Number of orders and certificates filed in book no. I under section 89 of the Registration Act.			
				Registration ordered.	Registration refused.	Registration ordered by civil court (section 77.)		Under Land Improvement Loans Act.	Under Agriculturists Loans Act.	Under order XXI, rule 94 of Civil Procedure, Act V of 1908.	Granted by revenue officers.
PROVINCE OF AGRA.											
1	Baharanpur	55	6	3	..	..	5	..	68	112
2	Meerut	35	5	..	..	..	..	1	365	458
3	Aligarh	43	5	2	..	..	83	25	415	386
4	Agra	23	4	..	..	..	..	3	172	76
5	Farrukhabad	12	..	3	..	..	..	2	146	84
6	Mainpuri	16	4	..	..	..	8	3	151	104
7	Bareilly	51	4	..	..	..	..	..	119	13
8	Pilibhit	13	2	..	..	..	..	..	82	9
9	Moradabad	64	12	3	1	..	1	..	259	107	
10	Budaun	11	2	..	..	..	..	..	177	124
11	Shahjahanpur	12	1	..	..	..	..	..	102	47
12	Cawnpore	25	4	1	..	..	..	1	158	25
13	Banda	11	..	..	..	..	..	10	57	2
14	Allahabad	8	2	..	..	..	15	2	49	32
15	Jhansi	7	..	..	..	..	3	1	14	31
16	Benares	26	5	..	..	..	..	..	187	144
17	Mirzapur	19	2	1	1	..	..	2	1	88
18	Jaunpur	44	8	2	..	..	..	..	9	64
19	Ghazipur	46	5	..	..	..	9	32	107	1
20	Gorakhpur	1	50	20	5	1	..	..	139	165
21	Assamgarh .. .. .	..	10	..	9	..	..	..	34	12
22	Naini Tal .. .. .	..	4	1	..	..	..	..	..	42
23	Almora .. .. .	..	7	..	..	..	..	..	..	22
24	Gathwal .. .. .	..	14	..	..	..	..	..	9	..
	Total, Province of Agra, 1923.	4	622	90	30	2	162	101	2,745	2,069	
	Ditto 1922 ..	2	706	115	21	11	258	156	3,096	1,848	
ONDH.											
25	Lucknow	84	11	2	56	82	169	82
26	Bardol	17	4	66	13	79	45
27	Sitapur	22	8	1	8	..	84	18
28	Gonda	43	7	4	1	78	80
29	Fyzabad	22	..	2	47	84	50	31
30	Res Bareilly	12	2	..	54	20
	Total Ondh. 1923	..	160	30	9	1	104	79	519	241	
	Ditto 1922 ..	1	191	35	9	1	215	125	545	256	
	Grand Total, United Provinces, 1923.	4	772	120	39	3	356	180	3,262	2,310	
	Ditto 1922 ..	3	897	145	30	12	473	280	3,586	2,104	

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NOTES
ON
VACCINATION

IN THE
UNITED PROVINCES OF AGRA AND OUDH
For the year ending 31st March, 1924.

BY
LIEUT.-COL. C. L. DUNN, D.P.H., I.M.S.,
*Director of Public Health and
Superintendent-General of Vaccination,
United Provinces.*

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**NOTES ON VACCINATION IN THE UNITED PROVINCES
FOR THE YEAR 1923-24.**

Brief notes on Vaccination in 1923-24. A detailed report for the triennium 1920-21, 1921-22 and 1922-23 having been submitted last year, this report deals briefly with vaccination in 1923-24 as compared with 1922-23.

Area and population. 2. The area of the province excluding the estates of Rampur, Benares and Tehri-Garhwal was 107,167 square miles and the population 45,375,787.

Constitution and strength of the department. (Statement II.) 3. I held charge of the office of the Superintendent-General of Vaccination throughout the year. The following officers were in charge of the several ranges during the year under review :—

I RANGE.

Major W. A. Mearns, I.M.S., from 1st April, 1923 to 12th February, 1924. Captain D. Clyde, I.M.S., from 13th February, 1924 to 31st March, 1924.

II RANGE.

Major T. D. Murison, I.M.S., from 1st April, 1923 to 25th November, 1923.

Major W. A. Mearns, I.M.S., from 26th November, 1923 to 27th February, 1924.

Captain D. Clyde, I.M.S., from 28th February, 1924 to 31st March, 1924.

III RANGE.

Dr. A. Sousa, D.P.H., throughout the year.

IV RANGE.

Dr. K. P. Mathur, D.P.H., throughout the year.

The number of Assistant Superintendents of Vaccination (49) remained unaltered, but that of vaccinators decreased from 909 in 1922-23 to 905 during the year under report.

Expenditure on vaccination. (Statement II.) 4. There was a decrease of Rs. 242 in the total expenditure in 1923-24 including the charges on account of the Assistant Directors of Public Health and their establishments and an increase of Rs. 650 excluding these charges as compared with 1922-23 the total amounts during the two years being Rs. 4,62,538 and Rs. 4,62,830 and Rs. 3,87,344 and Rs. 3,86,694 respectively. The decrease and increase mentioned, above being slight call for no comments.

Average cost of each successful case of vaccination. (Statement II.) 5. The average cost of each successful case of vaccination in these provinces during the year under report was the same as in the preceding year, viz, annas 4 and pies 10. The following table shows the average cost of each successful case of vaccination in these

provinces during the year under report as compared with other provinces :—

Province.		Cost of each successful case of vaccination during 1923-24.
		Rs. a. p.
United Provinces	.. .. .	0 4 10
Assam	.. .. .	0 4 5
Bengal	.. .. .	"
Punjab	.. .. .	"
Burma	.. .. .	0 9 8
Bihar and Orissa	.. .. .	0 2 4
Delhi Province	.. .. .	0 5 0
Central Provinces	.. .. .	"
North-West Frontier Province	.. .. .	0 2 9
Madras	.. .. .	"
Bombay	.. .. .	"

*Information not received.

6. During the year under report 1,266,930 persons were vaccinated by the special (district) staff and 513 by the dispensary staff, or a total of 1,267,442, as compared with 1,224,252 in the preceding year, indicating an increase of 43,190. The number of vaccination operations performed in 1923-24 also exhibited an increase of 71,739 as compared with 1922-23, the actual numbers for the two years being 1,310,148 (1,251,387 primary and 58,761 re-vaccination) and 1,238,409 (1,175,212 primary and 63,197 re-vaccination) respectively. The number of secondary operations rose from 14,157 in 1922-23 to 42,706 in 1923-24. The number and percentage of successful vaccinations in which the results were known during 1923-24 amounted to 1,127,602 and 91.53 in the case of primary vaccinations and to 33,220 and 63.70 in the case of re-vaccinations as against 1,119,849, 96.44, 40,027 and 69.89 respectively in 1922-23. Each vaccinator vaccinated on an average 1,400 persons during the year under review as against 1,346 in the preceding year. The district staff successfully vaccinated 25.57 persons per mille of the population as compared with 25.55 in 1922-23.

It will be seen that there was an increase under all heads during the year under report except under the heads "number of re-vaccinations" and "percentage of successful cases in which the results were known," both in the case of primary vaccinations and re-vaccinations.

7. Thirty districts out of forty-eight showed an increase in the number of successful primary operations performed in 1923-24 over that of 1922-23. Of these Moradabad heads the list with an increase of 5,891, followed by Bahraich with 4,799, Alora with 3,561, Fyzabad with 2,209, Sitapur with 1,995, Kheri with 1,863 and Bijnor with 1,602. Of the 18 districts showing a decline the most conspicuous are Rae Bareilly with a falling off of 5,004, Jaunpur with 4,373, Bara Banki with 3,782, Budaun with 2,679, Allahabad with 2,148, Banda with 2,025 and Bulandshahr with 1,835.

The causes of the decrease in these districts were :—

Rae Bareli.—A considerable reduction in the number of chowkidars, the deputation of four permanent vaccinators to Adh Kumbh fair, Allahabad, and the effects of the disturbance of 1921, which have not yet been shaken off by the public.

Jaunpur.—Climatic condition, epidemic of cholera and deputation of four permanent vaccinators to Adh Kumbh fair, Allahabad, and appointment of inexperienced men in their stead.

Bara Banki.—Slackness on the part of some vaccinators who have been punished and deputation of three permanent vaccinators to Adh Kumbh fair, Allahabad.

Budaun.—Slackness on the part of some vaccinators who have been suitably dealt with.

Allahabad.—Bad supply of lymph in October.

Banda.—Opposition of the public to vaccination.

Bulandshahr.—Prevalence of plague in an epidemic form.

8. The number of persons successfully vaccinated per 1,000 of the population in 1923-24 was 25·57 against 25·56 in 1922-23. Among the districts showing the best protection afforded, Alnora which had been second for the last three years headed the list with a ratio of 41·53. Garhwal which had been first for the last several years stood second with a ratio of 37·91. Then in order came Hamirpur, Jalaun, Saharanpur, Pilibhit and Muzaffarnagar giving a ratio of 35·11, 34·09, 33·98, 33·63 and 33·56 respectively. The districts showing the least protection were Rae Bareli (14·74), Bara Banki (16·97), Ghazipur (17·35), Azamgarh (18·17) and Farrukhabad (18·95).

9. In 1923-24 the percentages of successful vaccination operations in proportion to births show a general decrease as compared with the preceding year, the ratios for the two years being 49·57 and 54·16 in the case of children under one year of age, 17·43 and 20·11 in the case of those between one and under six years of age, and 68·95 and 76·71 for all ages respectively.

An analysis of the figures of the different ranges shows that 56·17 children under one year of age were successfully vaccinated per 100 births in the first range during the year under review as against 61·21 in the preceding year. These figures for the second, third and fourth ranges were 41·15 against 44·91, 55·68 against 61·28 and 44·63 against 48·25 respectively. This year the first range shows the best protection in comparison to the other ranges.

10. Seven hundred and forty-seven deaths from small-pox were recorded in 1923 against 242 in 1922. The death-rates for the two years were ·02 and ·01 respectively, and the average for the past five years ·09.

11. A diagram illustrating the death-rate from small-pox in each district during 1923 and the proportion of population reported to have been protected by vaccination is annexed.

12. In 1923-24, 512 vaccination operations (215 primary and 297 re-vaccination) were performed by medical subordinates at dispensaries as against 420 in 1922-23.
(Statement III.)

13. There was an increase in the vaccination work performed in municipalities during the year under review as compared with the preceding year, the total number of persons vaccinated being 107,045 and 101,815 and that of vaccination operations 112,863 (100,896 primary and 11,967 re-vaccination) and 103,646 (91,751 primary and 11,895 re-vaccination) respectively. The number of successful primary vaccinations and that of successful re-vaccinations amounted to 87,493 and 4,786 in 1923-24 as against 85,729 and 6,538 in 1922-23 respectively. The ratio of persons successfully vaccinated per mille of the population in 1923-24 was practically the same as in 1922-23, the figures for the two years being 31.73 and 31.72 respectively. Among the municipalities showing a large number of persons successfully vaccinated per mille of the population Etah and Gonda which stood third and fourth last year are first and second this year with a ratio of 68.25 and 56.47 respectively. Then came Mussoorie with 51.44, Unao with 48.08 and Konch with 43.44. The municipalities in which the least protection has been noticed are Mainpuri (12.75), Rae Bareli (17.92), Kanauj (19.61), Azamgarh (20.22) and Farrukhabad-cum-Fatehgarh (20.59). Farrukhabad-cum-Fatehgarh and Rae Bareli show an improvement over last year, while Kanauj is gone worse this year. In Mainpuri the decrease is ascribed by the District Superintendent of Vaccination to a smaller number of re-vaccinations being performed this year. In Azamgarh it is attributed to the supply of lymph of poor quality. Appendix B to these notes will show the number of successful vaccinations performed on children under the age of one year in different municipalities during the year under review.

14. In 1923-24, 10,938 persons were vaccinated and 11,162 operations (5,661 primary and 5,501 re-vaccination) performed by the regular vaccination staff in cantonments of these provinces against 8,840 and 9,017 (5,352 primary and 3,665 re-vaccination) respectively in the preceding year. The number of successful primary vaccinations and successful re-vaccinations during the two years were 4,928 and 2,719 and 4,884 and 2,485 respectively. The number of persons successfully vaccinated per 1,000 of population was 38.23 in 1923-24 as against 36.84 in 1922-23. An examination of the above figures will show an increase under all heads.

In 1923 it was brought to my notice that the returns of vaccination operations performed by military medical officers in cantonments were not received by District Superintendents of Vaccination and were not included in the district returns. I accordingly addressed the Deputy Director of Medical Services, Eastern Command, on the subject who did not agree to furnish the information on the form in use in this department, but issued instructions to the military officers concerned to send half-yearly vaccination returns to my office on the form prescribed by the Army department. These returns show that military medical officers performed 16,705 vaccination operations (531 primary and 16,174 re-vaccination)

during the year under report. Of these the number of successful primary vaccinations was 336 and that of successful re-vaccinations 5,679. As the returns received from military authorities do not contain all the information required for our standard statements, the statistics contained therein cannot be included in any of the statements appended to these notes.

15. The number of persons vaccinated and that of vaccination operations performed in the notified areas in 1923-24 were 11,841 and 12,209 respectively, as compared with 11,771 and 11,922 respectively in 1922-23. Of the 12,209 operations performed 11,776 were primary and 433 re-vaccinations, as compared with 11,388 and 534 respectively in the preceding year. The total number of successful primary vaccinations amounted to 10,544 and that of successful re-vaccinations to 189 in 1923-24 as against 10,826 and 304 respectively in the previous year. The number of persons successfully vaccinated per 1,000 of the population was 31·62 in 1923-24 as against 32·46 in 1922-23. Of the well protected notified areas, Shahganj (Jaunpur), Mainpuri Civil Station and Bhimtal (Naini Tal) retained their last year's position as first, second and third with a ratio of 62·11, 56·50 and 49·97 respectively. Then came Bhinga (Bahraich) with 49·75 and Badshahpur (Jaunpur) with 46·92. Among the notified areas showing the least protection, the most conspicuous are Shikohabad in the Mainpuri district (10·99), Auraiya in the Etawah district (12·36), Bhowali in the Naini Tal district (19·10), Mubarakpur in the Azamgarh district (19·12) and Deoria in the Gorakhpur district (19·90). Auraiya went three steps down this year as compared with the previous year. The decrease in Auraiya is due to an outbreak of plague. In Bhowali it is assigned to the fact that a few children were left unvaccinated as they were not keeping good health. In Shikohabad, Mubarakpur and Deoria the decrease is ascribed to the supply of lymph of low potency in the earlier part of the season.

16. The Vaccination Act is in force in all cantonments and municipalities and in 46 out of 48 notified areas. Steps are being taken to extend the Act to the notified areas of Rikhikesh (Dehra Dun) and Ganj Dundwara (Etah). The proposal to extend the Vaccination Act to rural areas has been shelved by Government for the present.

17. (a) *By Assistant Directors of Public Health and District Superintendents of Vaccination.*—There has been a decrease of 30,463 in the inspection work done by the Assistant Directors of Public Health and District Superintendents of Vaccination during the year under report as compared with the preceding year, the actual number of cases inspected during the two years being 145,559 (145,156 primary and 403 re-vaccination) and 176,022 (174,655 primary and 1,367 re-vaccination) respectively. The percentage of inspections to total number vaccinated in 1923-24 was 12·01 in the case of primary and ·69 in the case of re-vaccination as against 15·04 and 2·17 in 1922-23 respectively. The reasons for the decrease are as follows:—

- (1) Deputation of Dr. A. Sousa, Assistant Director of Public Health, III Range, to supervise the sanitary arrangements

of the last Adh Kumbh fair, Allahabad, from November to February;

- (2) Transfer of Major T. D. Murison, I.M.S., Assistant Director of Public Health, II Range, to Assam as Director of Public Health in November, 1923, and the post remaining vacant for about three months; and
- (3) Curtailment of tours of District Superintendents of Vaccination.

The largest number of inspections was done in the districts of Gorakhpur (10,658), Azamgarh (8,868), Sultanpur (7,212), Bulandshahr (7,169), Jaunpur (6,572) and Bijnor (6,199). Of the districts in which the smallest number of inspections was performed the most conspicuous were Lucknow (123), Almora (143), Garhwal (238), Banda (897) and Naini Tal (942). All these districts have shown a further decline in the number of inspections as compared with the previous year. In the case of Lucknow, however, the District Superintendent of Vaccination is not required to make vaccination tours.

(b) *By Assistant Superintendents of Vaccination and other inspecting officers.*—There was a decrease of 7,382 in the number of inspections of primary cases done by these officials in 1923-24, but an increase of 4,270 in respect of re-vaccinations, or a net decrease of 3,112 as compared with 1922-23. The district of Gorakhpur, where there are two Assistant Superintendents of Vaccination, stood first as usual on the list of districts showing the largest number of inspections (35,779) performed during the year under report and was followed by Jaunpur with 16,008. Then came in order Basti, Sultanpur, Bahraich and Moradabad with 15,963, 15,171, 15,048 and 14,700 respectively. Among the districts which were backward in respect of the number of inspections performed the most conspicuous were Dehra Dun (4,130), Garhwal (5,089), Naini Tal (5,116), Mainpuri (6,374), Rae Bareilly (8,828) and Jalaun (7,689). Of these Dehra Dun showed an improvement over last year. Considering the percentages of inspections done by these officials to total number vaccinated during the year under report, there is a decrease in respect of primary vaccinations, but an increase in that of re-vaccinations as compared with the preceding year, the actual ratios being 43.72 and 37.00 for 1923-24 and 46.14 and 27.45 for 1922-23 respectively. The percentage of cases found successful to the total number inspected during the year under report was 90.33 in the case of primary vaccinations and 48.14 in that of re-vaccinations, as against 95.46 and 47.31 respectively in the preceding year.

The District Superintendents of Vaccination concerned will be asked to warn the Assistant Superintendents of Vaccination to devote more attention to this part of their duty.

18. The supervising charge of the dépôt was held by me throughout the year under report. The contract for the supply of calves was given to one Abdul Rahim of Bareilly (district Naini Tal) at Rs. 12 for each calf and Rs. 3-8-0 were paid by him for each animal returned. Although the calves were not supplied on due dates, no difficulty was experienced in the manufacture of lymph, and on the whole the supply was satisfactory.

The number of calves purchased or obtained on fees during the year 1923-24 was 342 (64 cow and 278 buffalo) as compared with 332 (85 cow and 247 buffalo) in 1922-23. The disposal of 342 calves is given below :—

	Cow calves.	Buffalo calves.
Successfully vaccinated	62	266
Failed	Nil.	7
Died before vaccination	1	2
Died after vaccination	Nil.	3
Retained in the dépôt unvaccinated and transferred to live-stock.	1	Nil.
Total	64	278
	342	

A few cases of foot and mouth disease were found amongst calves brought in by the calf contractor, but the disease was soon stamped out by segregation and the usual treatment. Pleuro-pneumonia broke out as usual amongst the buffalo calves and accounted for 39 deaths. Seven animals also died of natural causes. The total number of deaths in 1923-24 thus amounted to 46 as compared with 138 in the preceding year. The decrease was due to the fact that no vaccination was carried on during the latter half of December and the whole of January when pleuro-pneumonia was especially prevalent.

The total quantity of crude lymph obtained during the year under report was 15,167.0 grammes from 328 successfully vaccinated calves giving an average of 46.2 as against 15,097.5 grammes from 298 successful calves and an average of 50.7 in 1922-23. The average yield of crude lymph per cow and buffalo calf in 1923-24 was 18.4 and 52.7 respectively against 2.86 and 58.8 grammes in 1922-23. From this crude lymph 80,314 grammes of glycerinated lymph and 1,643 grammes of glycerine paste were manufactured during the year as against 115,114.3 grammes of glycerinated lymph and 981.2 grammes of glycerine paste in the preceding year. Of the 80,314 grammes manufactured this year 26,630 were lymph of a strength of 1 in 2, the rest being of a strength of 1 in 6. Lymph of the strength of 1 in 2 would be brought to the strength of 1 in 5 before issue, thus providing 120,259 grammes in all. This procedure will continue in future as there is reason to believe that the potency of lymph will be higher than it was when the lymph was diluted to 1 in 6 immediately after manufacture.

The table appended hereunder exhibits the annual output of lymph, the number of areas in which arm-to-arm vaccination has been replaced.

by calf lymph vaccination and the income and expenditure of the dépôt:—

Year.	Quantity of lymph issued.				Arm-to-arm vaccination replaced by calf lymph vaccination in—			Income.	Expenditure.
	Glycerinated lymph.		Glycerine paste.	Lacoline paste.	Districts.	Municipalities.	Notified areas.		
	Tubes.	In bulk.							
			Grammes. Gra.	Grammes. Gra.	Grammes. Gra.	Rs.	Rs.		
1904-5 ..	21,049	Nil.	Nil.	79 0	..	5	..	106	8,900
1905-6 ..	74,800	98 0	Nil.	120 0	..	14	..	2,057	7,789
1906-7 ..	113,945	205 0	1,367 0	19 0	..	23	..	8,627	5,741
1907-8 ..	198,324	Nil.	668 13	161 0	..	53	5	6,118	6,717
1908-9 ..	243,722	8,806 3	749 0	4 0	4	79	19	8,572	12,578
1909-10 ..	249,974	9,147 0	414 0	4 0	8	87	82	8,527	10,624
1910-11 ..	358,939	9,892 0	45 0	6 0	18	87	87	14,211	12,097
1911-12 ..	193,256	41,460 12	44 0	Nil.	22	87	45	18,780	18,090
1912-13 ..	180,445	58,427 13	83 3	Nil.	85	87	43	24,019	14,894
1913-14 ..	193,932	70,296 10	79 7	Nil.	87	86	46	28,867	17,247
1914-15 ..	295,423	94,547 13	392 0	8 7	41	84	43	59,174	20,703
1915-16 ..	150,347	33,110 7	63 0	Nil.	47	84	47	30,789	31,223
1916-17 ..	169,880	82,960 0	36 7	Nil.	47	84	45	31,036	31,343
1917-18 ..	172,463	86,658 12	Nil.	Nil.	43	83	44	32,631	31,910
1918-19 ..	185,699	91,658 0	84 0	Nil.	43	83	45	32,336	35,297
1919-20 ..	173,317	94,354 10	6 11	Nil.	43	84	44	35,490	31,647
1920-21 ..	187,633	89,609 4	14 0	4 0	43	84	43	37,144	39,217
1921-22 ..	135,448	87,098 12	6 0	Nil.	43	85	41	39,169	38,259
1922-23 ..	331,663	69,436 12	5 0	Nil.	43	84	39	41,354	35,133
1923-24 ..	89,639	86,993 12	11 0	Nil.	43	84	40	37,967	36,014

86,993.75 grammes in metal collapsible tubes, 89,639 capillary tubes and 11 grammes of glycerine paste, sufficient to vaccinate 2,264,758 persons, were issued during 1923-24 as against 69,436.75 grammes in metal tubes, 331,663 capillary tubes and 5 grammes glycerine paste in 1922-23. Of the total quantity of lymph issued 12 capillary tubes and 125.75 grammes in bulk costing Rs.72 were issued free during the year under report as against 153 capillary tubes and 75.25 grammes in bulk to the value of Rs. 55 in 1922-23.

Eighty-four municipalities and 40 notified areas were supplied with lymph on payment in 1923-24. The municipality of Mainpuri and the notified areas of Shikohabad, Mainpuri Civil Station, Aonla, Auriya, Moghal Sarai, Chunar Settlement, Badshahpur and Madhoganj did not take lymph from this dépôt during 1923-24. Lymph costing Rs. 19,274 was sold to district boards, Rs. 6,244 to municipalities, Rs. 3,536 to Native States, Rs. 1,631 to private persons and by value payable post, Rs. 959 to notified areas and Rs. 572 to cantonments as against Rs. 22,126, Rs. 5,868, Rs. 4,947, Rs. 882, Rs. 1,043 and Rs. 483 in 1922-23. Lymph worth Rs. 20,067 was supplied to the Military department during the period from 1913-14 to 1923-24, while the total amount received from them by the contract system for the same period amounted to Rs. 19,300 resulting in a net loss of Rs. 767.

The question of revision of the contract amount is under consideration.

The sale-proceeds of lymph from the dépôt in 1923-24 amounted to Rs. 35,216 and those of miscellaneous articles to Rs. 2,751, or a total of Rs. 37,967, as against Rs. 41,354 (Rs. 38,319 from sale of lymph and Rs. 3,005 from that of miscellaneous articles) in the preceding year.

The decrease in the receipts from the sale of lymph is due to the issue of capillary tubes during the year being less than in the preceding year when a larger amount of capillary tubes had to be issued owing to the late receipt of collapsible tubes.

The total expenditure incurred during the year under report was Rs. 36,602 as against Rs. 35,731 in the year before—indicating an increase of Rs. 871. This increase is due to the fact that a sum of Rs. 1,401 was expended on the construction of quarters for two malis and Rs. 210 were paid on account of glass tubes purchased through Assistant Director of Public Health, Lahore, this year owing to the delay in the arrival of tubes from England. Rupees 250 were also paid to the municipal board of Naini Tal for the supply of water as they did not agree to supply the same free of charge. Comparing the receipts with expenditure there was a credit balance of Rs. 1,364 in addition to lymph worth Rs. 44,883 in stock for issue next year.

During the year under report 1,309,636 operations (1,251,172 primary and 58,464 re-vaccination) were performed with calf lymph as against 1,236,903 operations (1,174,008 primary and 62,895 re-vaccination) in the preceding year.

The results of vaccination performed during the years 1923-24 and 1922-23 are exhibited in the following table:—

	Primary vaccinations.					
	Successful.		Unsuccessful.		Percentage.	
	1923-24.	1922-23.	1923-24.	1922-23.	1923-24.	1922-23.
April to September ..	29,087	27,154	11,867	2,418	66.98	91.82
October to March ..	625,428	522,383	63,481	23,854	90.13	95.64
Total ..	648,468	550,937	79,848	26,272	89.04	95.45
	Re-vaccinations.					
	Successful.		Unsuccessful.		Percentage.	
	1923-24.	1922-23.	1923-24.	1922-23.	1923-24.	1922-23.
April to September ..	8,108	8,044	2,429	2,346	47.50	57.54
October to March ..	17,509	16,318	10,078	6,845	68.47	70.45
Total ..	20,612	19,862	13,507	9,091	60.41	68.03

The percentage of successful vaccinations dropped from 95.45 in 1922-23 to 89.04 in 1923-24. The decrease was due to the deterioration

of a quantity of lymph which led to the destruction of all the lymph manufactured at that time.

Lymph issued towards the end of the year was of good quality and high potency.

The cold storage plant worked very satisfactorily during the year under report. 137,230·3 grammes of glycerinated lymph and 345·0 grammes of glycerine paste were kept in the cold storage last year for issue during 1923-24, out of which 31,687 grammes of lymph manufactured during the previous year were destroyed as lymph issued from this stock had been giving doubtful results. The remainder was issued during the hot weather and the first four months of the vaccination season.

88,266·0 grammes of glycerinated lymph and 375·0 grammes of glycerine paste have been manufactured and placed in the cold storage for issue during 1924-25.

The lighting plant has worked satisfactorily during the year. The new plates (positive and negative) which were purchased during 1922-23 were fitted during the hot weather.

The post of the electrician was made superior and permanent but non-pensionable.

The staff of the dépôt carried out their duties satisfactorily. Captain E. H. Morbey, Superintendent of the dépôt, has again kept the dépôt in excellent order and effected economies in many directions. I am glad that his valuable services have been recognised by Government by granting him an increase in pay.

19. District annual vaccination returns were again received late from several districts and had to be returned for correction. The attention of the District Superintendents of Vaccination concerned will be drawn to this.

C. L. DUNN, D.P.H.,
LIEUT.-COL., I.M.S.,
*Director of Public Health and Superintendent-General of Vaccination,
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NAINI TAL:
The 12th June, 1924.

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NAINI TAL :

The 12th June, 1924.

STATISTICAL STATEMENTS

AND

APPENDICES.

STATEMENT NO. I.—Showing the particulars of vaccination

Number.	Ranges and districts.	Population according to census of 1921.	Average population per square mile.	Average number of vaccinators employed throughout the year.	Total number of persons vaccinated.			Average number of persons vaccinated by each vaccinator.	Primary vaccination.			
					Male.	Female.	Total.		Total.	Successful.		
										Under one year.	One and under six years.	
1	2	3	4	5	6	7	8	9	10			
1	First Range.	Dehra Dun ..	212,243	178	7	5,200	8,545	8,745	1,249-23	4,854	2,579	1,823
2		Saharanpur ..	937,471	439	13	18,226	15,715	84,041	1,724-50	32,869	23,323	1,974
3		Muzaffarnagar ..	794,265	475	14	14,147	13,385	27,532	1,966-57	27,855	24,245	2,316
4		Meerut ..	1,489,074	639	29	23,712	22,034	45,746	1,577-45	48,104	84,701	5,717
5		Bulandshahr ..	1,066,519	559	20	19,330	17,537	86,837	1,844-85	37,591	31,251	2,441
6		Aligarh ..	1,061,745	546	21	16,767	16,635	33,402	1,590-60	33,900	27,911	2,140
7		Muttra ..	619,138	427	15	8,836	8,654	17,490	1,166-00	18,428	14,041	1,783
8		Agra ..	924,155	498	22	16,180	14,631	30,811	1,400-50	31,681	20,233	4,237
9		Mainpuri ..	748,027	447	18	8,305	8,492	17,237	1,330-54	17,583	13,100	1,816
10		Etah ..	829,760	480	17	13,366	11,834	25,150	1,479-41	24,594	17,501	4,762
11		Bareilly ..	1,013,875	642	19	15,115	13,790	23,905	1,521-81	30,565	18,692	6,652
12		Bijnor ..	740,182	394	17	11,427	10,923	22,350	1,314-70	23,035	18,939	1,740
13		Budaun ..	975,347	485	20	13,617	12,739	26,356	1,317-80	26,528	20,869	2,066
14		Moradabad ..	1,193,633	524	23	18,938	18,723	37,716	1,630-38	38,741	32,083	2,788
15		Shahjahanpur ..	839,115	436	18	12,302	11,503	24,208	1,344-89	26,479	16,990	3,318
16		Pilibhit ..	431,601	320	9	7,925	7,679	15,604	1,733-77	16,723	11,524	2,554
17		Garkwal ..	485,186	36	13	12,449	8,793	21,242	1,634-00	11,303	5,175	5,495
	Total ..	14,376,356	418	206	236,422	217,060	453,482	1,587-23	450,473	338,243	52,627	
18	Second Range.	Naini Tal ..	276,875	102	12	4,924	8,739	8,713	726-08	7,651	4,817	1,720
19		Almora ..	539,338	59	19	15,913	12,347	29,760	1,513-63	19,242	9,813	7,055
20		Lucknow ..	724,344	749	15	10,465	9,111	19,576	1,298-23	17,410	11,402	3,961
21		Unao ..	319,128	468	15	10,339	9,590	19,988	1,325-53	20,565	11,271	5,003
22		Rae Bareilly ..	936,403	537	16	7,713	6,896	14,604	912-75	15,084	4,987	7,555
23		Sitapur ..	1,038,431	484	20	15,966	15,616	31,612	1,530-60	31,936	23,603	6,315
24		Hardoi ..	1,384,410	436	20	13,447	13,356	26,813	1,340-66	27,067	21,764	4,137
25		Kheri ..	913,475	307	26	12,929	11,988	24,917	958-25	24,792	16,612	6,648
26		Fyzabad ..	1,171,930	677	21	13,433	11,663	25,101	1,195-23	25,500	12,209	7,848
27		Gonda ..	1,473,038	524	25	14,770	14,485	29,255	1,170-20	28,748	15,379	11,675
28		Bahraich ..	1,065,377	403	20	17,900	16,032	33,992	1,639-60	33,546	21,141	10,124
29		Sultanpur ..	1,003,912	586	13	17,033	16,796	33,820	1,879-39	33,887	11,939	16,929
30		Partabgarh ..	855,130	533	15	9,892	7,639	17,431	1,165-40	17,518	5,695	9,378
31	Bara Banki ..	1,029,954	585	19	10,401	9,631	19,932	1,040-05	20,344	9,906	6,700	
	Total ..	12,373,855	403	261	175,114	159,354	334,468	1,281-49	323,590	181,733	105,043	
32	Third Range.	Farrukhabad ..	856,633	509	16	10,226	7,904	18,220	1,138-75	17,134	12,945	1,975
33		Etawah ..	723,532	424	13	10,915	9,551	20,466	1,574-81	20,322	14,971	1,995
34		Cawnpore ..	1,143,664	484	23	18,722	16,473	35,195	1,530-22	32,947	22,318	6,998
35		Fatehpur ..	652,392	397	12	8,755	7,773	16,563	1,330-25	18,143	12,293	2,307
36		Allahabad ..	1,491,445	491	28	17,037	15,945	32,932	1,177-93	31,421	15,730	11,152
37		Jhansi ..	606,439	167	26	11,372	10,320	21,701	834-65	21,962	18,209	1,251
38		Jalaun ..	405,439	262	14	7,633	6,766	14,449	1,032-07	14,251	11,414	1,371
39		Hamirpur ..	440,245	192	13	8,271	7,759	16,030	1,223-07	15,460	13,109	1,428
40	Banda ..	618,114	207	18	8,697	7,709	16,406	911-45	15,694	11,954	3,107	
	Total ..	6,830,963	332	163	101,708	90,304	182,012	1,177-59	187,544	133,543	82,110	

in the United Provinces during the year 1923-24.

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Total of all ages.	Re-vaccination.					Percentage of successful cases in which the results were known.		Persons successfully vaccinated for 1,000 of population.	Percentage of unknown cases to total cases.		Average annual number of persons successfully vaccinated during previous five years.		Average annual number of deaths from small-pox during previous five years.	
	Unknown.	Successful.		Unknown.	Primary.	Re-vaccination.	Primary.		Re-vaccination.	Number.	Ratio per 1,000.	Number.	Ratio per 1,000.	
		Total.	14											
11	12	13	14	15	16	17	18	19	20	21	22	23	24	
4,005	242	4,079	1,605	975	86.84	61.71	26.43	4.98	33.90	5,255.00	25.29	11	.05	
80,497	221	2,051	1,359	181	93.41	70.78	33.98	.07	6.39	31,134.00	33.20	59	.06	
26,697	98	67	56	1	95.83	34.85	33.56	.85	1.43	25,224.40	31.50	12	.01	
40,609	618	617	314	82	85.31	40.00	27.16	1.28	12.29	44,827.00	23.86	56	.04	
33,781	322	734	295	24	90.64	41.54	31.95	.86	3.27	36,426.00	33.15	81	.03	
30,131	481	1,247	555	65	91.31	43.95	28.90	1.44	5.21	30,090.00	36.77	86	.03	
15,837	133	123	46	..	86.59	37.40	25.65	.75	..	14,395.80	23.22	22	.03	
24,581	846	2,011	148	161	79.72	7.78	26.75	2.07	3.00	22,350.80	33.25	108	.10	
15,017	298	283	84	38	86.88	43.08	20.19	1.09	16.31	17,927.80	23.03	32	.04	
22,669	175	1,000	571	23	91.15	53.44	27.89	.70	2.30	21,966.80	35.69	74	.06	
24,510	1,662	733	370	175	84.51	44.41	24.44	5.11	32.35	26,427.80	24.93	37	.03	
30,384	459	161	71	17	92.41	49.30	28.24	2.19	10.55	20,579.60	26.39	25	.03	
33,060	258	457	200	9	87.71	41.34	23.85	.81	1.84	25,977.80	35.41	216	.21	
24,240	312	394	119	4	90.92	30.51	29.25	.60	1.01	30,339.80	35.05	116	.09	
20,284	608	292	93	19	80.78	34.06	25.12	1.90	6.51	20,329.40	23.06	70	.07	
14,708	592	320	207	60	88.70	79.61	32.63	3.54	18.75	15,373.60	34.12	43	.10	
10,728	98	10,033	7,668	845	96.60	32.91	37.91	.87	3.38	24,278.00	50.37	6	.01	
332,388	7,238	24,692	18,556	2,629	88.64	61.44	23.27	1.60	10.65	415,737.20	27.33	1,005	.07	
6,706	294	1,498	485	187	91.15	37.75	26.00	3.84	12.43	9,089.00	29.65	11	.03	
17,409	810	9,943	4,618	1,380	94.45	56.92	41.58	4.21	13.40	25,137.00	47.66	15	.03	
16,510	327	2,809	1,211	119	90.79	45.02	23.08	1.88	4.24	18,928.20	35.29	118	.15	
17,011	231	476	378	12	86.61	31.46	21.96	1.12	2.52	20,659.20	33.63	35	.04	
13,799	208	23	8	3	52.76	40.00	14.74	1.38	18.04	20,354.00	21.13	55	.05	
30,886	126	85	23	3	96.47	71.87	23.19	.39	3.57	20,542.60	26.40	16	.01	
26,107	202	14	10	..	97.18	71.43	24.08	.75	..	27,347.80	25.26	86	.06	
23,921	105	256	218	9	96.90	33.26	26.42	.42	3.51	23,004.00	24.45	16	.02	
22,703	411	469	321	13	90.51	39.00	19.56	1.81	3.84	24,739.60	21.80	102	.09	
23,025	159	658	628	1	98.16	90.75	19.45	.69	-14	30,070.80	20.93	47	.03	
32,839	243	519	464	35	98.76	95.87	31.31	.73	6.74	28,198.80	23.73	170	.16	
33,036	186	19	10	7	98.17	33.33	33.97	.66	36.34	31,352.80	30.90	36	.03	
16,335	200	193	175	10	98.33	95.69	19.69	1.15	5.18	13,045.20	20.46	96	.11	
17,461	877	57	17	19	87.45	44.74	16.97	4.21	33.33	23,630.00	22.24	26	.02	
302,758	4,419	17,004	8,476	1,252	94.86	57.46	23.99	1.36	13.26	33,1643.60	25.06	323	.06	
15,017	304	1,890	1,218	38	89.23	65.77	13.95	1.77	2.01	23,334.00	28.50	69	.07	
17,233	219	1,124	617	50	34.31	57.45	24.33	1.07	445	17,000.00	33.48	37	.05	
30,724	235	2,951	1,384	8	98.52	37.03	23.43	.71	2.30	35,019.20	30.19	30	.03	
15,226	268	470	247	10	35.13	75.43	23.37	1.43	2.12	15,431.20	33.13	3	..	
27,763	342	1,736	957	252	39.31	62.33	20.44	1.09	14.11	29,446.20	30.42	182	.13	
19,770	275	530	303	.92	91.15	61.19	33.04	1.25	17.86	23,340.40	35.23	62	.03	
13,136	173	763	694	28	93.34	32.43	34.09	1.35	3.65	13,799.20	33.33	21	.05	
14,636	131	895	771	21	95.80	34.63	35.11	.85	2.37	15,375.40	23.77	20	.04	
15,261	162	905	873	15	96.26	38.09	26.31	1.08	1.66	15,551.20	25.39	37	.06	
163,896	2,114	11,359	7,669	577	91.03	71.13	25.72	1.13	5.08	1,39,473.40	26.92	323	.12	

STATEMENT NO. I.—Showing the particulars of vaccination

Number.	Ranges and districts.	Population according to census of 1921.	Average population per square mile.	Average number of vaccinators employed throughout the year.	Total number of persons vaccinated.			Average number of persons vaccinated by each vaccinator.	Primary vaccination.		
									Total.	Successful.	
										Under one year.	One and under six years.
1	2	3	4	5	6			7	8	9	10
					Male.	Female.	Total.				
41	Fourth Range. Benares .. Mirzapur .. Jaunpur .. Ghazipur .. Ballia .. Corakhpur .. Basti .. Azamgarh ..	901,812	894	14	11,486	10,853	22,339	1592.07	22,037	12,496	8,249
42		724,183	188	22	11,522	11,204	22,726	1083.00	22,776	14,023	7,594
43		1,155,105	74	19	17,052	16,287	33,309	1758.10	32,945	22,198	8,054
44		832,239	598	13	7,626	7,165	14,791	1137.77	14,823	7,893	5,920
45		831,003	683	14	12,243	10,504	22,747	1624.78	22,170	12,509	7,341
46		3,266,830	721	50	43,791	42,715	86,506	1780.12	90,871	41,931	29,511
47		1,925,228	637	30	28,698	26,827	55,525	1850.33	58,935	33,574	15,574
48		1,523,637	691	24	15,638	13,392	29,075	1211.46	30,008	12,441	12,903
	Total ..	11,164,613	559	186	143,051	138,917	283,968	1542.84	283,565	157,065	95,186
	TOTAL OF ALL RANGES	45,875,787	423	905	661,205	605,635	1,266,830	1,399.92	1,251,172	810,539	284,980
	TOTAL OF DISPENSARY STAFF.	..	..	..	312	200	512	28.44	215	62	88
	TOTAL OF OTHER AGENCIES (PRIVATE MEDICAL PRACTITIONERS).	..	..	..	..	..	..	..	..	..	..
	GRAND TOTAL ..	45,875,787	423	905	661,607	605,835	1,267,442	1,399.92	1,251,387	810,651	285,068

NOTE (1)—Column 13 "re-vaccination" includes the vaccination of all persons who bear marks of previous vaccination or of small pox.

(2)* In addition 16,705 operations—531 primary and 16,174 re-vaccinations were performed by Military medical officers in cantonments. Out of these 6,015—336 primary and 5,679 re-vaccinations were successful.

SUM

	Total number of persons vaccinated.		Total number of operations performed.	
	Primary.	Re-vaccination.	Primary.	Re-vaccination.
By special staff (statement I) ..	1,203,564	58,966	1,251,172	58,404
By dispensary staff (statement III) ..	215	297	215	297
By other agencies ..	..	..	..	..
Total ..	1,203,779	58,663	1,251,387	58,761

in the United Provinces during the year 1923-24—(concluded).

Total of all ages.	Re-vaccination.		Percentage of successful cases in which the results were known.		Persons successfully vaccinated per 1,000 of population.		Percentage of unknown cases to total cases.		Average annual number of persons successfully vaccinated during previous five years.		Average annual number of deaths from small-pox during previous five years.		
	Unknown.	Total.	Successful.	Unknown.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Number.	Ratio per 1,000.	Number.	Ratio per 1,000.	
11	12	13	14	15	16	17	18	19	20	21	22	23	24
21,075	44	586	439	15	95·92	76·88	28·87	·20	2·56	27,218·40	80·48	110	·13
22,271	68	160	84	1	98·05	52·83	30·87	·28	·62	24,237·00	83·45	58	·08
31,589	190	444	401	3	96·44	90·93	27·69	·58	·67	86,608·00	81·67	191	·16
14,361	134	82	3	3	97·70	94·25	17·35	·84	3·83	19,288·60	23·05	390	·54
20,511	187	920	570	54	98·18	65·82	25·37	·71	5·87	23,489·00	27·97	15	·02
74,590	8,035	619	439	44	84·92	76·85	22·97	3·34	7·11	81,565·80	25·27	507	·16
51,221	1,626	2,084	970	938	97·92	93·63	27·11	3·01	49·06	52,196·60	27·94	139	·07
27,358	447	556	419	23	92·55	78·61	18·17	1·49	4·14	35,632·20	23·64	411	·27
262,976	5,686	5,409	3,404	1,141	92·64	79·76	23·86	1·96	21·09	300,280·60	27·16	1,721	·15
1,127,423	13,452	58,464	33,105	6,600	91·53	68·83	25·57	1·55	11·29	1,237,139·80	26·76	4,386	·60
179	19	297	115	13	91·33	40·49	..	8·84	4·38	..	..	..	..
1,127,602	19,471	58,761	33,220	6,613	91·53	63·70	25·57	1·55	11·25	1,237,139·30	26·76	4,386	·09

(2)—Difference of 42,706 between the number of primary vaccinations and re-vaccinations performed (total of columns 8 and 13) and the total number of persons vaccinated (total in column 6) represents secondary operations.

MARY.

Percentage of successful cases in which the results were known.		Average number of persons vaccinated by each vaccinator.		Number of children successfully vaccinated.		Ratio of successful vaccination per 1,000 of population.	Total cost of department.	Average cost of each successful case.
Primary.	Re-vaccination.	Vaccinators employed.	Persons vaccinated by each vaccinator.	Under one year.	One and under six years.			
91·53	68·83	905	1,399·92	8,10,539	2,84,980	25·57	387,344	0 4 10
91·33	40·49	..	..	62	88	..	..	..
..
91·53	63·70	905	1,399·92	8,10,651	2,85,063	25·57	387,344	0 4 10

STATEMENT NO. II.—Showing the cost of the department

Number.	Ranges and districts.	Expen							
		Assistant Direc- tors of Public Health.		Assistant Super- intendents of Vaccination.		Vaccinators.		Clerks.	
		Number.	Pay.	Number.	Pay.	Number.	Pay.	Number.	Pay.
			Rs.		Rs.		Rs.		Rs.
41									
42									
43									
44	1 Dehra Dun	1	540	7	1,341	..	..	..	..
45	2 Saharanpur	1	540	18	5,594	..	2	293	..
46	3 Muzaffarnagar	1	837	14	4,812	..	..	..	..
47	4 Meerut	1	585	29	9,449	..	..	..	..
48	5 Bulandshar	1	678	20	5,546	..	..	..	..
	6 Aligarh	1	563	21	6,340	..	..	..	..
	7 Muttra	1	540	15	5,805	..	..	..	..
	8 Agra	1	1,680	22	6,937	..	1	12	..
	9 Mainpuri	1	694	13	3,668	..	..	..	..
	10 Etah	1	466	17	5,093	..	..	..	..
	11 Bareilly	1	780	19	5,343	..	2	127	..
	12 Bijnor	1	601	17	5,454	..	..	..	..
	13 Budann	1	561	20	5,497	..	..	..	..
	14 Moradabad	1	900	23	5,937	..	1	15	..
	15 Shahjahanpur	1	720	13	4,612	..	..	..	..
	16 Pilibhit	1	653	9	2,663	..	..	..	..
	17 Garhwal	1	720	13	3,705	..	..	..	..
18	Naini Tal	1	900	12	3,217	..	..	..	..
18A	Government Bovine Lymph Dépôt, Patwa Dangar, District Naini Tal.	..	..	4(a)	2,539	4(b)	6,003	..	..
19	Almora	1	759	19	5,601	..	..	..	..
20	Lucknow	1	699	15	4,393	..	..	..	..
21	Unao	1	756	15	3,793	..	..	..	..
22	Rae Bareilly	1	434	16	4,433	..	..	..	..
23	Sitapur	1	557	20	5,381	..	..	..	..
24	Hardoi	1	723	20	4,069	..	..	..	..
25	Kheri	1	548	26	7,210	..	..	..	..
26	Fyzabad	1	630	21	7,010	..	..	..	..
27	Gonda	1	716	25	3,180	..	..	..	..
28	Bahraich	1	588	20	6,404	..	..	..	..
29	Sultanpur	1	483	18	3,767	..	..	..	..
30	Partabgarh	1	682	15	3,733	..	..	..	..
31	Bara Banki	1	642	19	4,702	..	..	..	..
32	Farrukhabad	1	720	16	4,405	..	..	..	..
33	Ktawah	1	315	13	3,670	..	..	..	..
34	Cawnpore	1	1,260	23	7,295	..	..	..	..
35	Fatehpur	1	540	12	2,962	..	..	..	..
36	Allahabad	1	730	23	7,474	..	1	210	..
37	Jhansi	1	540	23	7,638	..	..	..	..
38	Jalonn	1	540	14	3,942	..	..	..	..
39	Hamiirpur	1	503	13	3,375	..	..	..	..
40	Banda	1	615	18	4,933	..	..	..	..

(a) Laboratory Assistants.

(b) Includes one Superintendent and one Electrician.

in the United Provinces during the year 1923-24.

Expenditure.		Paid from—											Number of all successful vaccinations and re-vaccinations performed by the Vaccination staff only.	Average cost of each successful case performed by the Vaccination staff only.	Number.
Peons.		Imperial funds.	Provincial funds.*	Local funds.†	Municipalities.	Native States.‡	Total.	Number of all successful vaccinations and re-vaccinations performed by the Vaccination staff only.	Average cost of each successful case performed by the Vaccination staff only.	Number.					
Number.	Pay.	Total pay of establishment.	Traveling allowance.	Contingencies.	Total cost.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	A. p.	Number.	
..	..	2,381	180	465	3,026	..	720	1,397	909	..	3,026	5,610	8 8	1	
..	..	6,427	90	925	7,452	..	2,387	8,168	1,947	..	7,452	81,356	3 9	2	
..	..	5,639	124	661	6,424	..	2,602	2,689	1,602	..	6,484	26,658	3 10	3	
..	..	10,084	120	1,145	11,299	..	1,545	8,247	1,507	..	11,299	40,738	4 5	4	
..	..	6,224	125	1,108	7,457	..	2,871	8,409	1,377	..	7,457	84,076	3 5	5	
3	112	7,015	70	1,132	8,217	..	2,539	3,708	1,370	..	8,317	30,686	4 3	6	
2	221	6,566	129	813	7,513	..	3,031	2,943	1,539	..	7,513	15,883	7 7	7	
2	232	8,911	120	1,730	10,751	..	2,160	5,571	3,020	..	10,751	24,724	6 11	8	
..	..	4,362	157	532	5,051	..	1,999	3,237	125	..	5,051	15,101	5 4	9	
..	..	5,499	171	774	6,444	..	4,517	3,596	1,566	285	6,444	22,140	4 5	10	
1	125	6,360	130	914	7,334	..	4,717	2,139	628	..	7,334	24,780	4 9	11	
1	60	6,115	140	837	7,112	..	2,730	2,647	1,535	..	7,112	20,905	5 5	12	
1	126	6,174	120	724	7,018	..	1,474	4,410	1,134	..	7,018	23,260	4 9	13	
6	458	6,630	119	1,009	7,843	..	2,439	2,790	2,569	..	7,843	85,659	3 6	14	
2	126	5,458	192	854	6,134	..	1,636	3,238	1,140	..	6,134	21,077	4 7	15	
1	174	3,490	87	592	4,169	..	937	2,403	824	..	4,169	14,515	4 7	16	
..	..	4,425	180	549	5,143	..	1,772	3,376	..	..	5,143	18,336	4 6	17
2	197	4,314	356	1,331	5,901	..	2,321	2,412	1,268	..	5,901	7,201	13 1	18	
4(e)	776	9,359	617	26,038	36,014	..	86,014	..	..	..	86,014	..	..	18A
..	..	6,360	1,640	878	8,878	..	1,305	7,126	447	..	8,878	22,027	6 5	19	
8	430	6,018	142	1,038	7,258	..	8,736	277	3,185	..	7,258	16,731	6 11	20	
2	172	4,721	121	767	5,609	..	2,039	3,030	440	..	5,609	17,939	5 0	21	
..	..	4,917	102	371	5,390	..	1,408	2,192	273	1,512	5,390	18,807	6 3	22	
1	42	6,480	45	332	7,517	..	1,130	3,331	552	1,504	7,517	30,709	3 11	23	
2	352	4,732	129	1,327	6,243	..	2,722	2,522	1,004	..	6,243	96,117	6 2	24	
1	43	8,010	154	1,133	9,237	..	2,335	3,358	495	3,109	9,237	24,139	6 2	25	
2	134	9,080	189	1,349	10,817	..	4,778	2,165	1,368	..	8,511	32,329	5 11	26	
3	132	7,124	90	1,003	8,219	..	3,103	6,385	729	..	10,817	28,653	6 0	27	
..	..	4,250	208	713	5,171	..	3,701	3,820	693	..	8,219	88,633	8 11	28	
..	..	4,465	90	873	5,428	..	1,744	2,344	263	315	5,171	33,036	5 2	29	
2	38	5,382	93	532	6,007	..	1,402	3,711	233	32	5,428	17,010	5 1	30	
..	..	5,215	132	730	6,077	..	1,387	3,357	333	..	6,077	16,235	6 1	32	
..	..	3,666	52	663	4,700	..	1,420	2,696	534	..	4,700	17,845	4 5	33	
6	822	3,878	135	1,329	11,042	..	2,655	5,337	3,000	..	11,042	32,658	5 5	34	
..	..	3,602	120	480	4,102	..	1,802	2,148	152	..	4,102	15,373	4 3	35	
4	830	8,354	116	1,231	10,200	..	2,699	5,559	1,942	..	10,200	25,715	5 5	36	
2	115	8,239	140	630	9,128	..	2,459	5,481	1,188	..	9,128	20,038	7 3	37	
..	..	4,482	90	632	5,254	..	2,257	1,338	725	874	5,254	13,320	6 1	38	
..	..	4,373	125	486	4,989	..	3,314	1,675	..	..	4,989	15,457	5 2	39
2	117	5,665	124	557	6,346	..	2,034	3,775	537	..	6,346	16,134	6 3	40	

(e) Includes two Mails.

* Government.

† District Boards, Cantonments, Town and Notified Areas.

‡ Includes contributions from Court of Wards and private persons.

STATEMENT NO. II.—Showing the cost of the department

Number.	Ranges and Districts.	Expen							
		Assistant Direc- tors of Public Health.		Assistant Super- intendents of Vaccination.		Vaccinators.		Clerks.	
		Number.	Pay.	Number.	Pay.	Number.	Pay.	Number.	Pay.
			Rs.		Rs.		Rs.		Rs.
41	Benares .. ..	..	..	1	780	14	4,154	2	594
42	Mirzapur .. ..	..	..	1	466	22	4,288	..	..
43	Jaunpur .. ..	..	..	1	720	19	4,074	..	..
44	Ghazipur .. ..	..	..	1	720	13	4,911	1	108
45	Ballia .. ..	..	..	1	540	14	4,791	..	..
46	Gorakhpur .. ..	..	..	2	1,680	50	14,865	..	..
47	Basti .. ..	..	..	1	720	30	9,014	..	..
48	Azamgarh .. ..	..	..	1	540	21	6,992	..	..
	Total of District ..	..	..	49	33,204	909	2,62,254	14	7,972
	Office establishment of Assistant Director of Public Health, 1st Range.	1	16,142	..	..	..	..	1	758
	Office establishment of Assistant Director of Public Health, 2nd Range.	1	19,561	..	..	..	..	1	866
	Office establishment of Assistant Director of Public Health, 3rd Range.	1	11,200	..	..	..	..	1	849
	Office establishment of Assistant Director of Public Health, 4th Range.	1	9,600	..	..	..	..	1	977
	GRAND TOTAL ..	4	56,503	49	33,204	909	2,62,254	18	10,817

in the United Provinces during the year 1923-24—(concluded).

diture.						Paid from—										Number of all successful vaccinations and re-vaccinations performed by the Vaccination staff only.	Average cost of each successful case performed by the Vaccination staff only.	Number.
Peons.		Total pay of establishments.	Travelling allowance.	Contingencies.	Total cost.	Imperial funds.	Provincial funds.*	Local funds.†	Municipalities.	Native States.‡	Total.	Number of all successful vaccinations and re-vaccinations performed by the Vaccination staff only.	Average cost of each successful case performed by the Vaccination staff only.	Number.				
Number.	Pay.														Rs.			
4	216	5,744	200	959	7,008	..	2,871	2,194	2,498	..	7,008	21,514	5	2	41			
..	..	4,754	117	811	5,682	..	1,123	3,711	848	..	5,632	22,355	4	1	42			
1	89	4,838	90	859	5,782	..	2,702	2,757	323	..	5,732	31,900	2	10	43			
2	99	5,088	90	658	6,586	..	2,488	2,367	894	887	6,536	14,444	7	3	44			
1	60	5,391	90	1,060	6,541	..	2,220	3,985	386	..	6,541	21,081	4	11	45			
..	..	16,545	258	1,980	18,733	..	9,509	8,529	551	144	18,733	75,029	4	0	46			
..	..	9,784	120	2,010	11,864	..	3,127	8,497	..	2	11,864	52,191	3	7	47			
..	..	7,532	120	946	8,598	..	3,000	5,839	209	..	8,598	27,777	4	11	43			
68	5,953	3,08,733	8,368	70,198	3,37,344	..	1,52,646	1,76,743	48,708	9,252	3,37,344	11,60,523	(d)	4	10			
3	857	17,252	2,346	1,237	21,335	..	21,335	..	..	..	21,335	..	..	..	..
8	369	20,796	2,376	1,278	24,450	..	24,450	..	..	..	24,450	..	..	..	..
3	378	12,427	1,717	866	15,010	..	15,010	..	..	..	15,010	..	..	..	..
3	373	10,955	2,400	1,094	14,449	..	14,449	..	..	..	14,449	..	..	..	..
80	7,435	3,70,213	17,707	74,668	4,62,588	..	2,27,890	1,76,743	48,708	9,352	4,62,588	11,60,523	(d)	4	10			

*Government.

†District Boards, Cantonments, Town and Notified Areas.

‡Including contributions from Court of Wards and private persons.

(d) Calculated on the total number of successful vaccinations and re-vaccinations performed by the special department only and the total cost of districts excluding that of the Government Bovine Lymph Dépôt.

COMPARATIVE STATEMENT NO. IV.—Showing the number of persons primarily vaccinated and the number successfully vaccinated in the United Provinces in each of the undermentioned official years.

Number.	Range.	Establishment.	Persons primarily vaccinated.				Persons primarily vaccinated.	
			1914-15.		1915-16.		1916-17.	
			Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.
MEERUT DIVISION.								
1	First Range.	Government	66,650	65,860	63,535	67,194	62,165	61,154
2		Municipal	27,863	26,505	26,000	25,153	26,393	25,704
3		Local Funds	69,644	67,113	72,763	70,573	80,614	78,771
4		Native States .. .. .	..	..	..	..	..	..
AGRA DIVISION.								
5	First Range.	Government	66,767	64,153	66,560	64,431	62,057	59,733
6		Municipal	90,113	23,505	30,424	28,727	27,342	26,696
7		Local Funds	57,681	54,901	61,777	58,760	73,453	70,530
8		Native States	1,573	1,521	1,554	1,522	1,691	1,651
ROHILKHAND DIVISION.								
9	First Range.	Government	93,095	92,309	83,251	82,630	83,091	84,133
10		Municipal	40,036	37,479	37,075	35,620	36,393	34,993
11		Local Funds	46,845	44,763	56,349	54,277	62,941	60,469
12		Native States	3,531	3,320	3,350	3,255	1,331	1,852
GARHWAL DISTRICT.								
13	First Range.	Government	7,332	7,727	7,277	7,202	6,472	6,395
14		Local Funds	3,181	3,030	7,954	7,361	11,016	10,947
Total of First Range			524,326	502,236	526,239	507,255	540,384	523,123
NAINI TAL AND ALMORA DISTRICTS.								
15	First Range.	Government	19,246	18,334	13,550	13,216	11,337	11,490
16		Municipal	1,124	1,110	1,208	1,201	1,174	1,168
17		Local Funds	11,408	11,231	16,099	15,433	15,372	14,843
18		Native States .. .. .	..	..	..	..	..	..
LUCKNOW DIVISION.								
19	Second Range.	Government	73,815	71,205	78,624	75,622	76,463	73,391
20		Local Funds	13,503	17,771	19,327	18,631	20,618	19,494
21		Municipal	66,296	64,519	51,632	49,357	60,644	53,793
22		Native States	30,793	29,335	29,941	29,107	34,434	33,533
FYZABAD DIVISION.								
23	Second Range.	Government	85,146	83,059	87,531	85,432	82,730	80,921
24		Municipal	12,171	11,769	12,567	12,325	12,658	12,212
25		Local Funds	70,584	69,066	77,393	76,263	82,543	89,900
26		Native States	13,691	13,046	3,793	3,709	3,339	3,735
Total of Second Range			407,727	396,746	392,210	380,359	402,437	391,073

COMPARATIVE STATEMENT NO. IV.—Showing the number of persons primarily vaccinated and the number successfully vaccinated in the United Provinces in each of the under-mentioned official years.

Number.	Range.	Establishment.	Persons primarily vaccinated.				Persons primarily vaccinated.	
			1914-15.		1915-16.		1916-17.	
			Total number.	Number successfully fully vaccinated.	Total number.	Number successfully fully vaccinated.	Total number.	Number successfully fully vaccinated.
MEERUT DIVISION.								
1	First Range.	Government	66,650	65,960	68,555	67,194	62,165	61,154
2		Municipal	27,368	26,505	26,000	25,153	26,398	25,704
3		Local Funds	69,644	67,113	72,768	70,573	80,614	78,771
4		Native States .. ..	..	..	..	..	..	..
AGRA DIVISION.								
5	First Range.	Government	66,767	64,158	66,960	64,481	62,057	59,783
6		Municipal	30,118	28,505	30,424	28,727	27,843	26,696
7		Local Funds	67,681	64,901	61,777	58,760	73,458	70,580
8		Native States	1,678	1,621	1,654	1,523	1,691	1,661
ROHILKHAND DIVISION.								
9	First Range.	Government	93,096	92,809	85,251	82,630	83,021	84,133
10		Municipal	40,096	37,479	37,075	35,620	36,898	34,998
11		Local Funds	46,845	44,763	56,349	54,377	62,941	60,463
12		Native States	8,581	8,320	3,850	3,255	1,831	1,861
GARHWAL DISTRICT.								
13	First Range.	Government	7,832	7,727	7,377	7,302	5,472	6,395
14		Local Funds	8,181	8,030	7,954	7,861	11,016	10,947
Total of First Range			624,326	603,236	626,289	607,255	640,884	623,123
NAINI TAL AND ALMORA DISTRICTS.								
15	First Range.	Government	19,246	18,934	18,556	18,216	11,897	11,490
16		Municipal	1,134	1,110	1,208	1,201	1,174	1,169
17		Local Funds	11,408	11,281	16,099	15,433	15,873	14,849
18		Native States .. ..	..	..	..	..	..	..
LUCKNOW DIVISION.								
19	Second Range.	Government	78,815	71,206	78,634	75,622	76,463	75,891
20		Local Funds	13,503	17,771	19,327	18,631	20,618	19,494
21		Municipal	66,396	64,513	51,633	49,937	60,644	58,795
22		Native States	30,793	29,935	29,941	28,107	34,434	33,563
FYZABAD DIVISION.								
23	Second Range.	Government	85,146	83,059	87,581	85,432	82,730	80,921
24		Municipal	13,171	11,769	13,567	12,325	12,668	12,313
25		Local Funds	70,584	69,086	77,893	76,266	69,543	69,900
26		Native States	18,691	18,046	3,793	3,709	3,839	3,735
Total of Second Range			407,727	386,746	392,210	380,859	402,467	391,073

COMPARATIVE STATEMENT NO. IV.—Showing the number of persons primarily each of the undermentioned

Range.	Establishment.	Persons					
		1917-18.		1918-19.		1919-20.	
		Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.
First Range.	MERUT DIVISION.						
	Government	66,470	65,663	42,643	42,015	41,373	40,379
	Municipal	23,152	24,553	20,569	19,989	20,314	20,150
	Local Funds	81,054	79,177	72,988	70,881	79,519	77,360
	Native States .. ..	..	..	..	..	..	..
	AGRA DIVISION.						
	Government	57,367	55,325	31,065	29,456	33,494	31,198
	Municipal	26,632	25,656	17,373	16,529	20,439	18,500
	Local Funds	78,302	75,827	43,631	46,135	63,284	64,668
	Native States	1,617	1,692	1,104	1,090	1,007	980
	ROHILKHAND DIVISION.						
	Government	84,910	80,735	61,626	59,640	54,509	50,735
	Municipal	35,150	34,093	27,544	26,565	28,019	26,509
	Local Funds	67,373	65,108	61,168	59,600	66,692	63,172
	Native States	1,683	1,618	1,072	1,029	15	13
GARHWAL DISTRICT.							
Government	7,832	7,690	5,187	5,032	5,641	5,514	
Local Funds	13,100	12,931	9,338	8,369	10,233	9,964	
Total of First Range ..	546,572	520,023	400,490	384,980	420,149	399,037	
Second Range.	NAINI TAL AND ALMORA DISTRICTS.						
	Government	9,357	9,126	7,737	7,503	8,070	7,954
	Municipal	1,248	1,231	1,331	1,199	883	866
	Local Funds	13,236	12,704	14,080	13,725	14,690	14,253
	Native States .. ..	..	..	..	..	..	..
	LOCKROW DIVISION.						
	Government	75,844	74,726	64,901	63,491	54,540	52,141
	Municipal	20,304	19,151	27,154	16,138	16,469	15,898
	Local Funds	60,809	58,658	33,993	50,924	54,907	62,340
	Native States	83,307	81,896	26,607	25,982	24,254	23,764
	FYZABAD DIVISION.						
	Government	87,432	85,359	69,001	66,951	70,344	63,412
	Municipal	18,037	12,787	11,631	11,169	9,173	8,806
	Local Funds	95,009	93,242	85,426	83,654	86,271	84,756
	Native States .. ..	..	..	..	..	..	..
Total of Second Range ..	403,533	396,390	356,661	340,681	340,395	323,609	

vaccinated and the number successfully vaccinated in the United Provinces in official years—(continued).

primarily vaccinated.

1920-1921.		1921-1922.		1922-1923.		1923-1924.	
Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.
89,900	38,222	80,088	29,188	81,407	30,449	25,965	24,887
19,453	18,987	17,951	17,466	17,960	17,462	17,898	15,914
88,874	81,526	92,136	89,962	92,130	88,698	102,068	94,612
..
..
90,581	29,926	28,666	27,461	26,149	24,708	25,408	22,928
19,832	18,419	18,964	14,150	16,907	15,755	16,568	14,738
61,697	56,809	68,797	65,179	70,384	66,775	76,869	68,487
1,645	1,606	2,289	2,248	2,235	2,148	1,691	1,617
..
51,549	47,763	45,960	43,072	40,055	37,248	40,697	38,355
23,961	22,261	20,007	19,012	19,972	19,025	22,914	20,641
70,666	63,609	70,885	67,851	78,974	75,616	89,982	81,640
..
..
4,282	4,141	2,117	2,050	1,529	1,439	1,743	1,710
9,134	8,958	9,404	9,150	8,194	8,989	9,438	9,018
415,414	398,127	408,719	385,840	406,796	388,186	428,840	392,888
..
..
7,461	7,185	5,707	5,449	5,468	5,310	5,097	4,758
845	884	1,181	1,112	1,048	1,021	1,005	979
15,066	14,659	14,692	13,828	15,000	14,087	19,974	18,878
..
..
47,816	45,780	36,498	25,300	22,745	31,695	31,054	29,398
15,999	15,802	14,718	14,064	14,598	18,908	14,548	18,775
66,819	65,689	54,740	58,851	61,618	60,102	64,738	61,806
26,657	24,972	20,769	20,838	28,418	22,952	28,432	22,755
..
..
61,728	60,848	51,288	50,198	52,555	51,846	48,712	46,840
8,950	8,731	7,845	7,668	7,960	7,873	8,768	8,393
84,968	82,992	82,269	81,005	84,821	88,408	96,043	92,243
2,228	2,299	2,749	2,691	3,797	3,862	4,128	4,088
827,032	818,526	822,388	805,499	802,343	795,089	817,506	802,758

* The total of these figures should be taken as 152,717 and not 153,868 as the Civil Surgeon, Bijnor, omitted to exclude 846 secondary operations in the district return.

vaccinated and the number successfully vaccinated in the United Provinces in mentioned official years—(continued).

primarily vaccinated.

1917-18.		1918-19.		1919-20.		1920-21.	
Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.
46,602	44,799	36,886	34,764	37,738	35,171	34,362	33,277
16,323	16,206	13,667	12,967	14,213	12,920	14,618	12,732
88,879	84,864	72,298	68,769	76,905	72,459	73,139	70,430
..	..	..	..	..	..	1,894	1,817
40,178	39,801	30,464	29,889	29,157	22,152	21,527	20,854
6,372	6,238	5,899	5,686	6,120	5,843	5,945	5,831
35,200	34,054	29,600	28,644	29,806	23,192	31,204	30,092
3,321	3,138	2,616	2,564	1,630	1,512	1,774	1,723
227,370	222,590	190,820	182,583	188,969	178,254	184,459	177,745
74,438	74,046	58,507	58,161	69,155	59,649	56,580	56,367
17,524	17,404	14,352	14,104	12,738	12,454	13,091	11,903
62,227	61,837	60,569	60,265	61,942	6,854	59,918	59,589
5,917	5,899	8,512	8,502	3,587	3,531	6,301	6,178
99,695	97,768	85,154	82,510	85,177	82,544	81,219	78,110
3,517	3,348	2,301	3,197	4,462	4,163	4,061	3,877
96,831	94,898	85,798	83,514	96,468	98,778	95,583	93,535
4,541	4,513	4,040	3,747	4,925	3,569	4,175	3,457
864,745	859,468	815,233	808,960	827,705	819,641	820,733	812,920
1,558,270	1,516,470	1,268,204	1,217,154	1,277,118	1,225,541	1,247,688	1,207,318
183	180	208	184	120	112	121	114
1,558,433(d)	1,516,638(e)	1,268,443(f)	1,217,355(g)	1,277,232(h)	1,225,634(i)	1,247,834(j)	1,207,457(k)

- (d) Includes 35 persons vaccinated by other agencies.
 (e) " 36 " successfully vaccinated by other agencies.
 (f) " 34 " vaccinated by other agencies.
 (g) " 17 " successfully vaccinated by other agencies.
 (h) " 44 " vaccinated by other agencies.
 (i) " 41 " successfully vaccinated by other agencies.
 (j) " 25 " vaccinated by other agencies.
 (k) " 25 " successfully vaccinated by other agencies.

COMPARATIVE STATEMENT NO. IV.—Showing the number of persons primarily vaccinated and the number successfully vaccinated in the United Provinces in each of the under-mentioned official years.—(concluded).

Serial number.	Range.	Establishment.	Persons primarily vaccinated.					
			1921-22.		1922-23.		1923-24.	
			Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.
ALLAHABAD DIVISION.								
27	Third Range.	Government	30,283	29,254	24,289	23,657	22,265	21,187
28		Municipal	14,817	13,583	14,329	13,547	14,107	13,289
29		Local Funds	65,604	68,574	72,428	69,897	78,894	71,527
30		Native States	1,524	1,464	..	..	..	..
JHANSI DIVISION.								
31	Third Range.	Government	22,182	21,610	19,277	18,897	20,536	19,918
32		Municipal	6,016	5,344	5,749	5,555	5,817	5,522
33		Local Funds	84,524	88,000	83,581	87,659	86,644	85,040
34		Native States	2,229	2,168	2,136	2,143	2,422	2,378
		Total of Third Range ..	176,679	170,499	176,949	171,295	180,655	168,806
BRNABES DIVISION.								
35	Fourth Range.	Government	42,327	41,873	38,861	38,357	30,826	29,628
36		Municipal	10,915	10,677	11,915	11,031	11,344	10,855
37		Local Funds	63,409	61,244	61,769	61,064	63,856	63,745
38		Native States	2,621	2,605	2,606	2,551	2,637	2,569
GORAKHPUR DIVISION.								
39	Fourth Range.	Government	62,779	59,874	59,729	57,077	57,106	52,399
40		Municipal	2,760	2,600	2,185	2,035	2,589	2,471
41		Local Funds	84,380	81,825	93,458	89,673	103,667	95,017
42		Native States	3,512	3,191	4,538	2,210	4,536	3,282
		Total of Fourth Range ..	271,662	264,038	274,356	265,038	281,561	262,976
		Total of all Ranges ..	1,144,398	1,105,936	1,160,949	1,119,578	1,208,564	1,127,428
		Total of Dispensaries ..	161	143	300	271	215	178
		GRAND TOTAL ..	1,144,559	1,105,079	1,161,249	1,119,849	1,208,779	1,127,606

* In addition, 336 successful primary operations were performed by military medical officers in cantonments.

STATEMENT NO. V.—Showing the particulars of vaccination verified by
Inspecting officers in the United Provinces during the year 1923-24.

Number.	Ranges and Districts.	Total number of persons vaccinated.		TOTAL NUMBER INSPECTED—	
				By Assistant Directors of Public Health or District Superintendents of Vaccination.	
		Primary.	Re-vaccinations.	Primary.	Re-vaccinations.
1	Dehra Dun ..	4,674	4,071	..	..
2	Saharanpur ..	81,990	3,051	..	..
3	Muzaffarnagar ..	37,465	67	3,968	..
4	Meerut ..	45,129	617	3,898	..
5	Bulandshahr ..	86,153	784	7,140	29
6	Aligarh ..	32,155	1,247	4,466	5
7	Muztra ..	17,867	138	1,046	..
8	Agra ..	28,800	3,011	..	..
9	Mainpuri ..	17,064	288	3,159	..
10	Etah ..	24,150	1,000	3,218	15
11	Etahilly ..	38,127	778	2,087	..
12	Bijnor ..	22,189	161	6,199	..
13	Budaun ..	25,363	487	2,436	..
14	Moradabad ..	87,232	894	1,632	..
15	Shahjahanpur ..	39,916	392	3,004	..
16	Pilibhit ..	15,294	310	3,880	28
17	Garhwal ..	11,176	10,056	316	22
18	Naini Tal ..	7,216	1,497	886	56
19	Almora ..	18,860	9,900	131	12
20	Lucknow ..	16,767	2,809	128	..
21	Unao ..	19,407	476	4,562	..
22	Rae Bareilly ..	14,581	33	2,731	..
23	Sitapur ..	31,377	35	4,848	..
24	Hardoi ..	25,799	14	1,768	1
25	Kheri ..	24,661	255	1,340	25
26	Fyzabad ..	24,682	469	5,673	15
27	Gonda ..	23,562	693	1,313	..
28	Bahraich ..	38,473	519	1,245	2
29	Sultanpur ..	33,810	19	7,212	..
30	Partabgarh ..	17,238	198	2,544	..
31	Bareilly ..	19,875	57	3,968	..
32	Farrukhabad ..	16,330	1,390	4,114	15
33	Etawah ..	19,342	1,124	2,366	..
34	Cawnpore ..	32,244	2,981	..	..
35	Fatehpur ..	16,094	459	4,511	5
36	Allahabad ..	31,196	1,788	3,004	..
37	Jhansi ..	21,173	529	1,528	..
38	Jalaun ..	13,681	768	4,037	50
39	Hamirpur ..	15,095	985	2,436	5
40	Banda ..	15,501	905	897	..
41	Benares ..	21,703	588	1,876	..
42	Mirzapur ..	22,566	169	1,876	..
43	Jannpur ..	32,896	446	5,672	..
44	Ghazipur ..	14,701	30	3,638	..
45	Ballia ..	21,827	920	3,928	33
46	Gorakhpur ..	85,838	618	10,650	8
47	Basti ..	53,431	2,034	4,635	..
48	Azamgarh ..	28,519	656	3,352	16
Total for the Province		1,208,564	53,366	446,166	493

STATEMENT NO. V.—Showing the particulars of vaccination verified by

Number.	Ranges and Districts.	TOTAL NUMBER INSPECTED—		PERCENTAGE OF NUMBER	
		By Assistant Superintendents of Vaccination or other Inspecting officers.		By Assistant Directors of Public Health or District Superintendents of Vaccination.	
		Primary.	Re-vaccinations.	Primary.	Re-vaccinations.
1	Dehra Dun ..	2,631	1,449	..	..
2	Saharanpur ..	14,326	402	..	..
3	Muzaffarnagar ..	10,648	..	14.45	..
4	Meerut ..	12,545	138	..64	..
5	Bulandshahr ..	10,284	99	19.75	8.95
6	Aligarh ..	9,661	45	18.86	..40
7	Muttra ..	11,617	..	6.02	..
8	Agra ..	14,426	731	..	..
9	First Range .. Mainpuri ..	6,316	58	19.65	..
10	Etah ..	13,892	115	13.30	1.50
11	Bareilly ..	13,249	142	7.42	..
12	Bijnor ..	9,152	9	27.94	..
13	Budann ..	13,021	19	9.61	..
14	Moradabad ..	14,623	8	4.45	..
15	Shahjahanpur ..	8,585	7	8.88	..
16	Pilibhit ..	10,295	67	25.24	9.03
17	Garhwal ..	2,633	2,456	1.92	..22
18	Naini Tal ..	3,965	1,151	12.28	3.74
19	Almora ..	11,415	11,686	..69	..12
20	Lucknow ..	8,640	258	..78	..
21	Unao ..	10,345	3	23.51	..
22	Rae Bareilly ..	6,328	..	18.66	..
23	Etahpur ..	9,657	1	15.25	2.86
24	Second Range .. Hardoi ..	9,495	..	6.57	..
25	Kheri ..	8,788	45	5.43	9.76
26	Fyzabad ..	8,797	30	23.03	3.20
27	Gonda ..	10,271	5	6.25	..
28	Bahraich ..	14,987	61	9.72	..88
29	Sultanpur ..	15,171	..	21.33	..
30	Partabgarh ..	10,151	91	14.71	..
31	Bara Banki ..	10,078	9	19.96	..
32	Farrukhabad ..	9,856	51	25.19	..79
33	Etawah ..	8,231	256	12.18	..
34	Cawnpore ..	14,130	296	..	..
35	Fatehpur ..	11,293	102	28.03	1.28
36	Third Range .. Allahabad ..	9,713	510	6.42	..
37	Jhansi ..	10,430	153	7.19	..
38	Jaloun ..	7,428	261	29.73	6.51
39	Hamirpur ..	9,781	133	16.47	..64
40	Banda ..	9,735	24	5.79	..
41	Benares ..	10,225	225	8.64	..
42	Mirzapur ..	11,375	..	8.31	..
43	Jamnpur ..	15,903	105	20.00	..
44	Fourth Range .. Ghazipur ..	8,592	..	24.44	..
45	Ballia ..	13,225	247	13.33	10.00
46	Gorakhpur ..	35,746	33	13.40	1.29
47	Basti ..	15,785	133	8.66	..
48	Azamgarh ..	10,618	73	31.04	2.88
Total for the Province ..		528,437	21,597	12.01	..69

Inspecting officers in the United Provinces during the year 1923-24—(concluded).

DEFECTORS TO TOTAL ACCINATED—		PERCENTAGE OF CASES FOUND SUCCESSFUL OF TOTAL NUMBER INSPECTED				Percentage of success reported by vaccinators.	
By Assistant Superintendents of Vaccination or other Inspecting officers.		By Assistant Directors of Public Health or District Superintendents of Vaccination.		By Assistant Superinten- dents of Vaccination or other Inspecting officers.			
Primary.	Re- vaccina- tions.	Primary.	Re-vaccina- tions.	Primary.	Re-vaccina- tions.	Primary.	Re-vaccina- tions.
57-96	35-59	..	..	88-90	41-91	88-84	51-71
44-78	19-60	..	..	91-89	55-06	89-41	70-78
38-77	..	91-88	..	90-84	..	95-82	84-85
27-90	23-37	68-48	..	86-99	18-51	85-81	40-80
38-44	3-95	81-49	23-81	86-08	28-81	90-64	41-54
30-04	8-61	94-56	..	89-41	22-78	91-81	46-95
66-89	..	89-66	..	87-80	..	86-59	87-40
50-09	86-85	..	..	77-60	8-88	79-72	7-78
87-01	24-89	70-77	..	87-87	..	66-88	48-08
57-52	11-50	89-28	68-67	91-39	..	91-16	58-44
47-10	18-25	81-11	..	80-27	48-82	84-51	44-41
41-24	5-59	86-11	..	98-67	16-18	92-41	49-30
50-83	3-90	78-24	..	83-24	80-00	87-71	51-84
38-86	2-08	98-91	..	85-54	50-00	90-92	30-51
36-90	2-40	76-56	..	89-10	..	80-78	34-06
67-88	21-61	92-27	55-55	90-51	32-56	88-70	79-61
23-56	24-40	96-20	36-81	90-17	20-60	96-60	82-31
54-95	76-89	96-80	100-00	96-05	23-95	91-15	87-76
60-52	118-04	100-00	100-00	95-88	57-67	94-45	56-92
51-53	9-18	69-58	..	92-78	52-61	90-79	45-02
55-88	68	65-45	..	76-12	38-38	86-61	81-46
46-88	..	85-66	..	91-19	..	82-76	40-00
31-21	2-86	87-87	100-00	97-50	100-00	96-47	71-87
35-43	..	90-52	..	95-40	..	97-18	71-45
35-43	17-58	98-24	80-00	95-92	28-95	96-90	88-26
35-71	6-39	87-66	100-00	86-82	66-67	90-51	49-00
35-96	..-72	90-15	..	96-52	100-00	98-16	90-75
44-77	11-75	95-87	100-00	97-89	100-00	98-76	95-87
44-87	..	98-34	..	98-94	..	88-17	88-88
58-77	47-15	92-87	..	97-88	89-65	98-85	95-68
60-71	15-79	79-86	..	82-64	26-00	87-45	44-74
57-29	2-70	90-48	88-88	86-08	59-46	89-38	65-77
42-86	22-77	91-10	..	78-84	41-21	64-81	67-45
48-98	7-66	..	..	97-70	80-15	95-92	67-08
70-17	21-75	98-63	100-00	77-16	49-02	85-18	75-48
31-13	23-55	88-78	..	88-11	78-01	89-31	62-88
49-26	28-92	90-69	..	87-05	48-78	87-16	61-19
54-23	33-98	96-28	..	94-88	86-58	98-24	92-48
64-80	14-22	93-15	50-00	88-40	20-00	96-80	84-63
62-60	2-65	95-15	..	99-46	100-00	98-26	98-09
47-11	88-39	87-71	..	97-86	82-70	95-82	76-88
50-41	..	98-49	..	97-82	..	98-05	62-88
48-39	23-70	97-99	..	98-57	97-96	96-44	90-99
56-04	..	95-68	..	95-71	..	97-70	94-25
60-69	26-85	94-20	80-49	98-54	48-65	98-18	65-82
41-62	5-74	88-41	40-00	80-48	65-22	84-92	76-85
39-61	9-00	86-82	..	98-82	98-18	97-92	98-68
37-23	13-18	91-80	60-00	96-00	70-59	92-55	78-61
48-72	87-00	88-25	65-44	90-88	48-14	91-58	68-88

APPENDIX A.—Showing the number and ratio of successful vaccinations and
Provinces for a

Number.	Division.	District.	1914-15.				1915-16.			
			Successful primary vaccinations.	Persons successfully vaccinated per 1,000 of population.	Deaths from small-pox in 1915.	Ratio of deaths from small-pox per 1,000 of population in 1915.	Successful primary vaccinations.	Persons successfully vaccinated per 1,000 of population.	Deaths from small-pox in 1916.	Ratio of deaths from small-pox per 1,000 of population in 1916.
1	AGRA.	Dohra Dun	6,649	44·82	1	..	5,960	85·29	9	·01
2		Sakarapur	32,580	85·47	2	..	32,927	34·98	4	..
3		Muzaffarnagar	30,259	38·16	5	·01	29,529	37·05	5	·01
4		Meerut	49,441	32·63	4	..	52,559	35·10	9	..
5		Enlandshahr	39,079	25·03	5	..	41,745	37·65	1	..
6		Aligarh	39,439	34·81	7	·01	40,183	35·32	15	·01
7		Muzra	21,208	32·48	17	·03	23,106	35·88
8		Agra	35,327	34·74	8	·01	34,867	34·74	51	·05
9		Mainpuri	25,128	31·83	4	..	26,520	33·43	14	·02
10		Etah	27,978	32·64	3	..	28,914	38·80	14	·02
11	Bareilly	32,699	30·03	1	..	28,181	26·02	19	·01	
12	Bijnor	28,383	35·42	7	·01	28,654	36·01	11	·01	
13	Budann	32,642	31·02	20	·02	31,127	29·65	34	·03	
14	Moradabad	37,979	30·33	3	..	33,815	31·73	4	..	
15	Shahjahanpur	28,645	30·43	4	..	32,309	34·37	5	..	
16	Pilibhit	18,023	37·60	2	..	15,746	32·85	11	·02	
17	Farrukhabad	19,100	21·99	5	..	22,033	35·86	11	·01	
18	Etawah	21,979	29·12	9	·01	21,339	28·40	..	..
19	Cawnpore	33,690	30·40	23	·02	34,935	31·41	69	·06	
20	Fatehpur	20,684	31·14	1	..	21,028	31·91	1	..	
21	Allahabad	41,174	28·51	55	·04	40,305	27·63	38	·02	
22	Jhansi	23,450	48·35	3	..	22,224	36·00	1	..	
23	Jalaun	15,149	40·92	..	..	15,927	41·96	1	..
24	Hamirpur	20,721	46·96	..	..	18,908	45·38	..	..
25	Banda	16,251	28·32	1	..	15,152	29·78	2	..	
26	Benares	39,126	23·37	246	·39	29,258	33·69	103	·11	
27	Mirzapur	23,647	33·85	499	·69	22,406	30·98	138	·19	
28	Jaurpur	44,925	39·02	195	·17	45,500	39·60	40	·08	
29	Chazipur	32,314	38·65	275	·38	29,969	35·63	178	·21	
30	Balia	31,865	39·43	26	·08	33,233	40·52	7	·01	
31	Gorakhpur	104,172	32·69	122	·04	103,033	32·33	131	·06	
32	Basti	57,427	32·40	107	·06	54,667	30·88	154	·08	
33	Azamgarh	40,951	27·64	159	·11	43,771	29·47	141	·09	
34	Naini Tal	9,835	59·16	4	·01	7,705	47·04	3	·01	
35	Almora	21,430	63·65	19	·04	22,205	68·98	34	·06	
36	Cachwal	15,907	77·15	11	·02	15,038	75·39	2	..	
37	Lucknow	32,716	30·70	3	..	31,735	33·77	4	..	
38	Unao	23,679	26·27	1	..	23,304	26·21	3	..	
39	Rae Bareilly	27,879	27·16	9	·01	25,430	25·37	4	..	
40	Sitapur	32,796	29·00	4	..	35,383	31·78	..	..
41	Hardoi	45,613	41·04	86	·08	25,695	32·14	37	·03	
42	Kheri	31,300	23·29	10	·01	31,264	33·07	1	..	
43	Fyzabad	32,305	29·31	43	·04	30,861	28·02	8	·01	
44	Gonda	41,773	30·23	14	·01	37,636	26·68	27	·02	
45	Bahraich	31,455	30·66	126	·12	34,777	34·60	77	·07	
46	Sultanpur	25,633	24·74	29	·08	25,387	24·43	1	..	
47	Parthagarh	26,178	29·32	30	·03	23,357	26·80	9	·01	
48	Bara Banki	24,599	23·68	45	·04	24,364	23·11	46	·04	
		Total	1,482,567	33·22	2,304	·05	1,464,738	32·31	1,515	·08
		Total of Dispensary Staff.	191	181
		GRAND TOTAL	1,482,778	33·22	2,304	·05	1,464,903*	32·31	1,515	·08

* Includes 24 vaccinations performed by other agencies.

APPENDIX A.—Showing the number and ratio of successful vaccinations and
Provinces for a

Number.	Division.	District.	1919-20.				1920-21.			
			Successful primary vaccinations.	Persons successfully vaccinated per 1,000 of population.	Deaths from small pox in 1920.	Ratio of deaths from small pox per 1,000 of population in 1920.	Successful primary vaccinations.	Persons successfully vaccinated per 1,000 of population.	Deaths from small pox in 1921.	Ratio of deaths from small pox per 1,000 of population in 1921.
1	MEERUT, AGRA, MEERUT.	Dohra Dun ..	3,964	30.55	15	.07	4,036	24.09	5	.02
2		Saharanpur ..	29,458	88.91	107	.11	28,051	81.25	7	.01
3		Muzaffarnagar ..	24,401	80.22	8	..	25,218	81.22	1	..
4		Meerut ..	44,191	50.42	10	.01	46,019	51.18	5	..
5		Bulandshahr ..	35,827	89.05	6	..	35,251	82.54
6		Aligarh ..	30,139	85.61	6	..	29,025	25.28	6	.01
7		Mathura ..	14,044	31.60	11	.02	15,034	33.95	2	..
8		Agra ..	21,684	21.94	5	..	22,285	22.14	15	.02
9		Mainpuri ..	18,852	23.68	6	.01	19,641	24.65	5	.01
10		Etah ..	20,732	24.04	15	.02	21,685	25.94	4	..
11	Bareilly ..	27,158	26.08	78	.07	25,006	23.67	12	.01	
12	Bijnor ..	22,287	27.89	86	.11	21,827	27.55	9	.01	
13	Budaun ..	24,526	25.45	38	.04	23,777	24.29	17	.04	
14	Moradabad ..	31,536	25.09	354	.28	29,622	26.12	9	.01	
15	Shahjahanpur ..	20,486	22.27	162	.17	21,178	22.68	38	.04	
16	Filibhit ..	14,456	34.76	157	.82	14,163	32.95	3	.01	
17	Farrukhabad ..	25,520	83.71	9	.01	24,867	29.11	2	..	
18	Bahawab ..	16,397	28.60	18	..	17,490	23.45	..	..
19	Cawnpore ..	30,268	29.87	18	.01	34,074	33.04	24	.02	
20	Fatehpur ..	16,207	24.60	1	..	15,734	20.29	..	..
21	Allahabad ..	31,218	21.72	202	.14	29,031	20.02	224	.16	
22	Jhansi ..	19,257	33.77	20	.03	19,778	31.90	5	.01	
23	Jalaun ..	11,591	33.17	10	.02	11,967	32.00	10	.02	
24	Hamirpur ..	12,414	32.20	2	..	12,247	31.14	..	..
25	Banda ..	14,442	24.05	80	.12	14,497	23.78	10	.02	
26	Benares ..	27,743	38.06	227	.26	27,800	33.46	54	.06	
27	Mirzapur ..	23,586	36.17	93	.13	22,953	33.89	92	.18	
28	Jaunpur ..	35,394	31.70	272	.23	35,534	31.43	55	.05	
29	Ghazipur ..	21,641	28.50	1,120	1.33	22,199	27.15	95	.11	
30	Ballia ..	24,233	29.65	38	.04	24,410	29.58	23	.03	
31	Gorakhpur ..	37,821	27.66	1,043	.33	35,229	26.89	36	.03	
32	Basti ..	53,083	30.06	239	.13	52,544	29.51	54	.08	
33	Azamgarh ..	43,250	29.48	1,021	.73	42,498	28.88	179	.12	
34	NAINI TAL, ALMORA, GARHWAL, LUCKNOW, UNAO, RAE BARELI, SITAPUR, HARDOI, KHORI, FYZABAD, GONDA, BAHRAICH, SULTANPUR, PARTABGARH, BARA BANKI.	Naini Tal ..	6,798	26.30	19	.06	6,524	26.41	4	.01
35		Almora ..	16,175	53.37	20	.04	16,104	53.43	2	..
36		Garhwal ..	15,478	38.84	3	.01	13,099	57.62	1	..
37		Lucknow ..	17,326	24.18	11	.01	16,834	20.86	6	.01
38		Unao ..	21,165	23.64	3	..	22,469	24.90	3	..
39		Rae Bareli ..	23,010	23.80	8	.01	19,193	18.95	18	.01
40		Sitapur ..	30,182	23.80	33	.08	30,398	26.76	6	..
41		Hardoi ..	38,639	25.81	97	.09	32,379	25.71	23	.03
42		Khori ..	23,251	24.80	59	.06	23,370	25.04	9	.01
43		Fyzabad ..	27,827	26.60	60	.05	21,913	20.79	58	.05
44	Gonda ..	32,307	23.25	57	.04	29,813	21.70	8	..	
45	Bahraich ..	27,701	27.00	182	.17	27,427	27.00	47	.04	
46	Sultanpur ..	31,502	20.15	55	.05	31,364	20.43	7	.01	
47	Partabgarh ..	13,242	20.52	132	.20	13,634	21.32	181	.21	
48	Bara Banki ..	24,364	22.59	24	.02	24,654	22.30	8	.01	
49	Total ..	1,225,541	27.84	6,354	.13	1,207,318	27.18	1,439	.03	
50	Total of Dispensary staff ..	112	..	..	..	114	..	..	..
51	GRAND TOTAL ..	1,225,653 (c)	27.84	6,354	.13	1,207,432 (d)	27.18	1,439	.03	

(c) Includes 41 vaccinations performed by other agencies.

(d)

number and ratio of deaths from small-pox in each district of the United States of 10 years—(concluded).

1921-22.				1922-23.				1923-24.	
Successful primary vaccinations.	Persons successfully vaccinated per 1,000 of population.	Deaths from small-pox in 1922.	Ratio of deaths from small-pox per 1,000 of population in 1922.	Successful primary vaccinations.	Persons successfully vaccinated per 1,000 of population.	Deaths from small-pox in 1923.	Ratio of deaths from small-pox per 1,000 of population in 1923.	Successful primary vaccinations.	Persons successfully vaccinated per 1,000 of population.
4,438	24·14	..	..	3,765	20·22	8	·01	4,005	26·43
27,373	31·24	..	..	29,938	32·73	15	·02	30,497	33·93
25,022	31·59	..	..	25,549	33·14	8	·01	26,597	33·56
43,434	29·10	..	..	41,771	33·06	13	·01	40,509	37·16
35,580	34·25	..	..	35,516	33·85	69	·05	33,781	31·93
29,133	23·13	..	..	30,017	28·88	58	·05	30,131	28·90
15,678	25·39	..	..	15,635	25·40	16	·02	15,337	25·65
23,291	25·82	..	..	24,003	25·23	53	·05	24,581	26·75
18,056	24·22	..	..	15,774	22·07	..	..	15,017	20·19
22,934	28·27	..	..	22,902	29·47	10	·01	22,659	27·89
23,357	23·39	..	..	23,620	23·58	10	·01	24,510	24·44
18,753	25·63	..	..	19,232	26·18	2	..	20,384	28·24
26,310	27·09	..	·01	25,739	26·47	4	..	23,060	23·85
27,379	23·85	..	..	29,049	24·29	19	·01	24,940	23·25
20,078	24·15	..	..	19,753	23·96	..	..	20,964	25·12
14,133	25·39	..	..	14,895	24·45	..	..	14,308	23·63
19,134	23·86	..	..	16,205	20·09	1	..	15,017	18·95
16,513	23·39	..	..	16,933	23·31	3	..	17,323	24·33
29,203	27·14	..	..	30,234	23·34	4	..	30,724	23·22
18,743	21·47	..	..	13,762	21·73	..	..	15,323	23·37
29,152	21·06	..	·04	29,905	21·83	223	·13	27,753	20·44
20,550	24·95	..	..	20,671	24·95	2	..	19,770	23·04
13,047	24·03	..	..	12,547	23·25	..	..	13,136	24·09
13,839	23·88	..	..	13,690	24·11	1	..	14,633	25·11
15,203	26·63	..	..	17,236	29·54	9	·01	15,361	25·31
25,330	23·40	..	·01	21,123	24·22	7	·01	21,075	23·87
21,370	23·60	..	·03	21,344	23·65	31	·04	22,271	23·87
35,545	27·15	..	·01	35,952	31·87	17	·01	31,539	27·69
13,637	15·60	..	·01	13,455	15·59	3	..	14,361	17·35
21,147	25·85	..	..	21,034	25·75	6	·01	20,311	25·37
70,990	21·77	..	·01	73,463	22·64	14	..	74,590	22·97
45,436	24·21	..	·01	50,232	25·69	1	..	51,331	27·11
30,533	20·23	..	..	28,341	18·64	12	·01	27,353	18·17
6,126	27·13	..	·04	6,450	27·73	11	..	6,705	26·00
14,233	27·77	..	..	13,943	23·47	13	·03	17,409	41·53
11,200	23·08	..	..	10,403	20·90	..	..	10,733	23·91
14,370	21·55	..	·01	15,634	22·43	..	·02	15,510	23·03
20,049	24·39	..	..	18,333	22·43	1	..	17,611	21·93
18,264	19·70	..	..	18,303	20·13	4	·05	13,739	14·74
24,995	23·08	..	..	23,691	23·83	2	..	20,633	23·13
24,968	23·04	..	..	25,243	23·31	7	·01	26,107	24·03
20,307	22·33	..	..	22,053	23·03	..	..	23,921	26·43
27,563	15·74	..	..	20,499	18·43	3	..	22,703	19·56
27,033	18·85	..	..	27,232	18·77	3	..	25,035	19·45
34,333	23·14	..	..	23,090	27·23	3	..	22,339	21·31
32,210	20·11	..	..	32,704	32·60	4	..	33,036	29·97
17,839	21·41	..	·01	16,261	19·64	13	·02	16,393	19·33
22,415	21·77	..	..	21,243	20·64	3	..	17,401	16·97
1,105,936	25·23	242	·01	1,113,573	25·53	747	·02	1,127,423	25·37
143	..	..	..	271	..	..	..	179	..
1,105,079	25·23	242	·01	1,113,844	25·53	747	·02	1,127,602	25·37

* In addition, 335 successful primary operations were performed by military medical officers in Cantonments.

APPENDIX B.—Showing the number of vaccinations performed in the municipal towns of the United Provinces on children under one year of age during the year 1923-24.

Number.	District.	Municipality.	Number of births during 1922.	Number of deaths amongst children under one year during 1923.	Number of successful vaccinations on children under one year during the year ending 31st March, 1924.	Date of extension of Vaccination Act to the municipality.	
1	2	3	4	5	6	7	
1	Dehra	Dehra Dun	1,040	277	509	14th May, 1891.	
2		Mussooree	224	57	213	Ditto.	
3		Saharanpur	3,334	1,047	1,179	28th April, 1892.	
4	Saharanpur	Hardwar Union	1,090	325	716	5th ditto.	
5		Deoband	984	209	629	7th June, 1894.	
6		Roorkee	535	159	305	7th August, 1891.	
7	Muzaffarnagar	Muzaffarnagar	275	194	518	21st December, 1892.	
8		Kairana	661	132	558	7th June, 1894.	
9		Meerut	3,209	717	3,136	12th March, 1891.	
10	Meerut	Ghaziabad	543	118	262	7th June, 1893.	
11		Hapur	1,058	271	489	16th October, 1894.	
12		Baraut	345	69	189	5th March, 1924.	
13	Bulandshahr	Bulandshahr	1,003	236	235	16th July, 1891.	
14		Khurja	1,438	458	917	28th June, 1894.	
15		Sikandrabad	982	272	665	16th April, 1894.	
16	Aligarh	Koil	3,377	995	2,067	24th November, 1891.	
17		Hathras	2,131	533	1,523	4th May, 1894.	
18		Atrauli	769	163	531	21st December, 1892.	
19	Muttra	Sikandra Rao	498	143	250	Ditto.	
20		Muttra	2,502	594	1,771	5th October, 1891.	
21		Bhindaban	497	165	351	6th August, 1891.	
22	Agra	Agra	9,448	2,058	3,371	5th June, 1891.	
23		Firozabad	874	243	643	Ditto.	
24		Mainpuri	317	67	135	15th June, 1891.	
25	Etah	Etah	372	87	234	6th May, 1891.	
26		Soron	547	153	291	Ditto.	
27		Kasganj	944	192	595	Ditto.	
28	Barailly	Jalesar	573	183	239	Ditto.	
29		Barailly	3,564	605	1,938	17th August, 1891.	
30		Bijnor	891	172	318	3rd July, 1891.	
31	Bijnor	Chandpur	714	187	498	6th July, 1891.	
32		Dhampur	362	73	180	16th April, 1894.	
33		Nagina	1,138	216	290	6th July, 1891.	
34	Budaun	Najibabad	1,048	208	613	Ditto.	
35		Budaun	2,008	601	1,077	29th July, 1892.	
36		Ujhani	339	97	240	1st July, 1891.	
37	Moradabad	Sahaswan	801	234	580	3rd July, 1891.	
38		Moradabad	4,636	1,140	2,550	19th December, 1892.	
39		Ohandansi	1,326	394	623	5th March, 1893.	
40	Shahjahanpur	Amroha	2,320	352	1,248	Ditto.	
41		Sambhal	2,224	459	1,349	1st April, 1893.	
42		Shahjahanpur	3,003	472	2,112	14th September, 1891.	
43	Pilibhit	Tilhar	921	245	435	2nd January, 1892.	
44		Pilibhit	1,908	508	805	9th July, 1891.	
45		Bisalpur	503	131	211	25th April, 1892.	
46	Farrukhabad	Farrukhabad	2,314	739	764	5th June, 1891.	
47		Fatehgarh.	..	..	..	..
48		Kanauj	..	538	145	318	16th September, 1921.
49	Etawah	Etawah	2,249	538	1,184	15th November, 1893.	
50		Cawnpore	..	7,772	3,849	4,529	1st August, 1893, 11th December, 1893, and 7th August, 1891.
51		Fatehpur	..	495	95	393	4th June, 1891.
51	Allahabad	..	6,522	1,826	2,476	2nd May, 1891.	

APPENDIX B.—Showing the number of vaccinations performed in the municipal towns of the United Provinces on children under one year of age during the year 1923-24—(concluded).

Number.	District.	Municipality.	Number of births during 1923.	Number of deaths amongst children under one year during 1923.	Number of successful vaccinations on children under one year during the year ending 31st March, 1924.	Date of extension of Vaccination Act to the municipality.
1	2	3	4	5	6	7
52	Jhansi	Jhansi	2,528	748	1,576	1st July, 1891.
53		Mau	662	244	447	5th May, 1892.
54		Lalitpur ..	579	120	399	24th May, 1894.
55	Jalaun	Orai	400	67	231	22nd July, 1891.
56		Kalpi	492	155	338	5th December, 1892.
57		Konoh	754	197	592	14th May, 1891.
58	Banda	Banda	613	167	379	24th March, 1893.
59	Benares ..	Benares ..	9,695	2,890	3,055	10th April, 1891.
60	Mirzapur ..	Mirzapur-Bindhachal	2,579	609	1,567	9th October, 1891.
61	Jaunpur ..	Jaunpur ..	1,187	200	1,076	26th February, 1892.
62	Ghazipur ..	Ghazipur ..	696	105	566	4th May, 1893.
63	Ballia	Ballia	495	75	268	6th May, 1891.
64	Gorakhpur ..	Gorakhpur ..	2,208	456	1,398	18th January, 1893.
65	Azamgarh ..	Azamgarh ..	487	73	124	8th February, 1893.
66	Naini Tal	Naini Tal ..	395	55	199	1st June, 1891.
67		Kaashipur ..	Kaashipur ..	557	119	390	5th May, 1894.
68	Almora	Almora	240	40	152	9th March, 1893.
69	Lucknow ..	Lucknow ..	10,222	2,949	4,416	4th February, 1893.
70	Unao	Unao	501	125	266	18th March, 1890.
71	Rae Bareilly	Rae Bareilly	742	924	266	1st June, 1891.
72	Sitapur	Sitapur	989	295	490	27th July, 1891.
73		Khairabad ..	Khairabad ..	581	129	296	12th April, 1892.
74	Hardoi	Hardoi	478	123	319	26th March, 1891.
75		Shahabad ..	Shahabad ..	372	156	562	17th March, 1892.
76	Kheri	Sandila	313	243	570	2nd January, 1892.
77		Lakhimpur ..	Lakhimpur ..	116	39	198	1st June, 1891.
78	Fyzabad	Fyzabad-Ajodhya	1,623	493	1,025	11th June, 1891.
79		Tanda	Tanda	396	136	280	18th July, 1891.
80	Gonda	Gonda	435	66	278	25th June, 1891.
81		Balrampur ..	Balrampur ..	737	154	523	Ditto.
82	Bahraich ..	Bahraich ..	373	159	583	5th December, 1892.
83	Sultanpur ..	Sultanpur ..	391	93	223	11th November, 1884.
84	Partabgarh ..	Beia	159	82	104	1st June, 1891.
85	Bara Banki ..	Nawabganj ..	401	106	249	2nd December, 1889.
		Total	133,415	35,623	69,579	

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N. B.—Owing to the calls of other work, I could not devote sufficient time to the writing of this address. The whole of the address was written in four days from April 11th to April 14th. My obligations to several educationists and authors are apparent on every page; but, as far as possible, I have tried to keep it clear of quotations and footnotes.

FELLOW-TEACHERS, LADIES AND GENTLEMEN—

It is a source of deep satisfaction to me to receive this token of appreciation and confidence from my brother teachers, and my first duty is to tender my thanks to the enterprising organisers of this Conference, for inviting me to preside over this session, and express my sincere pleasure at the opportunity that has been afforded me of expressing my views on the burning topics of the day. I confess I possess neither the experience nor the knowledge requisite for an office of such responsibility, but I am sustained by the belief that my shortcomings will be overlooked by a body that regards mutual help and toleration as its basic principles.

I should certainly have felt considerable difficulty in accepting your kind and generous offer, had I not been sustained by the conviction that at the present times we need workers, more workers, and still more workers for the cause which all of us have at heart. The War has tended to shift our angle of vision, and has left an infinity of problems for solution by the Indian people. They have the great heritage of a common tradition, they have the noble legacy of a noble civilisation, but tradition was of the past, and if, as to the past, they were but creatures, they had to remember that as to the future, they were creators, and in that work of creation no more potent instrument could be brought to service than the instrument of a common educational purpose, ideal, and outlook. It was easy to theorize, and simple to float about in the ether and discuss idealistic schemes, but in the schools, where living children have to be dealt with, it is a different thing altogether. The practical teacher's problem, when

they came down to fundamentals, was this: There were two things—the child and the environment, or heritage of culture;—and his problem was to bring those two into relation to one another. That seemed a simple thing at first sight, but as one looked into it more closely, complexity came in. The child was a variable, and the culture was a variable, and they were looking for laws and principles which would connect the two variables—a most difficult problem. From a bundle of instincts they had to get to a stage where the child's instincts were controlled by his intellect, and there was a continuous state of change and development. On the cultural side they had a gradual growth of knowledge, an alteration in the standards of aesthetics and morality, and a great variation in religious ideals. But through long experience a number of rules and precepts have been gathered together in a body of practical knowledge, but, curious to state, there has been very little attempt at systematisation. The scientific method in education consists in trying to systematise all those precepts and rules, to get something coherent, to show how all could be related, one to the other. That method has been adopted with very great success during the last thirty years, and it is undoubtedly the method of the future. Education could be made, and was already, a science.

The need of something vital and energising was felt. By means of psychological, biological, sociological, physiological and neurological study of the child there has been built up a really scientific method which would give to the teachers' work a scientific quality that had up to very recent times been quite unattainable. The use of statistical methods and other experiments in pedagogy are also helping them forward, and they were on the way to making education a real science in every sense of the word. I can testify from personal experience to the enthusiasm and zeal of the

leaders of the new movement. Their devotion, vigour and learning are vividly remembered by all who have had the good fortune to sit at their feet, and I cannot speak without emotion of the fervent piety that breathed through the lectures of Professor John Adams. He knows how to distribute figures in a given space with perfect balance, and how to mass them together in animated groups agreeable to the eye. He caught varied and transient shades of emotion, and expressed them by an analysis that is remarkable for its simplicity and vigour. His power of telling a story by gesture and action is remarkable in its peculiar appeal to the understanding. There are no ornaments or accessories in his lectures. Relying on his knowledge of human nature, and seeking only to make his subject intelligible, no lecturer is more unaffectedly pathetic, more unconsciously majestic. I will not mention others, as this will only weary you, but I should like to emphasise the importance of the new science. It is not a science in the sense in which Mathematics or Chemistry can be called a science. The time, however, is not distant when the theories evolved by a long line of distinguished investigators will possess the same degree of certitude, will command the same general assent, as the principles of Mathematics, or Chemistry, or Physics. There is much that strikes us as both crude and pedantic, at the same time infantine and pompous, in the systems elaborated by these pioneers of "New Education." They lack the vigorous simplicity that gave its force to Luther's intuition, the sublime unity of Spinoza's deductions. The dross of erudition mingles with the pure gold of personal conviction; while semi-scientific phrases, ill suited to express educational doctrines, lend an air of unreality to the sincerest efforts after a rational system of education. Intellectually, the pioneers of the new movement are equal to the task they have set to themselves. They have called to their aid poetry and history and legend; they

have ransacked the literature of the ancients, and coined, with inventive prodigality, names of awful import, and systems of deep meaning. Who has not shuddered at the vocabulary of Stanley Hall? Who can help a feeling of regret, mixed, I confess, with something allied to pleasure, at the ever-increasing list of new formulas, and newer names, which one finds in the "Journal of Experimental Pedagogy", or the "Journal of Educational Psychology?" Boccaccio supplies them, with the garden scene of youths and damsels dancing among roses, while from Petrarch they have borrowed the mystic robes of Death herself. The leper houses and the charnels have been ransacked for forms of grisly decay. Leaving aside the extreme expressions of this tendency in education, we may say that it has, on the whole, exercised a remarkably healthy influence on the revival of learning in modern times. It has infused new life into the school, and revolutionised the structure of educational thought. We in India know so little about the forces that have wrought marvellous changes in the educational system of England after the War that it is not surprising to come across people whose faith in educational progress is as weak as their faith in her political progress. Nay, I will go further, and assert that there are very few Training Colleges in India that keep abreast of the marvellous discoveries of the new science. The lessons of New Teaching may be summed up by saying that education is adjustment to environment. This is not a catch-word, as any one who has followed the dreary and mechanical process of education in India can testify.

Its significance.

What is the significance of this new tendency in education? The answer has already been given by implication. Education is a social service, and the school is a social agent. "All that society has accomplished for itself must be put through the agency of the school at the disposal of its future members." It is the motive power

in the organisation of modern nations, and its value receives added emphasis from the democratisation of our institutions. Let me quote the following from Professor John Dewey : "The school can not be a preparation for life, unless it reproduces within itself the conditions of social life. Education, progressing in a school organised as a social laboratory, is not merely a preparation for citizenship; it is an apprenticeship in citizenship." This practical grasp of the essential basis of educational process serves to emphasise alike the sociological tendency in education, and the democratic nature of modern educational progress.

The position of the Teacher.

The teacher has come to his own, and the time is not distant when his position will enable him to mould the age in which he lives. True, we have been accused of being too fond of the limelight. Our vanity has been pointedly commented upon, and there are not a few persons who regard vanity as the principal instrument whereby the teacher is induced to resign to his lot. The Master of Marlborough College told the story not long ago of the plumber who shook hands with the headmaster, sympathising with him warmly: "For I, too, belong to a despised profession." Nor must we forget the comment of the old woman in Dickens about "chaps as is too lazy even to be schoolmasters." But lack of appreciation outside is compensated by the atmosphere of respect within the school building. It is undeniable that teachers share a very general human preference for places reasonably near the front, and from the circumstances of the case, our occupation rather lends itself to the gratification of the desire for prominence. Outsiders are fond of comparing the schoolmaster to Gulliver among the Lilliputians. The comparison is not by any means flattering; but the fact remains that whether he will or no, the mere stature of the schoolmaster gives

him a position of importance among the youngsters, and all the circumstances of the relation between master and pupils give a prestige that enables him, at least figuratively, to deal with them *de haut en bas*. A prominent lecturer on education takes a special delight in pointing out to teachers what he regards as the principal vice of the profession,—talking too much. He had the curiosity to test his theory by means of stenographic records, and thus to discover how much time the teacher occupied in talking during a lesson-period, and how much time was given to pupils to speak. The relation between teacher-speech and pupil-speech was represented by a ratio in the teacher's favour that sometimes amounted to as much as 20 to 1. It may be that the experimenter was prejudiced against the teachers as a class, and selected only the garrulous ones for the pillory. Later investigations are much more reliable, for America, the home of educational experiments, supplies results more favourable to the fair play of the teachers. Sixty to forty appears to be a fairly common ratio, and sometimes the pupils have a better chance. Only in one case, however, did the pupils have more than 50 per cent of the whole talking-time.

The Modern Teacher.

I have quoted these examples merely with a view to showing the blurred vision, and violent prejudice which characterise the attitude of a section of the public. The teaching profession is regarded as the refuge of the misfit, as the last resort of the needy graduate, and as the dumping ground of disappointed men. That there is a certain amount of truth in the charge cannot be denied; nor can we deny the force of the contention that teachers as a class have a tendency to get into a kind of groove, from which it is often difficult for them to free themselves. But the position of the capable, successful and enthusiastic teacher—and this class, I assert, and assert

without any fear of contradiction, forms a very large part indeed of the members of our profession—is so radically different, that I am astonished that any one should have entertained such opinions. True, they possess not one of the qualities, nor cultivate one of the arts that recommend men to the favour and protection of the great. Nor are they made for a minion or a tool. As little do they follow the trade of winning the hearts, by imposing on the understandings, of the people. At every step of their progress in their own profession, and at every rung of the ladder, they are obliged to show their passports, and again and again to prove their title to the honour of being useful to their country, by a proof that they are not wholly unacquainted with its laws, and the intricate, and complex system of its education.

The Future of Education.

I am one of those who look forward to the time when education, interpreted in a broader sense than any with which we are familiar to-day, would become the dominant concern of every civilised community. To-day, the dominant interests are the political and the economic, and education is merely a satellite to these. I do not deny the importance of political or economic interests; nor do I think there is anybody who will ignore their importance. They are undoubtedly real and important—but they have no right to dominate the claims of the community for ever, and the evolutionary progress of mankind would not allow them to do so. The fate of this country depends upon their being able to change the present order, under which education danced attendance on political and economic necessities, and had to satisfy itself with crumbs that fell from their table. We must aim at making education, not a side-show, or appange of the State, but an equal partner in a community of interests. The teacher of to-day would be the statesman of to-morrow,

but he would be a different kind of statesman, in a different kind of state, with wider vision, larger aims, a more humane spirit, and a more efficient State-machinery.

**The Platonic conception,
and its application to Modern Times.**

Plato's conception of a state organised for the children of its members is no doubt familiar to you. He outlined a constitution, of which the outstanding feature was that the Minister of Education held the position of the Prime Minister of the State. He was placed in that position because the interests for which he was responsible were the pivot on which the entire fortunes of the community turned. His work was the first charge on the resources of the State, because, said Plato, "he is the chief aim of the national service." Plato's conception could not, of course, be applied to modern conditions, without considerable modifications. Insuperable difficulties to-day prevented them from claiming that education should dominate everything else. But they could, and I think they ought to, claim that education should not be dominated by anything else. We claim for it the status of an equal partner with the other great interests of the community. The politician and the economist had no right to treat the teacher as the servant of their designs. Education must be master in its own household. At present education was mixed up with far too much foreign matter. It was subject to many necessities outside its own sphere of business; it was directed by persons whose services were too often required for the management of other things.

Wanted Swaraj for Teachers.

In the matter of education I am a convinced Home Ruler. The idea of Swaraj had long been familiar in the political field, and had come into special prominence of late. Is it unreasonable to expect

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that our Indian statesmen may one day be persuaded to entertain the proposal of giving Swaraj to education? Were the teachers of the community such a dangerous lot that they could not be entrusted with self-government? The British Parliament had consented to give an instalment of self-government in 1919. Why should the Indian statesmen think it impossible to transfer some of the functions of the Education Department to the teaching community itself? Could not the three interests—the political, the economic and the educational—adjust and co-ordinate their respective spheres of action? That so much creative work had actually been done under the type of officialdom which now controlled the education of the country was hardly less than a miracle; but it was nothing in comparison to what would be done when creative thought became free, when the liberty of experiment was untrammelled, when education enjoyed the Dominion status which was its due and its destiny.

The indifference of the public to education had been exaggerated, or at least misunderstood. I have found hundreds—nay thousands of people keen for education, but they do not like what was offered them, and they greatly disliked the present system of management and control. They suspected the motive; they thought that the system of education now in vogue was not relevant to their needs. The first remedy was to get rid of the pernicious idea that education was divided into three parts—elementary education for the poor, secondary education for the well-to-do middle class, and higher education for the rich and the *elite*. Education would cease to be a class product, just in proportion as they linked on the higher stages to the lower, and so swept it clear of intellectual snobbishness. Instead of being a mark of superiority separating one class from another, education would become the ground of union, uniting them all. The choice would seem to be between education and ignorance. Real appreciation of the

the Education Commission of 1882. It stated that hitherto the state has mainly relied for the extension of education upon departmental effort or upon voluntary effort. But the former is obviously limited by financial considerations, and is therefore inadequate to the needs; while it moreover tends to discourage local effort and self-reliance. The latter is necessarily partial and uncertain, and is least likely to be forthcoming where it is most needed. What is now required seems to be some measure that will not only meet the present necessities in each Province, but be capable of expansion with future necessities. It is not thereby intended that any one large measure should regulate the details of legislation throughout all India. On the contrary, the recommendation cited is carefully guarded in its reference to the circumstances of each Province." The Commission, after pointing out that even in England, where jealousy of central action is notorious, it was never advanced, in the prolonged discussion which resulted in the Education Acts passed between 1870 and 1880, that if a national and adequate system of primary education was to be established, it would be established otherwise than legislation." The Report concludes thus: "Legislation is the only way in which all or any of the recommendations of the Commission, after approval by Government, can be made to live and last." The question naturally arises whether any legislation was undertaken after 1882, the year in which the Report of the Commission was published? We know unfortunately that the Government of India slumbered, once the masterful personality of Ripon was withdrawn from the scene; and it was not till after Mr. Gokhale had knocked loud and long that they condescended to acknowledge the existence of the evil, and professed, as usual, sympathy with the proposal. That their sympathy was not translated into vigorous action, shaking the dust and cob-webs of the drowsy Local Governments over whom they exercised their authority with

characteristic vigour, will be evident to any one who goes through that mournful story of heroic endeavours and unrealised ideals. Let me quote the words of Sir Harcourt Butler, then Member for Education, Government of India: "I should rejoice as much as they (Mr. Gokhale and others who supported his motion) to see a condition of things in which elementary vernacular education could be made compulsory and free in India. The Government of India are deeply concerned to bring about such a condition of things." This was the promise—what about the deed? Needless to say, no serious effort was made in that direction. The old system continued in all the luxuriance of its pristine vegetation, and neither the thunders of a Gokhale, nor the ceaseless efforts of his followers, could produce any impression worth the name.

The Policy of the U. P. Government.

However, the resolution of April 21st, 1913, seems to have infused some energy and vigour into the lethargic body of our Government. It indicated as its aim the doubling of primary schools and pupils in the "not distant future." But its characteristic feature was the allotment of imperial grants which, with the assistance of provincial revenues, raised the public expenditure on education by over 50 p. c. The sum received by our own Government amounted to Rs. 70,86,000 recurring, and Rs. 66,57,000 non-recurring. The amount was not spent by the end of the financial year, 1917, for we find no less a sum than Rs. 22,33,000 entered in the column as "unspent". Probably the system under which large sums were made available at irregular intervals and not as part of an orderly financial programme conducted on the one hand to discontinuity of policy, and on the other to spasmodic and reckless expenditure. Schemes which accommodated themselves to the amount of the allocations may not have been ready. The ultimate cost of a project may far exceed the sum

available, and uncertainty regarding the future may deter a local Government from embarking upon schemes, the first instalments of which will involve subsequent enhanced expenditure which they have no certainty of being in a position to meet. It is true, as pointed out by Sir Henry Sharp, that when a department or a local Government was suddenly provided with unanticipated funds, there was likelihood of waste in expenditure. For the funds at the disposal of the Department lapsed at the conclusion of the year, and there might be difficulty in re-including them in the budget. It cannot, however, be denied that in some cases the grants were expended, not in increasing the number of schools, but in the quest of a fanciful and unnecessary standard of efficiency.

The effects of the policy of the Government of India.

That these criticisms possess some force, is undeniable, nor is it less true that the irregularity, characteristic of the Government of India grants, militated against the success of this policy. These criticisms would have possessed considerable force if the local Government had not formulated a programme of expansion. The critics seem to forget that material resources never have supplied, nor ever can supply, the want of unity in design, and,—what is of far greater importance,—constancy in pursuit. But unity in design, and perseverance and boldness in pursuit have never wanted resources, and never will. And what was the plan to which so many references are to be found in the Reports of the Director of Public Instruction, and in the proceedings of the Legislative Council? Did it tour round the country, collecting data, and organising a body of documents that are a *sine qua non* of any policy that is rationally conceived, and intelligently carried out? Did it consider the fundamental question of the relation of local bodies to provincial bodies, as regards taxation? Did it consider the incidence of taxation, as it is upon the determination

of this question that the solution of this thorny problem will depend? Did it interview members of the municipal boards, district boards, educational associations of the Hindus and Mohammadans, with regard to the feasibility of a scheme of free primary education? Did the Committee consider the principles upon which the proportion of expenditure on primary education to that on secondary and higher education should be based? Were district officials consulted? Was any attempt made to elicit the views of the various sections of the Hindus and Muslims on the principle of compulsion? Did any member consider the possibility of the introduction of a system of compulsory education? Were any proposals formulated by the Committee, or by a member of the Committee, with regard to the adjustment of local to provincial finance? The answer, is no. The Committee did certainly consult "selected" chairmen of district boards, and "inspectors of schools who were present in Naini Tal." The leaders of a few institutions were also consulted, and then it seems to have regarded its work as finished. This is not the procedure that has been employed in England; this is not the procedure that has been employed in America, and this is not the procedure that has been employed in other European countries for the solution of this problem.

The Work of the Committee of 1913.

It is a question that affects every member of this large, historical province; a question in which political, financial, economic and educational interests are so inextricably involved that it is only by patient labour, a searching enquiry, by consultation with leaders of every class, of every district, of every religion, of every caste and of every profession, that success is possible. That these questions are of fundamental importance will be clear to anyone who has studied the history of the organisation of elementary education in European countries.

Yet, we find neither an enunciation of the principles that should guide us in outlining the policy of the local bodies towards education, nor a consistent, well thought-out estimate of expenditure on compulsory primary education. It may be replied that the object of the Committee was essentially different from that pursued by a committee appointed specially for the purpose of devising methods for the organisation of compulsory education. There is considerable force in this reply, but my argument is directed not against the work performed by the Committee—the work done by it, is undoubtedly of some value to the educationist value—but against the view that there is no need for any inquiry into the state of elementary education in this Province. The implication is that the Report of the Committee embodies principles, and conveys information, that are of the highest value to the modern educationist. Against this it is my duty to protest, and assert in no uncertain terms, that the whole sphere of elementary education needs careful, elaborate and systematic survey; and that the problem is of such complexity as to need the closest attention to the minutest details of the political and economic factors.

**The Principles underlying the organisation of State
Education in European Countries.**

What are the principles underlying the systems of State education in European countries? They may be summed up in the following remarks of Thomas Jefferson, uttered as far back as 1786. "It is an axiom in my mind that our liberty can never be safe but in the hands of people themselves, and that, too, of the people with a certain degree of instruction. This is the business of the state to effect, and on a general plan." As President Madison put it: "A popular government without popular information on the means of acquiring it is but a prologue to a farce, or a tragedy, or both."

From a cultural point of view, education is the effort to preserve the continuity, and to secure the growth, of common tradition. Without the inheritance of racial experience by participation in social institutions, the individual becomes an abstraction. The individual is educated by assimilating within his own experience the summarised achievements of the race; social stability is secured by this process, and social progress through the modification and slight increment which he may furnish to tradition.

The German system.

To Germany must be assigned the credit of recognising the principle that education lies at the basis of the economic prosperity, the political growth, and social well-being of the people, and the relation of the State to education in Prussia is still defined by the *Allgemeine Landrecht* of 1794. Under the first clause of this law of the constitution, "schools and universities are state institutions charged with the instruction of youth in useful information and scientific knowledge." By the provisions of the third clause, "all public schools and educational institutions are under the supervision of the State, and are at all times subject to its examinations and inspection." I need not go into the details of the system, but may refer here to the curious view of Bismarck on the nature of educational process. He impressed on the educational administrator the doctrine, which in any case was not new in Germany, that "the German child, when handed over to the teacher, is like a blank sheet of paper, and all that is written upon a child during the course of elementary education is written with indelible ink, and will last through life. The soul of a child is like wax. Therefore, he who directs the school directs the country's future." Though the objects served by the educational system of Germany were not admirable, the methods employed by the Government to

make the schools efficient will repay close study. The care and attention that are devoted to securing an efficient administrative machine are well rewarded in at least one direction. Prussia has few rivals in the efficiency with which the attendance of pupils is secured. Under the present laws pupils must be enrolled in schools on the registration days, of which there are two each year, nearest to the sixth birthday, and remain at school usually until confirmation, or about the completion of their fourteenth year. The efficient administration of the school attendance law is due not merely to the popular desire for education, but also to the fact that it is entrusted to the police, who keep all the vital records of the population.

The American system.

Let us compare the system of elementary education in operation in the United States of America. In this country, the elementary school is the foundation of the whole educational system. It is not an institution for a particular class of people. It receives its pupils at the age of six, or thereabouts, and trains them normally for eight years. The Southern States and New England represent exceptions to this, seven and nine years of elementary schooling respectively being the rule. In elementary schools the pupil is supposed to acquire the fundamentals needed in any walk of life. The total number of children enrolled in 1913 was 18,375,225. The perfection of technique attained by the system of instruction in America is remarkable, and there is no country in the world which has shown the same zeal and enthusiasm for education. The public school system of the country, free in many places, from the kindergarten to the University, summarises in brief an almost superstitious belief in education that is rooted, not merely in the idea of equality of all its citizens, but in the truer conception that the welfare of democracy depends on the intelligent co-operation of every

individual in promoting its ideals. The economic appeal is, in fact, a very bad second to the more genuinely natural ideal—to give every child, rich or poor, an equipment that will make him a better citizen, better able to cope with the problems that confront him to-day. The emphasis to-day, in urban or rural schools, in kindergarten or college, is on the social value of education. Four children in ten remain in school to the age of fifteen, and one in ten to the age of nineteen, while the estimated total cost of all kinds in 1915, amounted to no less than £171,007,902. The public elementary schools enrolled 18,375,225 pupils, and the public high schools 1,328,984, pupils, and the Universities, colleges and professional schools enrolled 303,223 students, while a total of 22,435,538 persons was accounted for, as under instruction of some kind, public and private. This achievement was attained not through a centrally organised national department of education, but in forty-eight states that are autonomous for educational purposes, and include within their boundaries smaller independent and autonomous authorities. With all this vast diversity of educational administration created by the co-existence of state and city systems, village and district systems, the country presents a remarkable uniformity of outline. The system of education is an expression of faith of the people in education. In that the public is willing to make the financial sacrifice that has filled the country with admirable school buildings for the free and universal use of its children in elementary, secondary, and higher education. The fear, uppermost in the mind of the English educationist when considering a publicly supported system, that voluntary effort and initiative may be crushed by it, is not justified by American experience. Side by side with the publicly controlled systems, there has sprung up a large number of privately supported agencies, such as the Carnegie Foundation for the Advancement of Science, the Russell Sage Foundation, and the General

Education Board, that co-operate with the public bodies or branch out into new enquiries and experiments that the public may be unable to undertake. That the public support of education has not affected private philanthropy may be judged from the fact that gifts and bequests of from 5 to 6 million pounds a year are made to educational institutions, both private and public.

Education in France.

The other European country to which I should like to draw your attention is France. Ever since the Revolution, France has acknowledged her responsibility for the education of all her citizens; and her realization of this duty has since then been progressively maintained. In 1833, the establishment of boys' schools was made compulsory in every commune, and an effort was made to set up a system of higher primary education. In 1868 a directorship of primary education was created. The Franco-German war gave an enormous impetus to the improvement of the peoples' schools, for France recognised that it was to a great extent the German elementary schoolmaster who had won the victory. The statement of Moltke is famous: "It was the schoolmaster who had won the battle of Sedan." Since 1881 primary education has been free, and since 1882, obligatory for all children from six to thirteen. In 1870, the State budget for primary education amounted to about 10 million francs; in 1913 it had reached the sum of 235 and a quarter francs.

Statistics of expenditure on Education in Germany and America.

Let me give the following figures of expenditure on German primary schools. The cost of elementary education in Germany amounts to over 75 per cent of the total cost, of the middle schools to about four per cent, and secondary education nearly 20 per cent. How inequitable this is will be clear from the

fact that nine out of only ten pupils are attending the elementary schools. The actual figures in 1911 were 89·7 per cent in the elementary schools, 2·9 per cent in the middle schools, and 7·4 per cent in the secondary schools. The inequality is still further intensified by the comparison of the per capita cost for each pupil in the three types of institutions. The cost per pupil in the elementary schools was 64 marks, in the middle schools 143 marks, and in the secondary schools 296 marks, or nearly four and a half times the cost of the elementary school pupil. In the United States the cost of educating a child in an elementary school in 1913 was 26·17 dollars, while the per capita cost of each high school pupil was 50 dollars 54 cents. Compare this expenditure with that on secondary and higher education in these Provinces, and you will be astonished to find the enormous difference in the relative cost of the three grades. I will go further, and assert that there is no civilised country in the world which spends such a large proportion of her expenditure on secondary and higher education as India, while the lack of even the rudiments of instruction in the so-called primary schools is in flagrant contrast with the professed aims of the organisers of these mushroom undertakings.

The system of State Education in England.

I will conclude my survey of primary education in Europe by citing the example of England. From 1839 to 1870, the Education Committee carried on the heavy task of administering a rapidly growing grant under the Regulation, first issued in 1839, that later became the well-known Code. The work of inspection was carried on with great thoroughness, and the reports of the inspectors are some of the most valuable documents extant for the social history of mid-Nineteenth Century. Macaulay,

Brougham, and Russell fought with peculiar energy to destroy the empire of ignorance. Russel proposed in 1852 that rates should be made available for education. Bill after Bill followed; Bill after Bill disappeared, while the conditions of childhood grew steadily worse. Bills were introduced in 1867 and 1868, intended to strengthen the voluntary system, but they were clearly inadequate. It is true that in 1869 a million children were at school, but of these 400,000 were under six, and only 640,000 were examined; while there were a million children between six and ten, and half a million between 10 and 12 not on the registers at all.

**The Machinery employed for the organisation of
Compulsory Primary Education in England.**

Compulsory attendance and compulsory rating were beyond doubt essential, and with the Act of 1870 a new system was inaugurated, and the whole country was divided into school districts. Beyond the ordinary divisions of municipal or parochial boundaries, there were certain modified forms of these school districts which could be applied at the discretion of the Education Department. Such being the division of districts for the purposes of the Act, the next step was to provide a machinery by which the supply might be obtained. The Educational Department was required to call for returns of the state of educational provision from the local authority in each district. Having thus set the machinery in motion, the Department was to test the returns it received by an army of special officers appointed for the purpose, and named Inspectors of Returns. As regards revenue, a school fund was established, which consisted of fees, of Parliamentary grants, of such other sums as might come to the School Board, and lastly, of that elastic element, from which all deficiencies were to be met—a compulsory local rate. The success of the Act was immediate. The

accommodation was nearly doubled between 1869 and 1876, and 13 millions of the population were under School Boards. When we gaze into the perspective of the history before 1870 we are able to see more signs of hope than the generation actually engaged in the struggle could foresee.

Educational reconstruction in England.

The period from 1870 to 1917 was occupied with one long struggle, and the contest was keen and desperate, but the victory was with the cause of righteousness, and in Fisher's triumph was a conclusive proof that the anxiety of the poor for education continues not only unabated, but daily increasing. This is not the place to trace the progress of education in England during the momentous years 1917-1923; suffice it to say that the century-long struggle for educational conditions worthy of the children of a great nation reached a new stage. Nothing is more eloquent than facts, and the following figures of educational progress in England will bear out the remarks made by me. In 1920 the total number of Local Education authorities for England and Wales was 319, with a population of nearly 38 millions. The number on the register of public elementary schools, in 1920, was nearly six millions, with an average attendance of nearly 5 millions and a quarter. This vast number is provided for in 20,981 schools, with an accommodation of nearly 7 millions places. The growth of expenditure on education can be studied best in the reports of the Board of Education, and the famous Geddes Report. The expenditure on Elementary Education in 1913-14 amounted to about 13 and a half million pounds; in 1922-23, it had risen to £42,200,000. The expenditure on elementary education in terms of cost per child amounted to £4-16-6 in 1913-14; in 1922-23 it had risen to £12-7-6. The salary bills had risen from 60 shillings 9 pence in 1913-14 to 168 shillings in 1922-23.

**Why Compulsory Primary Education should be organised in
Modern India.**

My object in tracing the progress of various systems of elementary education is to show to you the importance of avoiding the mistakes that nearly every country has committed in the fight against ignorance. The history of elementary education shows, moreover, that voluntary education is the most expensive luxury that could be offered to the people, and that compulsory primary education is the most economical, as it is certainly, the most intelligible method, affording an equal opportunity to all the members of the body politic. In the earlier part of the nineteenth century democracy was in the main a political idea. It took practical form as a protest against the aristocratic monopoly of Government, and found its chief expression in the demand for universal suffrage. Behind both old and new forms of democracy there is the consciousness of personal worth. The objection to the autocratic method of government and to the capitalistic system of industry is that they tend to treat the great mass of men as mere means to social well-being. As against that, democracy insists that every person, besides being a means to the maintenance of society, is an end in himself. The English statesman who remarked, not long before the passing of the Education Act of 1870, "We must now educate our masters" grasped the importance of education in democratic society. The only condition on which a wide suffrage is conceivable is that the whole people must be sufficiently educated to be able to vote intelligently. But the broad idea of democracy, as based on the worth of the individual man, calls for more than education in the three R's. It involves, over and above that, the higher education that opens up the spiritual realms of art, literature and religion in which a man is most completely free and, consequently calls for an education in the great human interests.

So far, this has only very partially been secured for the mass of the people; but it is coming to be recognised more and more as one of the urgent needs of the future.

The Serenity of India.

Let us now turn to India—serene, composed, meditative, enduring, yet full of dramatic force and of profound feeling. She alone seems tranquil in her empire; unimpeded in her educational development, I should rather say lack of development, independent of interference, undisturbed by the cross purposes and wranglings of educational firebrands. The serenity of undisturbed ease, the luxury of ignorance amassed with pathetic confidence, give a physiognomy of ease and proud self-confidence to all her edifices. The grim and anxious struggles of the educational reformers seem to have left no marks on the placid waters of the Indian Ocean. How different is this existence from many European countries where leaders could tell of their fierce struggle with ignorance, disease and misery; whose eager, passionate aspirations after independence ended in the complete victory of Light. Careless, isolated, poor, but haughty, with her pavements of liquid chrysoptase, with her palaces of porphyry and marble, her frescoed facades, her quays and squares aglow with the splendour of the East, she is asleep like a miracle of opal or of pearl upon the bosom of a merciless ocean—here and there only on the face of the whole globe was the unique country wherein the pride of life might combine with the lustre of the physical universe to create and stimulate in the artist a sense of all that was most sumptuous in the pageant of the world of sense.

The Report of the Committee of 1913.

The story of her effort to achieve a measure of compulsory primary education makes melancholy reading;

but it is my duty to trace it, if only to point out remedies for the future. The survey recommended by the Committee and adopted by the Government of the United Provinces depended on the main suggestions of that Committee—that a school carrying primary education up to its highest stage (class IV) should be placed within the reach of every child. The province was to be divided into circles, each of approximately 25 square miles. In each circle there was to be a full primary school, ideally of 200 boys, and any incomplete primary schools in the circle were to be regarded as feeders to it. The realisation of the schemes formulated by the Committee would have led to the abolition of many schools opened in answer to a real local demand, and it was feared that they might discourage the legitimate ambition of lower primary schools. The distribution was consequently revised, and while the main principles of the scheme were preserved, the proposed aim at concentrating 200 pupils in the central primary school, before other schools within the unit could be allowed to aspire to the upper primary standard, was definitely abandoned.

The Scheme in operation. Its modifications.

The scheme took effect in 1916-17, though not to its full extent. There was, no doubt, an increase of 30,000 that year, but not even the Government stated that its main object—the continuance of a larger number of pupils to the close of the full primary course—was attained. Though the percentage of pupils in the upper primary classes to the total in vernacular schools increased during the quinquennium from 10·1 to 12·8, there was actually a decline in that year. The scheme had, in fact, failed, and failed miserably. The Government of India again tried to rouse the local Governments out of their characteristic lethargy, and their Resolution of 1918 emphasised the necessity of the extension of primary education. The United Provinces

Government thereupon launched a fresh scheme, with the object of rapidly increasing the enrolment of primary schools in the Province. District Boards were asked in April, 1918, to prepare programmes to cover a period of five years. The variety of method evidenced in the proposals put forward, and the obvious uncertainty evinced by some district boards as to the needs of their districts, induced the Government to reconsider the duration of the experiment, and it was decided that, in the first instance, it should cover a period of three years. The quinquennial report shows an increase of 4,956 in the number of schools, and of 138,442 in the number of scholars. This may seem highly satisfactory, at first sight; but a close examination of the data shows clearly that the progress was very uneven. Meerut succeeded in raising its enrolment by 62 per cent, but its neighbour, Bijnore, shows a decline. There was actually a falling off in enrolment in no less than 33 districts during the last year. The direct expenditure on primary education was Rs. 67, 41, 509 in 1921-22, and the enrolment in primary schools was 832, 940. Thus the direct expenditure on each child is about Rs. 8 per annum. Including the children in the primary classes of English schools, there are only about 120,000 in the upper primary stage of all schools, and 250,000 in the preparatory stage. This leaves in the lower primary classes nearly 5 lakhs of children on whom 40 lakhs of rupees were spent to little purpose last year.

The Results of the New Scheme.

That the results had not realised the expectation of the public is admitted by the Education Department. What are the causes of this failure? The main cause is the lack of appreciation of the difficulties of the local authorities. Nobody who reads the apologia of the Hon'ble Pandit Jagat Narain, no one who goes through the reports of the period 1920-1923, can help being struck

with the failure of the Government to grasp the situation. Pandit Jagat Narain enumerated the doctrine that the expansion of primary education is the primary duty of the local authorities. This is but a half-truth, for though the local authorities ought to shoulder the burden, they ought not to shoulder the whole burden; and part, and sometimes a very large part indeed, must be borne by the State. This is all the more essential in India, where the resources of the local bodies are limited.

The Resources of the Local Boards. Are they sufficient?

I believe that if the Decentralisation Commission had gone thoroughly into the question of the relation of local to provincial finance, if it had laid down some principles for the guidance of the Provincial Governments, it would have saved us many disappointments. But it only touched the fringe of the subject, and the fundamental question of the resources of the local bodies remains still unsolved. This is a vital question, for if we were sure of the adequacy of resources at the disposal of the local bodies; if they were capable of being utilised immediately and not in the distant future, the power of taxation conferred by the Acts of 1919 and 1921 on local bodies would be most useful indeed; nor there would be any fear of our educational programmes falling through. But I believe it will be found that the people of India are taxed in proportion to their capacity; that so far as this province is concerned, we pay the same proportion of taxes to the State as is paid by any other province in India, or, for the matter of that, England. Mr. Gokhale instituted an elaborate comparison between the taxable capacity of the people of India and those of other countries, and he came to the conclusion that we were as heavily taxed in proportion to our resources as the people of any European country. That this calculation is correct so far as the period before the War is concerned, will be admitted by any

one who has pondered over the subject. If this is granted, it follows that so far as local authorities are concerned, the question of realising a large, an appreciable sum, out of the proceeds of an educational cess that may be levied by a local authority, is out of the question. The financial condition of the municipal boards and district boards is so precarious that it would be the height of folly on our part to expect them to organise a comprehensive scheme of free, compulsory education within their areas, and to pay half of the cost of the scheme. Let me quote a sentence from the Report on Municipal Administration and Finances in the United Provinces for 1922: "With few exceptions, the financial position of the boards can only be described as precarious, and as remarked by the Commissioner of Meerut, the outstanding feature which runs through nearly all the annual budgets is the steady depletion of balances, and the ever increasing disparity between income and expenditure." The district boards are in a far worse position. Indeed, a large number of local bodies are nearly bankrupt, and cannot under any circumstances undertake grave responsibility of organising free education within their areas. The total income of 85 municipal boards amounted to 126·5 lakhs, and their expenditure to 148 lakhs. The debts incurred by some of the boards are enormous. In fact, the resources of the boards are not sufficient to enable them to work up to modern standards of administration. This was said by the Government of India in connection with Mr. Gokhale's resolution, and nothing has happened in the interval to modify the statement. True, they have given the right to impose taxes. This would be most useful indeed if we were assured of three things: (I) First, is there a margin for local taxation?—my own impression is that the local bodies are not likely to realise a large amount for some time to come; (II) secondly, what is the extent of the margin? and

(III) thirdly, can the margin be utilised at once? As a matter of fact, Sir John Jenkins admitted, on behalf of the Government of India, that if local self-government in this country was to be a success, the resources of the local bodies ought to be increased; while Sir James Meston, then a member of the Government of India, added that there must be quinquennial settlements by the Provincial Government as to the additional revenue that should be allotted to these bodies. Indeed, to anyone who has studied the question, it seems surprising that the question of the margin of taxation, and the extent of its utilisation should be mooted at a time when ever increasing burdens are being heaped on the devoted heads of the local bodies. If there had been a margin, it would have been utilised by the local authorities long ago.

Resources of Local bodies in other countries.

No scheme of education is likely to be successful until the question of the resources of the local bodies is exhaustively discussed. The mere passing of a Compulsory Education Act is futile without the consideration of the means to carry it into execution. In America, the local authorities have independent revenues of their own, and they also enjoy comparative freedom from state control. Moreover, the distribution of surplus revenue and land from the national domain for the purpose of education has given a great impetus to educational progress. In 1837, the United States distributed to the various states over 28 millions of dollars from its large surplus in the National Treasury, the interest on which was largely to be used for schools. This, together with the proceeds from the sale of state-lands, has resulted in large funds for the development of education. Texas has a state fund of over 65 million dollars, which will amount in time to one hundred million dollars. Minnesota's fund of 25 million dollars is increasing by a million dollars a year from royalties on mineral leases and from the sale

of timber and land. Many states are not so fortunate; but every state money is appropriated to schools from the general fund or general treasury. This does not include amounts spent by private foundations, such as (a) The Peabody Education Board with a grant of 3 million dollars; (b) The Russell Sage Foundation, with a grant of 10 million dollars; (c) The Carnegie Foundation, founded in 1906 by Mr. Carnegie; (d) and The General Education Board, founded in 1902, by the millionaire John D. Rockefeller, with an endowment of over forty million dollars."

France.

In France local bodies derive a large part of their revenue by the simple process of being permitted to add extra centimes to the taxation which the Central Government levies from four Direct Contributions. Until 1889 each commune maintained its own schools and paid the teacher's salaries, receiving large subsidies from the State and the Department. But there was so much inequality that the State took over the responsibility for stipends of primary school teachers and all Normal School expenses, except the buildings and equipment. In 1870 the State budget for primary education amounted to about 10 million francs; by 1913 it had reached the figure of 235 and a quarter francs.

Germany.

In Germany the cost of elementary education amounts to a little over seventy-five per cent of the total cost, of the middle schools to about 4 per cent, and of secondary education to nearly twenty-one per cent. The inequality is still further intensified by a comparison of the per capita cost for each pupil in the three institutions. The cost per pupil in the elementary schools was 64 marks; in the middle schools 143 marks; and in the secondary schools 296 marks. These figures should be compared with

those of the United States of America. In the latter the cost of educating a child in an elementary school in 1913 was 26.17 dollars, while the per capita cost of each high-school pupil was 56.54 dollars.

Denmark.

The Danish system of taxation for school purposes is based on the principle that the entire nation is vitally interested in the education of every individual in the kingdom. The rural schools are maintained (1) by State aid,—this is most generous; (2) permanent school funds; the general purpose of these funds is to equalise educational opportunities by rendering aid to the several communes according to needs; and by (3) local taxation.

Japan.

Since the passing of the compulsory education law, the percentage of school attendance has increased from 59 in 1893 to 82 in 1900, and 96 in 1906. The actual number of children attending elementary schools was 3½ millions in 1893, 4¾ millions in 1900, and 5¼ millions in 1906. The expenditure on elementary education has increased from about 1¼ million pounds sterling in 1898, to £33,000,000 in 1906.

England.

I have already given statistics of expenditure on education in England. There is one point, however, which needs emphasis, and it is this that certain revenues were made over to local authorities in 1889. In addition, they derive a large part of their revenue from rates, and, finally, receive generous grants from the Exchequer. That the Central Government helped them generously during the War was admitted by Mr. Fisher. One instance will suffice. In England, in 1909, local bodies raised about 70 million

pounds, and received in that year grants that amounted altogether to 98 million pounds out of a total of 200 million pounds. Thus the total of £200 was practically divided half and half between the Central Government and the local bodies. In France, out of 158 millions, 95 millions represented the expenditure of the State for central purposes, and 58 millions for local purposes. The proportion is $\frac{2}{5}$ for the Local and $\frac{3}{5}$ for the Central Government.

Need for an Inquiry.

The above figures will show conclusively that the question of the introduction of compulsory free education is complicated by important political and economic factors, and that it is necessary to inquire, and inquire carefully, into five points: (1) Whether the present distribution of taxation between the local bodies and the Provincial Government is equitable? (2) Is it possible to assign any revenues to local bodies, as is done in England? (3) Whether there is any margin for additional local taxation? (4) What is the extent of this margin? (5) Finally, can this margin be utilised at once?

The financial question is the pivot on which all schemes of education revolve, and it will be the height of folly to try to elaborate a system of free, elementary education, without considering the numerous factors that complicate the problem. It was for this reason that I asked the local Government on April 3, 1924, to form a committee to go into the whole question of finance, grants-in-aid, and so on. The reply of the Director of Public Instruction was, I must confess, disappointing. It held out no hope of any rapid advance; it gave no promise of a thorough inquiry, and it damped the enthusiasm of a number of educationists. However, this is a point which concerns the welfare not of one person or two, but of fifty millions of a sturdy people, imbued with the noblest ideals, and trained by centuries of beneficent customs,

and they will, I am sure, see to it that the ideal of free, elementary education is realised, and realised in the near future.

The principles underlying the system of grant-in-aid.

The next important point that needs our attention is the modification of the grant system in operation, and a change in the relation of the Department to the local authorities. The rigid system of grants has proved a serious bar to the growth of education in the districts. It generally takes little or no account of the backward state of a particular district, but grants block grants, irrespective of the needs of the locality. That it is impossible to develop primary education in its initial stages by this means was demonstrated clearly during the War, when, according to Mr. Fisher, the whole of the educational system of Great Britain would have been ruined but for the generous help afforded by the Exchequer to the backward and poor local education authorities. The efficacy of this plan will be testified to by all who have studied the history of elementary education in Europe during the last 70 years; and a striking testimony to its utility has been furnished by the Bombay Presidency. There 65·7 per cent of the total expenditure on primary education was contributed, during the quinquennium, 1918-22, from Provincial funds, and only 3·9 per cent from Local funds. Of the Provincial contribution, 17·4 per cent represents grants to municipalities, 76 per cent grants to District Boards, and 4·6 per cent grants to schools under private management. At present Government contribute 90·5 per cent of the cost of District Local Board schools, and 40 per cent of the cost of Municipal Schools. To sum up, some 70 per cent of the expenditure of the Bombay Government is for Primary Education.

Need for clear enunciation of policy regarding the proportion of expenditure on elementary education to that on other types of education.

The next important problem to which we must direct our attention is the enunciation of a principle whereby the

proportion of expenditure on elementary education to secondary and higher education may be equitably determined. Between 1920-21 and 1923-24, the increase of expenditure on University education was Rs. 11,24,000, or an annual average of Rs. 2,81,000. During the same period the increase of expenditure upon secondary education rose from Rs. 30,55,000 to Rs. 43,14,000, that is Rs. 12,59,000, or an annual average of Rs. 3,14,750. The expenditure on University education was 16·7 per cent of the total expenditure on education, whereas the proportion of the expenditure on secondary education was 26·27 per cent. Upon primary education, only 43·9 per cent of the total expenditure on education was incurred. Such a glaring inequality between the two items of expenditure will be difficult to find in any civilised country. Even in Germany, at least 70 per cent—it was as high as 89·7 per cent in 1911—of the total expenditure on education was incurred on primary education. Such a scandalous distribution of the revenue of the State, derived, be it noted, mainly from the miserable pittance, and the hard-won earnings, of the cultivator, calls for the strictest inquiry, and we shall be failing in our duty if we do not try to remove this glaring disparity.

**Wanted a better type of officer for the organisation
of Mass Education.**

I do not wish to deal with the other problems of elementary education in detail, and shall only refer to two points of importance. I do not know on what principles text-books for primary schools are prepared, but if the Department had the imagination or the curiosity to inquire they would have found out that the early educational reformers regarded suitable text-books as absolutely essential to the success of mass education. There is urgent need of a thorough revision of the text-books. The Inspectorate too, needs overhauling. We need more Inspectors, and better Inspectors. The problems of elementary education are so multifarious, that

it is physically impossible for a Divisional Inspector of schools to develop elementary education within his Division. The staff at his disposal is too limited to enable him effectively to exercise supervision over districts whose combined population may exceed eight millions; while his responsibility for secondary education within his extensive jurisdiction prevents him from devoting that time and special knowledge to the study of the needs of each district which are so absolutely essential to the success of a new movement. We may not agree with the views of Fichte and other German enthusiasts of the early part of the nineteenth century that primary education would eradicate prejudice and ignorance, for the course of history since their time has proved a bitter commentary on these dreams; but nobody can deny the force of their suggestion that it was only by the introduction of such a system of education that the masses could be roused from their passive indolence, and formed into personalities, intellectually and morally independent. To kindle this holy fire of knowledge, to fan the latent powers of our race into flame, we need a band of men who are inspired by a zeal for lighting the torch of Truth in this land of ours. In this, the Department should take a lesson from the history of the inspectorate in England, and appoint thoroughly trained district inspectors, and divisional inspectors of elementary schools in larger numbers than ever.

A committee suggested.

I will end this part of my address by suggesting the appointment of a committee on the lines of the committee appointed by the Bombay Government in 1921. It will

- (1) Consider and report on the desirability and practicability of introducing free and compulsory education in the rural areas of the province;
- (2) Suggest new sources of taxation to meet the cost of such a measure;

- (3) Make detailed proposals for any legislative and administrative measures necessary for the purpose, including the machinery required to carry out any such measure;
- (4) Submit a definite programme showing the various steps which should be successively taken, so that a complete system of free and compulsory education may be introduced within a definite period;
- (5) Consider and report on any other matters germane to this question.

The arguments in favour of a committee are so overwhelming that I am astonished the Government should have refused my reasonable request in the Legislative Council. The Board of Vernacular Education cannot perform the functions of a genuine representative committee, one of whose most important tasks will be the taking of oral evidence at all the important districts of this province. This was the procedure employed by the committee appointed by the Bombay Government, and this ought to be the method here also. Nor can the proposed Board of Vernacular Education discuss the supremely important questions of the incidence of taxation, and the financial relation of the local bodies to the provincial Government. Mr. Gokhale calculated that if we continue to proceed at the rate we are moving, it will take 115 years for India to see every boy of school-going age at school, and 665 years to see every girl of school-going age at school.

The Secondary Schools—their Rigidity.

The progress of secondary schools during the period has been unusually rapid, and the reports of the Director of Public Instruction supply instructive figures. The number of Intermediate Colleges increased from 3 to 12, and the total number of educational institutions maintaining

Intermediate classes was 23, of which 8 were Government Colleges, 14 aided and 1 unaided with a total enrolment of 2,514 students. That the tutorial work of a number of these colleges was unsatisfactory is admitted by the Department. One feature that strikes an observer is their soulless uniformity. Their organisation, methods of instruction, and the aim that inspires the work of the staff, the daily routine, the methods of study, and the ambitions of the scholars differ very little, whether the institution is an Islamia School on the Frontier, or a Government High School in Madras. Let me quote the following remark of Mr. Sanderson, an Inspector of Schools in the Punjab. 'A first tour of the Lahore division after an interval of five years, revealed an amazing rigidity in the class-room. Take for example English. In a majority of schools the method of teaching and even the actual words show no change in that time. If one visits a certain class at a certain time of the year, one finds the same sentence being taught in the same way with the same emphasis and with the same mispronunciation.'

**The differences between the Indian High School
and the English Public School. Contrast in
their aims and methods.**

Herein lies the essential difference between the English Public School and the Indian High School. In the former case, the life of the school is not dominated by the formal course of study, much less darkened by the shadow of a coming examination. As the Punjab Report puts it, "It is the dread of this examination that darkens the clouds of the horizon of boys during their whole school career. What should be the happiest period in life (and is so in other countries where fortunate conditions prevail) becomes a time of drudgery and of overstrain." The Report of the Sadler Commission is conclusive on this

point: "Except in a few cases the schools think only of the Matriculation. They make it, and it alone, their aim. They are driven to do so because the boys and their parents feel that in the present conditions of life in Bengal, success in passing this examination is the one essential reason for going through the high school course." Thus the aim of the schools is more and more narrowly fixed upon an examination. But an examination can take account only of a part of what a secondary school does. It can not take account of the moral qualities of the students, qualities to the development of which supreme importance is rightly attached in English Schools; it ignores the æsthetic qualities that are such an indispensable element of a rational system of education, and it sets aside the social qualities which are really the deciding factors in the struggle for existence. What does it emphasise, then? Why, intelligence, not of the wider and broader type, resulting from the harmonious combination of instinct, emotion and will, but of the narrow, limited variety, expressing itself in a capacity for memorising by rote sentences of whose meaning the educand is no more conscious than he is of the meaning of a Greek sentence.

**Comparison of the life of the Indian School
and the Public School.**

Our Indian students, alas! have no green fields and trees, no blossoming orchards, to teach them the tender suggestiveness, the heroic poetry of a joyous and free life. Brooding over the dull, meaningless text-book, he makes his spirit strong in solitude by the companionship with everlasting thoughts. Compare this picture with that of a number of public schools I have seen in England. The unity of their work is derived from the effect of light and atmosphere, the unbreathed soul of tremulous and throbbing life which bathes and liquefies the whole. That cord of jocund colour which may fitly be compared with the smiles

of daylight, the clear blues found in laughing eyes, the pinks that tinge the cheeks of early youth, and the warm yet silvery lines of healthy flesh mingle, as in a pearl shell. There is no perplexity, no division of interests. They are fascinated by no insoluble mystery, and absorbed by no seductive problems. Their artistic purpose and power are exactly balanced, adequate and mutually supporting. They know by intuition what to do, and do it without let or hindrance. Thought, passion, emotion become in them one living melody. Thomas Arnold summed up the characteristic features of the Public School when he said that it should be first of all a place for the formation of character, and next a place for learning and study, as a means for the attainment of this high end. Discipline and guidance were in his view still more permanently the business of a school master than the communication of knowledge. The main condition on which the incidental attainment of this object was possible was that the community should be *au fond* pervaded with the spirit of work, and that the proper business of a good school, the production of exact and accomplished scholars, should be thoroughly well fulfilled.

Lack of synthesis in Indian secondary schools.

The Indian schools, it is felt, fail in the formation of character. There is no spiritual life which touches a boy's inner nature, no corporate unity which sustains and appeals to his affectionate loyalty, no moral or intellectual flame which may kindle his nature. There are admirable exceptions, but these throw into darker contrast the shortcomings of the rest. Our boys work assiduously—often too assiduously. School hours are long—often too long; and the schools are occupied with purveying certain kinds of knowledge—but within too narrow a range. Secondary schools teach subjects, but offer no synthesis of knowledge, communicate no nucleus of unifying thought. As the Sadler Commission put it: "It is dull, not so much because it is poor in material

resources, as because it is poor in ideas." There is undoubtedly a lack of inspiring unity in their intellectual aim. Why? Because the mass of new knowledge which now claims a place in schemes of education has not yet found a synthesis. It has not been unified intellectually. Still less has it been co-ordinated with our spiritual belief. And this dislocation between different spheres of our activity, and their mal-adjustment to our emotional and æsthetic experience result in a lack of those simple, authoritative generalisations which compel acceptance, touch every side of human experience, and are the groundwork of definite teaching in primary and secondary schools.

The need now experienced in the secondary education affects not India alone, but the whole world. In other countries, however, an ancient spiritual tradition, interwoven with the work and teaching of schools, supplies something which serves, however imperfectly, as a basis of moral unity in education. Indeed, the spiritual and moral tradition holds so firm a place in school life and in school practice, and has such influence over conduct that the lack of intellectual unity is less clearly perceived, and "the forces which form character continue strong, though they are weak in grappling with many of the problems which challenge us in the tasks of modern life."

Need for the organisation of our educational ideals.

It is, no doubt, true that in schools which serve a nation there can be only approximate unity in intellectual outlook; at all times the process of mental and ethical adjustment is going on, and in a school community, if its various activities are encouraged and recognised, there is a steadying force which gives moral unity to the whole and weaves diverse temperaments into the texture of corporate life. But in India a school is thought of merely as a place of instruction. Its possibilities as a society are overlooked. The dominating idea of Dr.

Arnold's life was that a headmaster is called of God to make his school a Christian school—an idea which has been steadfastly held by an overwhelming number of English school-masters. This idea pervades not only his chapel sermons but all the activities of his life. In his lessons, his study of history, his discipline, his exhortations addressed to the Sixth Form, and to the whole school, and his dealings with individual boys, he is felt to be always striving to infuse into the common life his own enthusiasm of Christian earnestness, and to stimulate the growth of public spirit and moral thoughtfulness. It is this lack of a conception of ends, of an ideal of education, that has proved a source of trouble to India. We have, indeed, had, and now more passionately than ever cherish, ideals, many of which England has never known. But the ends of the public schools have been co-ordinated, unified. They have known more clearly and exactly than we what they wanted from Science and Art, and they have seen to it that there should be a supply of men prepared by their general as well as by their special training to supply what was asked of them—*viz.*, their contribution to a system of ends, to a conception of state.

The organisation of German education. Its principles.

The potency of German education, as of German civilisation, has been its organisation. Organisation means the embodiment of a creed, unifying a community by expressing the common meaning of its members. It is easier to win allegiance to a narrow interpretation of the needs and desires of a society or a party, than to secure loyalty to ideas which have not yet established among themselves a vivid relationship, expressed in a form at once clear and elastic. And this was the cause of the power of Germany. She knew her own mind; she was mistress of her own resources, and ordered them to be clearly seen, though for an unspiritual end. Organisation for her has represented

the focussing, in all departments of life, of her varied energies upon the maintenance and enlargement of that life. We, on the other hand, have not yet been persuaded that education is a part of national life, inseparable from the other parts, affecting them and influenced by them; and within the loosely determined province which we call education, we have not yet achieved and scarcely attempted a systematisation of our conception of the ends of education. No more practical utterance upon the present purpose could be found than a sentence of Professor Burnet, in his *Greek Philosophy from Thales to Plato*: "We find that every serious attempt to grapple with the problem of reality brings with it a great advance in positive science, and that this has always ceased to flourish when interest in that direction was weak." Let me quote a sentence from another philosopher. Professor L. T. Hobhouse says in his *Theory of Knowledge*: "The world of thought at the present day is in a somewhat anomalous condition. We have come to the point where science seems to stand in real danger of being ruined by her own success. The mass of accumulated fact in which she justly prides herself has become too vast for any single mind to master. Year by year it becomes more difficult to take any sort of view of the whole field of knowledge which should be at once comprehensive and accurate. It results that positive knowledge can scarcely be said any longer to have a general purpose or tendency. Intellectually it is an age of detail. An age of detail is an age without belief, and belief is the vitalising source and mainspring of organisation." If it is easier for a camel to pass through the eye of a needle than for a rich man to enter into the kingdom of heaven, the reason may be that the camel is, after all, one camel, and the rich man, playing many different roles, being many persons, may fail to achieve that oneness which we call personality. There is so much of him that at last there have come to be many of them.

This is just what has befallen Indian education. There is so much of it that there have come to be many of it; so much knowledge that we have set up many knowledges. We have named them, labelled them, departmentalised them, and taken the soul out of them. In fact, it is only in some group of schools confined to a section of the community, or more rarely, when an educational movement has expressed a transient unity of some dominant school of thought, that intellectual activities have been worked into a semblance of unity, focussed with an attempt at consistency upon a theory of conduct.

Have the recommendations of the Sadler Commission been carried out?

The question naturally arises whether these defects have been removed by the application of the principles of the Report of the Sadler Commission. Before, however, we discuss the question of the application of the principles of the Sadler Commission, it would be useful if I give my view of its work. I have pondered deeply over the twelve volumes of this Commission; I have discussed it with a number of teachers in Madras, Bengal, the Punjab and the United Provinces. I have had opportunities of discussing it with Sir Michael Sadler himself, in England. I have, as a result of my inquiries, come to the conclusion that this province made a serious blunder by adopting the recommendations of the Commission *in toto*. It made a greater blunder by trying to carry them out with unnecessary haste, when the people had neither the time to digest the material, nor the opportunity to discuss it with that thoroughness and care which the gravity of the problem demanded. The recommendations of the Commission were framed with a view specially to reform the system of secondary and university education in Bengal; and the Commissioners devoted—and devoted rightly—a

large amount of their time to the collection of material relating to that province. Indeed, nobody was more astonished than Sir Michael Sadler himself at the reception given to his report in these provinces. There is a Spanish proverb which says that a mother-in-law tries to teach good manners to her daughter-in-law by beating her daughter, and this proverb was exemplified in this province, under the vigorous *rule* of the late Governor. Inspired, no doubt, with the best of motives, and guided by the lofty purpose of reconstructing secondary and higher education, the Government launched a highly controversial scheme of education, without realising either the financial or the educational consequences of these measures. Let me quote the following from the speech of Dr. Ziauddin Ahmad, who was a member of the Sadler Commission, in the Legislative Council on January 29th, 1924. "There is a very important mistake which we all made, and I should include in it bodies of other universities,—and it is this that, while applying the recommendations of the Calcutta University Commission to these provinces, we never considered whenever the recommendations were applicable to these provinces. The recommendations were made explicitly for Bengal. It was the Calcutta University Commission, and not an All-India Universities Commission. The Calcutta University Commission made recommendations which were applicable to Calcutta University (only), and the reasons on account which they made the recommendations were outlined in the first volume. Nobody ever took the trouble to read the reasons on which those recommendations were based. Everybody rushed to the conclusions, and applied them indiscriminately, without fully discussing the circumstances in our provinces." This speech brings out clearly enough the vital point that the members of the Commission never intended that their recommendations should be applied *en bloc* to another province, without serious and substantial

modifications. Yet the zeal and energy of our Government outstripped its usual prudence, and changes of far-reaching magnitude were introduced at a time when the country was by no means prosperous, in a manner that was distasteful alike to the trained administrator and to the veteran educationist, at a pace that rivalled the reforming zeal of a Pestalozzi or a Froebel, and threatened to eclipse the glorious achievements of America in the domain of education. Has anybody witnessed such a feverish activity, consuming the energy of a host of Departments, rousing the lethargic teachers out of their dogmatic slumber, and "reconstructing education" from the gutter to the University?

The principles of the Sadler Commission.

Gentlemen, it is not necessary for me to give the principles of the Sadler Commission Report in detail, as they have been so frequently discussed in the Council, the press, and the platform that all the educationists know them, or are at least supposed to know them.

The Commission laid special stress on the necessity of preparing students for admission to the University.

As they put it, "the colleges have to deal with large numbers of students insufficiently prepared for the methods and standard of University work. A considerable proportion of the candidates who pass the matriculation and enter colleges are not ready for University teaching. In order to take advantage of what the University can offer they should have a more thorough command of English, should possess a wider range of knowledge, and should be maturer in character and judgment." They rightly emphasised the need of the physical side of education, and stated that "secondary and higher education in Bengal would be a much greater boon to the community if improvements were made in conditions of school life." The examinations came in for severe comments, and the Commission

remarked that "their effects upon the spirit and tone of University life and studies are unsuitable."

Examination of the proposals of the Commission.

One of the fundamental propositions of the Commission stated in unmistakable terms that the standard of university education could be raised only if the students were thoroughly prepared in the school, and could profit by University instruction. The College authorities were totally dissatisfied with the product of such schools, and frankly saw that the intake from them was of such poor quality that little could be made of it without a long preliminary drill. For this purpose it was necessary that the work done in the intermediate classes of the University should be transferred to institutions of a new type, to be known as intermediate colleges, to be organised and conducted according to the methods appropriate for school work, to be distributed over every part of the province, and to be placed under the same general direction as the High English school. This was regarded necessary, as (1) a means of providing more adequate preparation for University work for those of the students in the intermediate classes who will proceed to degree courses; (2) secondly, it was still more necessary to meet the needs of those who will go no further than the intermediate stage, and who require more carefully differentiated courses of study than are now offered to them; (3) lastly, as the best practical means of relieving congestion caused by the crowding of young and immature students into Calcutta, and of helping to mitigate the evils and dangers which result from this. They regarded a three years' course for the B. A. Pass or Honours Degree in the University as desirable for success of their schemes. They remarked that "it seems to be the experience of most Universities that a generous and well-balanced scheme of training in the arts or the sciences cannot well be fitted into a shorter period than three years; and if this course of study is to be treated

as a single whole, and if the student is to have the advantage of being helped by students who know him intimately, it must be obvious that it ought normally be followed throughout in the same institution, and under the same guidance". The Commission seemed to have ignored the important fact that if the duration of the B. A. Pass Degree were two years only, it will not develop those powers of mental discipline, co-operative social activity and social culture which is the object of a University to inculcate.

Effects of the establishment of Intermediate Colleges on University Standards.

The University teachers are generally of the opinion that the influence of the University on the development of the character of a student who resides only for two academic years, or barely eighteen calendar months, will be reduced to such an extent as to nullify all the advantages which a system of residential, unitary teaching University confers. This is indeed one of the most serious aspects of a problem, and, if the theory of a two year Degree Course is pushed to its logical conclusion, we shall have a large number of immature and undisciplined graduates, whose University training will be a source of pride neither to the University, nor to their parents. Moreover, the transfer of intermediate classes to the school is likely to lower the standard of University education. There are undoubtedly a large number of Intermediate Colleges whose staff compares favourably with that of any second and even a first grade college, and whose equipment and the facilities they provide for their students are superior to those of the Colleges affiliated to the Allahabad University. But it cannot be denied that this change is likely to bring the level of the XI and XIIth classes of the Intermediate college *down* to that of the lower forms of the College. This

fear is expressed by a large number of College teachers, and I am distinctly of the opinion that there is considerable ground for anxiety. I believe that secondary and University education are so intimately connected, that a rigid organisation of secondary education will prove fatal to the interests of higher education in these provinces. The disappearance of the old college has left a gap in the corporate life of our University that is not likely to be filled by the newly created University Departments; and the shortening of their period of stay in the University from four to two academic years, or in other words, actually to eighteen months, has completed the process of its dismemberment. That these effects were foreseen by the framers of the Report will not be denied by the close student of that Report but the fact remains that the University standard of instruction, and that atmosphere of University which can be absorbed only by one who makes a reasonably long stay in the University, have been seriously affected by these changes. In fact, the object of the Commission has been defeated and, instead of the Intermediate classes bringing the lower forms of the College *up* to their level, and generally vitalising them, there is considerable evidence that they will be—in some cases, they have actually been—dragged *down* to the level of the lower classes. This, combined with the fact that the Degree course is only of 2 years' duration, and the fact that the corporate life of the old College has been replaced by the soulless, mechanical and purely intellectual life of a Department, will produce disastrous effects on higher education in this province. Signs are not wanting that a reaction has set in, and University teachers have begun to notice the effects of this change. It seems to me to be absurd to suppose that the mere fact of the institution of Intermediate Colleges is sufficient to raise the standard of our University instruction. Any one who possesses intimate knowledge of the mechanism of modern

Universities will tell you that, so far as the University is concerned, it makes absolutely no difference to it whether a student comes to it from the Intermediate classes of an Associated College, or the Intermediate classes of an Intermediate College. So far as courses of study for the third year Arts and Science are concerned, they are exactly the same for both types of students. But a student who has had the advantage of receiving his instruction in an Associated College is better fitted to follow the third year course than one whose teaching has been confined to the four walls of the new Colleges. Hence, the standard of University instruction is not raised by it. In fact, as pointed out by me above, there is actually a deterioration.

**The Associated Colleges are very keen on keeping their
Intermediate Classes.**

Another important fact that was ignored by the framers of the Intermediate Education Act was the importance of the Intermediate classes to the Associated Colleges. Every College has been severely hit by the provision whereby all Intermediate classes will be completely separated from the College at the end of five years. These classes are really the mainstay of all the colleges, and it is through the support afforded by the Intermediate classes that the undergraduate and post-graduate classes of a College are maintained. Nearly every principal of an Associated College will inform you that if the Intermediate classes are taken away, there will be absolutely no likelihood of his College progressing. I may go further, and say that the College authorities are unanimously of the opinion that the separation of Intermediate classes from their Colleges will spell ruin. Indeed, there are signs that the policy of the Government with regard to the maintenance of Intermediate classes will be considerably modified. The Agra University Committee is likely to reconsider the whole question of the relation of the Associated Colleges

to their Intermediate classes. I am strongly of the opinion that in the matter of secondary education, we have acted precipitately, and have not properly considered its relation to university education on the one hand, and elementary education on the other. Signs are not wanting that the question of Intermediate Colleges will be re-opened, and their relation to the Universities re-examined in the light of the experience we have gained of their working.

The mistake of the Government consisted in the fact that they relied too much on the efficacy of organisation. Now, I do not think there is anybody who is opposed to organisation as such. To me it is unthinkable that a person should actually oppose scientific, rational organisation. But it must be an organisation with a purpose, an end; it must imply an ideal to be realised, and, most important of all, it must train and keep up a supply of capable and efficient men who are to make the organisation a success. But our strange faith in a mere change of system, our supreme ignorance of the elementary rule that you must have men who are inspired by a zeal for the cause—men whose enthusiasm for their ideal is equalled only by their discipline,—and our habit of always waiting like Mr. Micawber for ‘something to turn up,’ are responsible for the grave defects in the system. When the plan of Intermediate education was formulated by the Sadler Commission, they might have felt themselves to be in the position of Joshua crossing into the Promised Land. They needed to “be strong and of good courage.” Such was the demand that the people of Israel made, and such was the demand of the Indian people in the sphere of education. “Be thou strong and very courageous,” was the call of our day when we, too, were moving out of the wilderness into a new world. To-day it is no longer a vision from Mount Nebo, but part of a practical plan of campaign which needs a highly trained staff of commanders in the field to carry out.

The emphasis on organisation has most unfortunately obscured the need for a great reform in the methods of teaching. The systematic training of those who intend to become teachers has changed the character of the educational system in many other countries. It is capable of rendering the same service to this Province.

Researches in Education.

The training of teachers should be placed on a firmer basis, and investigations should be conducted into important problems of school teaching. To any one who has undergone a post-graduate course in education in England or America, it is a matter of constant surprise to find that theories which have been applied in innumerable cases, and investigations that are known in every Training College in Europe, remain either unknown or unutilised in India. By clause 23 of the Education Act, a local education authority in England can give aid to teachers and to students who wish to prosecute research, with a view to promoting the efficiency of teaching; but the Indian teacher is rarely given an opportunity to step out of his class-room, and take a detached view of his experience in the light of the work of other colleagues, or the latest contributions of educational science. Even a teacher who has been trained is presumed to have been equipped for all time. The position of the advanced study of education in the United States and European countries is striking by contrast. Indeed, the charge is sometimes made in America that so much attention is given to the study of the science of education, methods of teaching, and administration of the educational machinery, that there is danger of neglecting the subject-matter to be taught. The most common agencies for the training of teachers in service are the teachers' institutes, and teachers' conferences. The meetings last from two to five days, and attendance is compulsory without loss of

salary, and in many cases with payment of *per diem* compensation. These provisions are supplemented by Summer Schools, and post-graduate courses in education. An American fellow-student of mine, Dr. Douglas Waples, who was Professor of Education in Tufts College, Massachusetts, and is now, I believe, Professor of Education in Philadelphia University, has described lucidly the function of the Summer Schools in the American system. The Summer Schools there are organised with great thoroughness, and there are very few teachers indeed who do not come back refreshed. In most cases, attendance at these schools is voluntary, but recently the practice has developed of indirectly encouraging teachers to attend by promotions or increases of salary; in a few cases special bonuses are offered for attendance. The most remarkable expression of interest in educational research is to be found in the magnificent Teachers' Colleges attached to the Departments of American Universities. The Teachers' College, Columbia University, has become the Mecca of educational investigators, and contains by far the most brilliant staff in the world. The significance of these post-graduate Colleges of education does not rest merely in the facilities that they offer to the students, nor in the research conducted by them, but rather in their close and intimate contact with the course of education day by day. During the past decade relations between the staff of Teachers' Colleges and local education authorities have grown more intimate in the more frequent conduct of special inquiries or surveys of school systems—city, county and state—by professors of education, and other specialists. The nearest analogies to English education are the inquiries conducted by Sir Michael Sadler in a few English counties. These surveys have dealt in whole or in part with the organisation and administration of local educational system, its cost and adequacy, the school equipment and school hygiene, the

courses of study, the teaching staff in relation to training and salary, and the methods of training and progress of pupils. One recent survey was limited to the development of a school building programme; another to the school finances; still others have investigated the provision of higher education in several counties. Moreover, the development of educational tests and scales for measuring school achievements on a quantitative rather than a qualitative basis has greatly facilitated investigations by replacing opinion with fact. The technique of the scales and tests was perfected by Professor Thorndike, of Teachers' College, Columbia University, and there are now tests in Algebra, Arithmetic, Reading, Drawing, English Composition and Grammar, Geography, History and a number of foreign languages. The tests serve to measure not only the standard of attainment of pupils and the suitability of certain studies to their ages and capacities, but the quality of teaching, and the relative position of schools and school systems.

A Lesson to India.

The brief account given above indicates what a fertile field remains to be worked in India. We enjoy unique opportunities of investigation, and our inquiries, if they are rightly directed and carefully planned, will, I am convinced, prove of the highest value to the student of education. What we need is a strong Faculty of Education, separate altogether from the Government Training Colleges containing on its staff graduates who have been trained at Teachers' College, Columbia University, or in the London Day Training College. The need for a Research Department of Education is all the greater, as this province has taken the lead in the movement for educational reconstruction, and needs the expert advice of a body of people who have devoted their lives to the investigation of such

problems. The Faculty should be attached to a University, and should be completely free from Government control. It could organise educational surveys in this province, and collect data that are absolutely essential to the organisation of a system of free, elementary education. It could synthesise the activities of the Department of Education and formulate a policy that will be consistent in its aim. We are so burdened by various educational bodies, with independent powers, that there is a real danger of our activities being frittered away either in mutual wranglings, or squandered on badly conceived and badly prepared schemes. The need for educational research is more pressing to-day than it was before the War, and I hope adequate facilities will now be afforded to the teachers for its prosecution.

Gentlemen, I will conclude my survey of secondary education by pointing out the necessity of the reconsideration of the relation of the Intermediate Colleges to university and primary education. To me it is a fact of the utmost significance that the Government have agreed to the appointment of the Agra University Committee. This may lead to the reconsideration of the entire system of secondary and university education, or it may not; but one thing is plain, and it is this, that the present position of secondary education cannot be maintained for a long time. It needs close and careful scrutiny; it demands vigilant care on the part of those who are keenly desirous of expanding primary education, and are as keen on maintaining the standard of our University education. You can no more separate secondary education from other types of instruction, than you can separate ether from space. This seems to me to have been the fundamental mistake of the Sadler Commission. They constructed an admirable framework for secondary education; they elaborated excellent schemes for the reform and reorganisation of University education; and they formulated proposals for the administration of

education that have exercised, and will continue to exercise, profound influence on the educational policy of India. No praise could be too high, no reward too great, for that work of devotion and zeal.

The Middle Class. Its place in New India.

But they entirely ignored the importance of elementary education in democratic India. It is no doubt true that they were sent to report and make recommendations on University education in Bengal; but their elaborate reports and recommendations on secondary education did not come within their terms of reference. It may be admitted that the question of university education could not be discussed apart from that of secondary education; but by the same process of reasoning it follows that the question of secondary education was not really susceptible of solution until a thorough inquiry had been made into the problems of elementary education. Their investigations into secondary education logically involved inquiry into elementary education, for the two are organically connected, and it is only by a process of imagination, or force of tradition, that we can separate the two. Yet, the imposing edifice erected by the patient labour of the Commissioners crumbles to pieces when the innumerable, complex and intensely important problems of elementary education are studied. That they should have remained oblivious of its importance at a time when India was marching on the road to freedom can be explained only on the hypothesis that they were distrustful of the effects of elementary education on the Indian masses. Indeed, their policy comes out in the following unguarded sentence: "A general system of primary education, if it were wisely adapted to the real needs of life and livelihood, *and were not merely thrown like an explosive into the vast magazine of Indian life*, might be welcomed without reserve". Compare this conception of the function of

education in a civilised state with that held and developed in America or Germany.

The Masses.

The famous French writer La Bruyère gave the following account of the French peasant in 1689: "Certain savage-looking beings, male and female, are seen in the country, black, livid and sunburnt, and belonging to the soil which they dig and grub with invincible stubbornness. They seem capable of articulation, and when they stand erect, they display human lineaments. *They are, in fact, men.* They retire at night into their dens where they live on black bread, water and roots. They spare other human beings the trouble of sowing, ploughing, and harvesting, and thus should not be in want of bread they have planted." This account of the French peasant may be applied, *mutatis mutandis* to that of the Indian peasant. Examine the returns of prices; compare the cost of the barest necessities of life; discuss with the peasant the hardships to which he is subjected, and you will find the depth of the misery of the people.

The Human Scapegoats.

In Plutarch's native town of Chaeronea, in ancient Greece, a curious ceremony was performed by the Chief Magistrate at the Town Hall, and by each householder at his own home. It was called the expulsion of hunger. "A slave was beaten with rods of the *agnus castus*, and turned out of doors with the words, 'Out with hunger, and in with wealth and health.' The custom of the scapegoat took a darker form in civilised Greece than the innocent rite over which the pious Plutarch presided. Whenever Marseilles, one of the busiest and most brilliant of Greek colonies, was ravaged by a plague, a man of the poorer classes used to offer himself as a scapegoat. For a whole year he was maintained at the public expense, being

fed on choice and pure food. At the expiry of the year he was dressed in sacred garments, decked with holy branches and led through the whole city, while prayers were uttered that all the evils of the people might fall on his head. He was then cast out of the city, or stoned to death by the people outside of the walls. The Athenians regularly maintained a number of degraded and useless beings at the public expense; and when any calamity, such as plague, drought, or famine befell the city, they sacrificed two of these outcasts as scapegoats. One of the victims was sacrificed for men; and the other for women.

We do not treat our scapegoats in the same manner as the ancient Greeks did. They are certainly never sacrificed literally; though in times of famine, there is physical sacrifice. Sacrifice of the type employed by the Greeks seems to be disapproved by modern society, though Dean Swift pointed out in his own inimitable manner other methods for the accomplishment of this end. But intellectual sacrifice there undoubtedly is, and we of the middle class ought to show our practical sympathy with the people in its tribulations, and try to raise the level of intelligence of the masses, by contributing equitably to the expenses of elementary education. For our human scapegoats are not confined to one or two persons. They are spread over the length and breadth of our land; and there is nothing before their eyes, but an endless, hopeless prospect of new flights of birds of prey and passage, with appetites continually renewing for a food that is continually wasting. Their prey is lodged in secure places, and their cries are given to seas and winds, to be blown up, in every breaking up of the moonsoon, over a remote and unhearing ocean. Will they, at the present stage of India's political development, bless the just and punctual hand that has torn the cloth from the loom, or wrested the scanty portion of rice and salt, or wrung from them the very opium in which they forget their oppressions and their oppressors.

The Middle Class.

After having vainly resisted the extension of franchise, to the working men of English cities, Robert Lowe avenged himself for his defeat by the sarcastic sally, "Now we shall have to educate our masters." This remark requires, however, another as its complement, "Now we shall have to educate ourselves," for the class above the labourers and artisans is still remarkably ignorant. Everywhere the middle class exhibits complete indifference to the public weal; everywhere, and from the outset, as soon as they have come into power, they have held aloof. Disraeli's violent and well-founded reproaches addressed, in his Young England period, to the English middle class, which had just been admitted to the parliamentary franchise, bring out this feeling vividly enough.

In India, however, the middle class has acted on a different principle. Instead of avoiding power, it has eagerly sought it. Instead of shrinking from the responsibility of office it has been foremost in demanding it.

We are informed that in ancient Rome every year on the fourteenth of March a man clad in skins was led in procession through the streets of Rome, beaten with long white rods, and driven out of the city. He was called Manurius Veturius, that is, "old Mars", and the ceremony took place on the day preceding the first full moon of the old Roman year which began on the first of March.

Matthew Arnold was fond of dividing English society into three classes—the upper or aristocratic class, the middle class, and the lower class. The first he playfully characterised as *Barbarians*, the second as *Philistines*, and the third as the *Populace*. While he recognised some compensation for the lack of ideas in the tone of manners and in the public services of the country, and some corrective for the peculiar vices of democracy in its openness of mind and accessibility to ideas, he reserved for the middle class his

severest invective and his most humorous criticism. What he said of the English middle class may, *mutatis mutandis*, be applied to ourselves. "It was full of narrowness, full of prejudices, with a defective type of religion, a narrow range of intellect and knowledge, a stunted sense of beauty, a low standard of manners, and averse, moreover, to whatever may disturb it in its vulgarity." The typical Philistine never admires or even knows what is best in literature, but only that which is flimsy and ephemeral; who likes tea parties, and Bands of Hope, and unctuous prayers, and who "has a morbid hankering after marriage with his deceased wife's sister." "Those who wait on the Lord", says Isaiah, in words not less true than they are noble, "shall renew their strength," and the Indian middle class owes to its religion not only comfort in the past, but also a vast latent store of unworn life and strength for future progress. If we are deficient in the graces, the accomplishments, and the tastes which are the product of a high and generous education, it ought at least to be remembered that the means of obtaining these were deliberately placed out of our reach.

The darker side of the picture.

There is, however, a darker side to the picture. I have already referred to the enormous disproportion between expenditure on secondary and higher education and primary education. The Legislative Council has just sanctioned the estimates of the Education Department. And what do they come to? What proportion does the expenditure on primary education bear to that on higher and secondary education? The estimate for primary education comes to, roughly, 70½ lakhs. The amount spent on University and secondary education comes to about 76 lakhs. In other words, the state spends more on University and secondary education than on elementary education. I do not say that the

amount is not needed by the Universities or secondary schools. They need as much as, and more than, they can get. But the essential duty of the state—its fundamental duty—is to provide facilities for the extension of primary education, and every citizen has a right to free education for his children in return for the heavy dues he pays to the state. This is an elementary rule of such wide application, and so deep a significance, that only the Venetian oligarchy, or the Byzantine officialdom, could perpetrate it. Yet here we are in the twentieth century, giving doles to the right, and doles to the left, and doles everywhere, and expecting free primary education to shoot up over the entire surface of this land, on some fine morning. Like tree-spirits in general, Attis, the god of creation, was thought to wield power over the fields of the earth. Our modern Attis exercises this power in a different manner, and for a different purpose.

Our attitude towards this policy.

To me, the only solution of this difficulty is a bold, and clear enunciation of a principle by the State—I hate the word Government which implies anarchy plus the policeman with a big truncheon—whereby it takes over the entire work of expanding primary education in our provinces and organises effective measures for its extension. There is reason to fear that vested interests will prove a serious obstacle to our plans. When, however, we consider the opposition which the early educational reformers encountered in England—the agitation in favour of compulsory education started in 1820, in England, and it was not till 1870 that the first Act in favour of it was passed—when we study the difficulties experienced by a host of pioneers of education in America, we may take comfort from the fact that our work is not likely to remain fruitless, for public conscience is already roused, and I can

hear faint murmurings from a class that has remained strangely inarticulate so far.

Universities.

Until the middle of the nineteenth century England had been content with two universities, mainly fed from schools founded by private enterprise and maintained out of public funds. The universities represented the land, the Church and the professions, and had not succeeded in establishing contact with the new population which had grown up in the industrial centres of the North. It was rare at that time for an Oxford or Cambridge man to go into business. There had been no University schools of engineering, of industrial chemistry, or agriculture, or metallurgy; and studies more germane to a good general education, such as economics, history, and modern literature had held a subordinate place. But great changes had come over the educational world, and the Acts of 1902 and 1918 had entirely transformed the system of education in England. Another important fact to bear in mind is that, until comparatively recent times, in opposition to the practice of America, France and Germany, the University fabric had been built upon private enterprise, and it was only the weak provincial universities that had sought state support. The ideal of University education propounded by Mr. Fisher is remarkable. From the point of view of the state, the Universities of the United Kingdom and of Ireland form a single body, furnishing a crop of workers upon whose researches, in the main, the advance of higher knowledge must depend.

The most important question at the present time is one of co-ordination of University work, and it is upon the solution of this problem that the expansion of primary education, and maintenance of our University standards depend. They could not all do everything; they should not all attempt

to do the same things. In the sphere of science at least, where the cost was highest, and expansion most rapid, there should be some differentiation of functions among universities, if men and money were not to be squandered, and if the nation were to derive the best advantage from its utility. How much should be common to all, how much peculiar to each or few, would be best left to the joint forces of tradition, local circumstances, mutual agreement and the discriminating agency of the state. As research becomes more expensive, the need for some division becomes more obvious, and the share of state-grants in bringing that about would be increasingly prominent. For some years past, English universities had been developing special lines of study suggested by local or industrial conditions, or by some accident of tradition, or of local genius. Thus the Liverpool University had specialised in tropical medicine, Leeds University in textiles, Sheffield in metallurgy, Cambridge and Reading in agriculture, while Oxford remained *par excellence* the principal centre of classical studies.

The multiplication of Universities.

The policy of multiplying universities does not in itself imply any change in the standard of University teaching, since, as pointed out by Mr. Richey, the great majority of students have in the past been wholly dependent on their college for their education, and have in fact had no relation with the University except attendance at its examinations. Provided that the new universities maintain in their courses and examinations standards at least as high as those maintained by the older institutions, then the multiplication of universities must be wholly in the interest of education and research in India. I am, of course, discussing this question, from a purely academic standpoint, and not from a financial standpoint. Financially, the multiplication of new universities is bound to affect secondary and elementary education, for

the amount earmarked for the latter will be diverted to the University account. So far, however, as advancement of research and higher studies is concerned, the multiplication of universities does not necessarily involve lowering of standard. For in Canada, with a population of 8,788,483, there were, in 1921, 23 universities with an attendance of 34,720 students, of whom 9,000 were women. In Australia which has a population of about $5\frac{1}{2}$ millions, there are half a dozen universities with total enrolment of 9,000 students. In South Africa, with a colonial population of only one and a half millions, there are four universities with some 3,000 students.

Differences in University Standards.

It cannot be denied, however, that the multiplication of universities *may*—I do not say, it necessarily does—lead to the lowering of University standards. No one would desire to see any differences recognised in the value of degrees conferred by different Indian universities. But the pressure of competition may result in the lowering of standards, and it is significant that there is already a tendency in Bihar and Orissa for students to migrate to Calcutta in the belief that the requirements of the Calcutta University are less exacting than those of Patna. I myself have met several students who have migrated from these provinces to Calcutta, and passed the examinations of the University with facility. Indeed, one could quote many examples of students who migrated from one University to the other. I am not opposed to the migration of students *per se*, as I believe the greater the exchange of teachers and students among the different universities, the better it would be for the province. Still, if migration is regular and persistent; if the percentage of passes in the University is unusually high; if the standards of the papers set and the courses prescribed are comparatively low, there seems a *prima facie* ground for supposing that the

pressure of competition has led to the lowering of standards. There may, however, be other causes at work, for the institutions of a new type of University may raise the standard of teaching to such an extent as to enable the majority of students to pass their examinations with facility. I am, therefore, opposed to laying down hard and fast rules regarding the maintenance of University standards. I believe that a University which follows the line of the least resistance, and makes its degrees as worthless as the degrees of some American universities, will be so discredited in the world of culture, and the economic value of its degree will be so slight, "that its currency will, like the German marks, or the French *assignats*, not be worth the paper it is written on. Indeed, the policy of selling cheap and nasty articles, succeeds no more in the world of commerce, than in the world of education; and it is the perception of this fact that has led to the insistence by educationists on the necessity of maintaining the highest standard in University instruction. It would be most unfortunate if in India, as in the United States of America, a degree ceased to possess any intrinsic value, and was dependent for recognition on the status and reputation of the particular University by which it had been conferred. The mischief, however, does not stop here. As Mr. Fisher put it, "the universities have stamped themselves on the conscience of the nation," and the fact that the State had become aware of the value of the University as an integral constituent of national power, acquired more and more significance, the longer it was contemplated; and if the State, which was nothing but the organised public conscience of the community, was serious about education and research, and about the place which the universities should take in the promotion of these objects, then the universities would be drawn into the movement, not so much by external force as by the suction of a great

current running through their own lives as well through the life of the nation.

Freedom of Teaching.

The lowering of University standards would paralyse research, vitally affect the secondary schools of the province, and dissolve that union between scholarship and teaching, which it is the aim of every University to foster. Freedom of teaching is the prerogative of every University; and freedom of teaching is intimately connected with intellectual freedom. "The German University," wrote Stanley Hall more than a decade ago, "is to-day the freest spot on the earth. All the old forms and laws of belief men had lived by were upturned, and every possibility of thought was explored in quest of the new, deeper more ineluctable foundations. But the most perfect liberty was never more triumphantly vindicated by its fruits than amidst all this ferment. While weak men have passed through a period of confusion, and perhaps some have grown indifferent and sterile, strong natures have only struck deeper root." It is no longer, as formerly, the function of the University teacher to hand down a body of truths established by authorities, but to search after scientific knowledge by investigation, and to teach his hearers to do the same. For the academic teacher and his hearer there can be no proscribed and no proscribed thoughts. There is only one reason for instruction; to justify the truth of one's teaching by reason and facts. There is, of course, the danger that what is untenable, strange, and absurd may also claim acceptance. Paulsen cites examples of such dangers, but India has supplied supreme examples of devotion to truth in the past, and modern Indian universities will not, I am convinced, lag behind their predecessors. For freedom and danger can not be separated, and we must be prepared to pay, and pay cheerfully, the price for

freedom of teaching. Helmholtz once pointed out how important it was that all fields of scientific research be surrounded with an atmosphere of free thought, in which alone men might have the courage to strike out new paths to new discoveries in the land of truth. He showed that Germany won the leadership in the study of organic nature, in physiology and medicine, for other reasons than the indefatigable industry of the German scholar and his strong idealistic bent. "The crucial point is that we are more fearless of the consequences of the whole truth than any other people. In England and in France, too, there are distinguished thinkers capable of working with their full strength in the spirit of the natural scientific method, but thus far they have almost always been compelled to yield to social and ecclesiastical prejudices, and have not been able to express their convictions openly, without endangering their social influence and their efficiency." This passage brings out vividly enough those qualities which made the German teaching universities the best training grounds of human intellect in the world.

The work of the University for the state.

The historian of German universities, point out that the love which the German people inspires abroad is in a great measure due to the universities. This statement is substantially correct, and the union of Germany, and with it the foundation of the German Empire, would have been impossible without the patient labour, and burning zeal of the German universities. They may, in fact, be regarded at this epoch as luminous points in the dense darkness of feudal aristocracy. The principles enunciated by Von Humboldt at the beginning of the nineteenth century are as true to-day as they were at that period. "The State should not look to the universities for anything that directly concerns its own interests, but should rather cherish a conviction that in fulfilling their real function, they will not only serve its purposes but serve them on an

infinitely higher plane.....affording room to set in motion much more efficient springs and forces than are at the disposal of the State itself." The universities must never forget that the things which they are called upon to cultivate transcend the boundaries of countries and nations. It is in the national task of educating the public conscience of our country that Indian universities have proved so deficient. Goethe's words that the man in action is always without conscience are doubtless true of the man of political action. He is not working for his own good, but for the good of the whole; and what is not allowable to attain this end? We need consequently a tribunal that is not called upon to act, but represents and emphasises the moral judgement. In Germany the universities have taken up this work. Engaged in contemplation, they are less exposed to the temptation of power, to partisanship and party hatred, and for that reason it is their mission to measure the acts of power by the ideal. At a momentous period of its history, the German University proved true to its vocation to be the conscience of the country. J. Grimm's account of the work of the German universities is so apposite, that I take the liberty of reproducing it here : "So long as their sterling and excellent organisation remains what it is, the German universities will be extremely sensitive to everything good or bad that happens in the country. If it were otherwise, they would cease to serve their purpose. The frank and healthy minds of the young demand that their teachers shall at all times reduce every question concerning important relations of life and the state to their purest and most moral terms, and shall answer them openly and honestly. Here hypocrisy is impossible, and the influence of right and virtue upon the unbiassed minds of the hearers is so strong that they instinctively submit to it, and are disgusted by every kind of perversion. It is impossible to keep from them one's independent teaching, fettered by inner conviction alone concerning the nature, conditions and consequences of good Government."

The function of the University teacher.

What then is the function of the University teacher? He is both a scholar or scientific investigator, and a teacher of knowledge. For the University is both an academy and a higher institution of learning. By academy is meant an institution having as its object the extension of scientific knowledge and the organisation of scientific labour. It is accordingly the ideal of the University teacher, on the one hand, to be an original thinker, and a productive investigator within his particular field; and on the other hand, to inculcate in the minds of his pupils the scientific spirit, and to teach the most gifted ones among them to take part in the work. It is really by their capacity for organising researches in the most abstruse branches of science, their methodical, patient and exact methods, and the scrupulous care they take in testing their theories, that the worth of German universities is to be estimated. The essential difference lies rather in spirit and in intellectual outlook, than in forms of organisation. As Sir Michael Sadler points out, "The German University has invented a larger measure of the spirit of scientific investigation than, in spite of the immense change which has come over this country during the last thirty years, has yet descended on the English."

Some drawbacks of the new Universities.

At the risk of being regarded as a pessimist, I assert that the prospects of the organisation of research in this province are getting more remote every day. I have no quarrel with those who repeat, parrot-like, the formula of a "teaching, unitary and residential University." This is one of the most important functions of a University, and University teaching in India still needs considerable reform. The tutorial system must be extended to every department of the University; proper facilities should be provided for the practical work of the students; the size of the classes should

be reduced to reasonable proportions ; conditions of student's life should be improved ; and greater attention should be devoted to the corporate life of the University. The old college played an admirable part in the development of the character of the students, and my firm conviction is that that place has been taken neither by the Departments nor by the hostels. They afforded a number of centres of educational initiative in matters of learning, instruction, and the welfare of the students. Another serious defect of the present system of organisation of University work is its tendency to ignore the claims of research. The conception of a teaching University does not exclude the possibility of systematic research on the part of its members. In fact, it will be easy to show that historically only a teaching University has been able to foster research. Still, there is a tendency at the present time to emphasise the claims of teaching to the exclusion of the claims of research. The University can flourish only if it is a seat of learning as well as a school for undergraduates. Its teachers must be men of learning, absorbing and utilising, by steady research, the new material which constantly becomes available throughout the field of knowledge, and themselves contributing to the supply of such material, according to their abilities. As the Report of the Royal Commission on Oxford and Cambridge puts it, "In the absence of research, teaching itself must inevitably lose both solidity and freshness, and must become fatally impoverished in all its branches." What is needed at the present time is the institution of Post-graduate Departments in selected subjects in the universities of Allahabad and Lucknow. It is impossible for each Department of every University to organise researches in its subjects. The system is educationally unsound, and financially wasteful. Provision will of course, have to be made for the teaching of the ordinary subjects of University instruction up to the M. A. and M. Sc. Degrees in both the universities. After this stage, the need for specialization by a University is essential

I suggest that it may be possible to select a few for the advanced study of which special arrangements could be made in the two universities. Allahabad may be allotted two or three subjects in which it could specialise, and for which ample provision could be guaranteed by the Government; while Lucknow could also choose the subjects in which it offered special facilities for research. For the organisation of effective work, liberal provision is absolutely essential, and if this arrangement is effected, it would avoid that duplication, and pseudo-research which are the characteristic contribution of some of the Departments. Excellent work is being done by some of the Departments, and their investigations have proved of the highest value to scholars. Co-ordination does not imply loss of individuality on the part of any institution. Again, they are dealing not with mechanical but with human organisations, and no scheme can in practice produce satisfactory results unless it secures the hearty and harmonious co-operation of those who are to work it. Nor does it imply the concentration of science teaching in one University, and of Arts in the other. A "University of Science" or a "University of Humanities" would be about as effective as a University of culinary art. Co-ordination, to me, means the effective organisation of our resources for the attainment of a specific end.

Rural Schools.

The need for the organisation of rural schools is increasingly felt in this province. It is not desirable that what is known as technical instruction in agriculture should be taught in these schools, but an impetus should be given to the minds of boys who intend to take up an educational career. The most powerful factor in the rural regeneration of Denmark, and Finland, and, to a certain extent, of Norway and Sweden, has been the type of school originating in, and developing from, the first Danish Folk

High Schools. They came into being when the nation was politically distracted and in sore need of a healing and unifying influence. They afforded an opportunity for the educated classes to give the best they had in them for their country. According to the statement of a typical school, "The purpose of the school is to awaken a craft interest, to give agricultural education,—adapted to local circumstances, and particularly referred to the needs of small holders,—which will make it possible for the agriculturist who is practically trained to pursue a rational, intensive, and especially an independent cultivation." The Punjab has taken the lead in providing facilities for practical training in agriculture. Efforts have been made to introduce agriculture into the Middle Vernacular schools, and their popularity among the agricultural classes testifies to their utility. In my opinion, the success of all of our schemes of educational reconstruction will depend ultimately upon organising really efficient training in the ordinary schools of the province. A beginning has been made in this province, but the progress is extremely slow. What we need is short summer courses for rural teachers held at various agricultural centres. Here they should follow a course, extending to six weeks, designed to teach them something of the principles underlying the growth and development of the plant and the animal. Special grants should be given by the Department to the local authorities for the purpose, and they might well imitate the system in England whereby agricultural education of a farm institute-type might be provided by local authorities. Instruction of a farm institute type might be given at a permanent residential institution, or by means of organised courses at different centres in the area.

The place of the Teacher in New India.

From the discussion of the technical side of our craft, I now turn to the professional side. The growth of interest in

education has led to a greater appreciation of the work of the teacher.

He is the pivot round which the whole system revolves, and upon his work, his initiative, and his industry, the success of all the educational schemes of this province depends. The amount of power the teachers can wield in the organisation of our community is enormous. The two instances of Japan and Germany are conclusive evidence of the tremendous influence exercised by the schoolmaster in his generation. This all-conquering power is the education of the young. Benjamin Kidd expresses this idea, in his crude, doctrinaire way, "The stupendous potentiality of civilisation, as distinct from barbarism, consists in its cultural or collective heredity imposed on the rising generation under suitable conditions. The most important element in this, *viz.*, the idealism of mind and spirit conveyed to the young of each generation, *under the influence of social passion*, is absolutely limitless in its effect. *The power which is represented thereby is capable of creating a new world in the life-time of a generation.*" Hence, an ideal backed by a social passion can be impressed upon the young in a single generation.

The status of a Teacher in European countries.

Let me compare the position of the secondary school teacher in Germany and France, and explain the enormous differences in outlook, status and salary from their brethren in India. The German teacher enjoys security of tenure, and may only be removed from office for some very grave cause. He is a member of the civil service, and has a definitely recognised position in the social scale. He enjoys, in addition to a graduated salary, the use of a house or compensation for rent, and the prospect of a pension. The salaries, though not generous, are sufficient to provide him with all the

amenities of life. In France, the secondary school teacher have an open career for ambition, and a high professional and social status. Moreover, they have independence and security. Their salaries are substantial, and they are entitled to a pension at sixty, after thirty years' service, equal to two-thirds of the average salary received during the last six years. Only five per cent of their salary is paid towards the pension; and, if incapacitated by infirmities resulting from exercise of duties, a master is pensionable at fifty, after twenty years' service. Provision on a liberal scale is made for widows and orphans, the amount varying between one-third for normal cases, to two-thirds for special cases, of what the husband's pension has been or would have been.

The United States is well-known for the poor salaries its elementary teachers receive in various states. Carpenters in the United States receive an annual wage of 802 dollars, coal miners 600 dollars, factory workers 550, and labourers 513 dollars. What does the elementary school teacher get? During the part of the year he is employed—and this rarely exceeds 200 days in the year—he gets on an average 485 dollars. It must be remembered that in many of the states the period of employment represents but a small part of the year, and many of the teachers resort to other employments during the remaining time. What is the result of this niggardly policy? The inevitable result is that teachers do not remain long in the rural schools. There is a constant migration, particularly of good teachers from the rural schools, to the city.

The School teacher in England.

The position of the school teachers in England before the War was not by any means enviable. Unless he happened to be a master in a Public School, or a good Grammar School, the secondary teacher received a miserable reward for his

services. Indeed, it was only with great difficulty that he could keep on the garb of respectability. The salary he received was barely sufficient for his needs and it was a heartrending sight to see "black-coated", trim, respectable-looking secondary school teachers trudging proudly to the school. The elementary school teacher had attained a better position. Thanks to his discipline, his power of organisation, and, let me add, to his submissiveness, he succeeded in extorting really valuable privileges from the close-fisted, contentious, and pugnacious councillors. This is due, of course, to the tremendous power exercised by the National Union of Teachers. That body had a very humble beginning and had to fight a succession of local authorities, with all the resources—and they were by no means large—at its command. But the spirit of self-sacrifice displayed by its members, the organising capacity and power of leadership exhibited on numerous occasions by its officers, ultimately led to victory. Its supremacy is now unchallenged, and it exercises general supervision over a number of smaller Associations, created chiefly for the purpose of safeguarding the privileges of a particular locality. The best example of such an Association is the London Teachers' Association, which contained more than 20,000 teachers on its rolls, and organised numerous meetings, demonstrations, and even strikes during the period of struggle, 1917-18.

Recent developments in English education.

In April 1917, Mr. Fisher introduced the Education Estimates for the year in the House of Commons, and called attention to the urgent need of increasing the salaries of teachers. He gave figures to show how low the salaries were in the various grades, and he asked the House to sanction an additional grant for elementary education of not less than £3,420,000, framed upon a

principle which would give a direct interest to the local authorities to enact liberal salary scales. One of the great events in the educational history of 1918 was the placing upon the statute book of the School Teachers' (Superannuation) Act. This Act placed teachers in the same footing as regards pension as Civil Servants, and thus for the first time, gave formal recognition to the fact that teachers were performing functions analogous in importance from the civil point of view to the function performed by the Civil Service. The scheme was a non-contributory one, no contribution being required from the teachers. It provided that teachers who had been employed not less than 30 years in a recognised or qualifying service should be eligible for pension at the age of 60. It must be noted that the previous Acts had made no provision for pension. The Act provided in generous terms for the payment of superannuation allowances, and sanctioned lump sums for teachers who were compelled by ill-health to give up teaching before they had reached the normal age of retirement. The lump sum constituted a form of life insurance policy. Another vital point must be noticed. The Act was not a scheme for the superannuation of elementary school teachers only, but for all teachers, below University rank, whether in elementary, secondary or technical schools, provided they were recognised by the Board. Another important departure from previous policy was the establishment of Burnham scale of salaries. These scales were drawn up on most generous lines, and all classes of teachers benefited by this.

Ladies and gentlemen, I will not take up your time with a description of the effects of these measures. Suffice it to say, that they have completely altered the status of the teacher in England. He now occupies a recognised place in the national system of English education, and his zeal and devotion to the state are as conspicuous as his sturdy independence, and capacity for discipline.

The lot of the Indian school teacher.

Contrast the position of the English teacher, with his strong Association, his generous pay and his liberal pension with the unorganised, poor, almost inarticulate teacher in a non-Government Indian school. His tenure is precarious in the extreme; he rarely enjoys a decent pension; bonuses are unknown, while the delusive, gipsy promises of a rise in salary, and recognition of services rendered are no more binding than many a pledge sworn on oath and backed by all the ties of mutual interest. Does not this attitude produce something ignoble and inglorious? a kind of meanness in all the prevalent policy? a tendency in all that is done to lower, along with individuals, all the dignity and importance of our profession? We teachers are proverbially silent, quiet and shy, and it is only after considerable reluctance that we have decided to put forward our reasonable, legitimate, and moderate claims for improvement in our salary; for the institution of a pension scheme, and for our representation on various educational institutions of our province. Because half a dozen grass-hoppers under a fern make the field ring with their importunate chink, whilst thousands of great cattle chew the cud and are silent, pray do not imagine that those who make the noise are the only inhabitants of the field.

Our demands.

What do we need at the present time? Our demands are not unreasonable, nor are our claims unjust, and we are actuated in this course of action by the sincere belief that it is for the good of the children committed to our charge, and is beneficial to the country. We stand to-day for equality of educational opportunity, and we admit no social inequalities or poverty bars within the educational system. Our passport is capacity, and our chief care the efficiency of our educational system, and the maintenance of the welfare of our children

and youths. We must make it clear to the nation the danger of the continuance of the present policy, which seriously threatens the present standard of efficiency of the whole educational system of this country. We cannot conceive that the economic and social tradition of this province, a tradition for which no living man or woman is responsible, but which has been inherited by the present generation as a legacy from the past, is the best imaginable, either for this province or for India. Here we have a peasantry as quick-witted and intelligent and sturdy as any in Europe, splendid material for education, but condemned from a tender age to monotonous toil, and bleak ignorance, without any chance of education.

The teaching profession does not offer great rewards, but it is essential that teachers should be relieved from the burden of constant financial anxiety. It was useless to say that teaching was a vocation and that, given the real missionary spirit, the money was a matter of little importance.

We must organise, and organise effectively, vigorous campaign against the tendency to "dilution" in schools. We are, I think, the greatest offenders in this respect, and overlook the importance of maintaining the highest standards for admission to our profession. In the case of the skilled artisan, it is comparatively easy to determine whether the dilution lowers the quality of the work done. The results are there to be tested. We have the bricks before us; if they are well and truly laid, there is no more to be said. Far different it is with the boys' class-rooms. The boys may be as happy with the untrained teacher as they are with the trained. Nay, they are even a little more demonstratively cheerful. Does it follow, therefore, that all is well? Education suffers, and suffers disastrously.

If we wish to maintain the solidarity of our profession, if we desire to keep up the standard, and increase the prestige

of our profession, we must set our face against the admission of persons who have not been properly educated. It is by this means that the sense of *esprit de corps* has been developed among the teachers of Europe and America; it is the lack of this that has disorganised the secondary teacher in India.

One effective means of realising this is the institution of the Teachers' Register. It is nearly ten years since the first council, under the chairman of Mr. Arthur Acland, completed the task of settling up the conditions under which admission to the Register could be obtained by approved persons, and the aim of Sir Robert Morant, "the larger and more general conception of the unification of the teaching profession," is nearer realisation. In 1917, 17, 752 applications were received, while in 1922, the total applications were 73, 359. Of this number 2,668 were refused. The public refuses confidence to the unqualified doctor or lawyer. Such recognition should also be withheld from the ill-equipped, unqualified teacher.

Need for organisation.

Gentlemen, we have a long and desperate fight before us. It is a great change that we want to bring about in the system of administration—a change by which the educational affairs of the people will be represented by the voice of the representatives of the teachers. What we need is action, leadership, and discipline. What we want is earnest, active, disinterested work for the cause, which is really the cause of our country. Temporary failures must not discourage us. Hopes deferred must not sicken us. We must pursue our course with that courage which inspires the soldiers in a forlorn hope with a heart for meeting any failure, conscious of our integrity and conscious of the nobleness of our purpose. And I call upon you to fight for your right, resolved not to be beaten. To doubt is to doubt the justice of our cause. To doubt is to doubt the honesty and sincerity of a great people, who are bound by

every obligation of duty to redeem their pledges. Let us then work not in sorrow, not in despondency, but in joyful assurance, and in the sure trust that our cause shall triumph, and our profession shall attain its rightful place in the social scale. Our ability to meet the situation will depend upon our spirit of comradeship, our spirit of unity, and our readiness to express these in and through a complete and effective organisation. The intrusion of sectional differences, and the dissipation of our power in separate organisations, will bring disaster on our immediate fight, and destruction to the realisation of our professional status. I say to my brother teachers, drop your exclusive dangerous sectionalism, and unite with a will and organise with determination. Our Association will grow greater in power, it will grow greater in influence, if the teachers of this province are roused out of their lethargy, and united into a band of enthusiastic, devoted fighters for the cause.

I believe that the hour has struck for a great educational advance in this country. I believe that the people of this province are ready and willing to bear any sacrifices for the cause of their children. I am convinced that this great people, which has led the way in all the movements of reform, is determined that justice is done to its teachers, and their rights are safe-guarded. I believe that the years which follow will be marked by incessant and fruitful progress along the paths of promise, and any changes which we may succeed in accomplishing will only be the logical completion of a long series of quiet improvement, the work of devoted men, labouring unostentatiously to a common end, which has already been embodied in our practice. The field has been sown, the corn is ripening under the sun, and the time will come to reap the harvest.

I appeal to my brother teachers to rise to the occasion, and to show to the world that we are determined to tolerate

in-efficiency, disunion, and disorganisation no longer, and that we are resolved to keep up the fight until victory is assured. We must be allowed to participate on equal terms in the rights and responsibilities of this province with other sections of society. There is no land on earth which stands more in need of such service than ours. There is no province in India which contains nobler traditions of culture and public spirit, and loftier examples of art and religion, and it behoves us as inheritors of this legacy to illustrate them in our actions. It is true that we are working under numerous difficulties; it is true that we are faced with a desperate struggle. But duty demands that we should face it. I do not doubt what your decision will be. I have never distrusted your instinct, or questioned your wisdom. For a time the needle of your judgment may quiver, but then it will settle and point the end steady to the polestar of hope.

SHAFIAT AHMAD KHAN.

REPORT

BY THE

Right Hon'ble V. S. Srinivasa Sastri, P.C.,

REGARDING HIS

Deputation to the Dominions of Australia,
New Zealand and Canada.



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SUPERINTENDENT, GOVERNMENT CENTRAL PRESS

1923

Dated Madras, the 8th January 1923.

From—The RIGHT HON'BLE V. S. SRINIVASA SASTRI, P.C.,

To—The Secretary to the Government of India, Revenue and Agriculture Department.

SIR,

I have the honour to submit a report of my visit to the Dominions of Australia, New Zealand and Canada.

2. Accompanied by my Secretary—Mr. G. S. Bajpai, I.C.S.—I sailed by the S.S. 'Ormonde' from Colombo on May 22nd and arrived at Fremantle, the port of Western Australia on June 1st where I was received by the Acting Premier of the State, Mr. Colebatch and an official of the Prime Minister's Department, Mr. W. A. Smith, who was attached to me throughout the period of my stay in the Commonwealth. I sailed from Sydney for New Zealand on July the 6th and in the interval visited the capital of every State in the Commonwealth with the exception of Tasmania, to which, on account of the prevalent climatic conditions and the comparative insignificance of the resident Indian population, it was not considered desirable that I should proceed. Everywhere I was the recipient of the most generous hospitality from officials and non-officials, and nothing could exceed the warmth or sincerity of the welcome which was extended to me as a representative of the Government of India. The arrangements made for my comfort by the Government of the Commonwealth were in every way satisfactory, and I should like to place on record my gratitude to Mr. W. A. Smith of the Prime Minister's Department whose aid was invaluable in the furtherance of my mission.

3. The primary object of my mission to Australia as well as to the other Dominions was to induce the respective Governments to give practical effect to the resolution of the Imperial Conference of 1921 which recognised "that there is an incongruity between the position of India as an equal member of the British Empire and the existence of disabilities upon British Indians lawfully domiciled in some parts of the Empire," and recommended that "in the interests of the solidarity of the British Commonwealth it was desirable that the rights of such Indians to citizenship should be recognised." I was further generally instructed to look into any other disabilities of Indians resident in Australia and to request the authorities concerned to remove them. Another duty was to enquire into the possibility of securing admission for Indian students into the various Australian Universities and to ascertain whether these bodies would be ready to arrange an interchange of professors and lecturers with Indian Universities as a step towards the establishment of a better understanding between India and Australia.

4. My method of enquiry in regard to the disabilities of domiciled Indians was to collect the fullest information from official sources as well as from representative Indians whom I met in the various capitals.

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A list of these disabilities which Indians share with other Asiatics is given below :—

✓(1) *Disabilities in regard to political status.*—

- (a) *Franchise for and Membership of Parliaments.—Commonwealth.*—An aboriginal native of Australia, Asia, Africa, or the Islands of the Pacific (except New Zealand) cannot be an elector for the Senate or the House of Representatives, unless he is entitled under the law of the State to vote at elections for the more numerous House of the Parliament of the State (Commonwealth Franchise Act, 1902, section 3, and Constitution Act, 1901, section 41.)
- (b) *Queensland.*—Indians as aboriginal natives of Asia are disqualified from membership of the Legislative Council and Legislative Assembly (Constitution Act, 1867) and from voting at elections for the Assembly (Elections Act, 1915, section 9). The Council which was the upper house has now been abolished in Queensland.
- (c) *Western Australia.*—Aboriginal natives of Australia, Asia or Africa may be registered as electors for the Council in respect of a freehold qualification but not for the Assembly (Constitution Acts : Amendment Act, 1899, sections 7, 15, 20: Electoral Act, 1907, sections 17, 18.)

✓(2) *Disabilities in regard to property.*—All Asiatics are disqualified from obtaining leases of land in certain irrigation and reclaimed areas. (Irrigation and Reclaimed Lands Act, 1914, section 19.)

✓(3) *Disabilities in regard to employment and occupation.*—

- (a) *Commonwealth.*—Bounties under the various Bounties Act, 1907-1912, are payable only in respect of goods grown or produced by white labour.

(b) *Queensland.*—

- (1) The Dairy Produce Act, 1920.
- (2) The Béche-de-Mer Fishery Act, 1913.
- (3) The Sugar Works Act, 1911.
- (4) The Sugar Cultivation Act, 1913, and
- (5) The Banana Industries Preservation Act, 1921,

prohibit the employment in the various industries of persons who have not in the first instance obtained in the manner prescribed by the Acts a certificate that they are able to read and write from dictation not less than 50 words in the English language. In practice these Acts have the effect of excluding all Asiatics from these trades or occupations.

- (c) *Western Australia*.—Miners' rights may not be issued to, nor may an interest therein be held by Asiatics or Africans, even though British subjects, without the Minister's approval. (Mining Act, 1904.)
- (4) *Miscellaneous.—Commonwealth*.—Indians are disqualified from receiving invalid and old-age pensions. Enquiry made from Indians further showed that some difficulty was encountered in the administration of passport regulations especially in regard to the admission of substitutes for resident Indians wishing to return temporarily to India.

5. Each one of these grievances I discussed with the authorities concerned, and the results of my negotiations in regard to them will be stated in separate paragraphs. Before proceeding to do this, however, it may be desirable to make a few general remarks on the distribution of the Indian population in the various States of the Commonwealth, their occupation and outlook and their social and economic conditions.

6. The total Indian population in the Commonwealth of Australia is approximately two thousand. Accurate figures as to the province-wise distribution of this population are not available, as the census authorities include in the enumeration Indians who happen to be in port on the day when the census is taken. From official and private enquiry, however, I was able to obtain the following approximate figures:—

Western Australia.	South Australia.	Victoria.	New South Wales.	Queensland.	Tasmania.
300	200	400	700	300	100

Mohammadans predominate in all these States. Only a few Sikhs are to be found in New South Wales and Queensland. Statistics of occupation were not available; but I gathered that the majority were engaged in retail trade or in agricultural operations. Instances of success in these occupations are numerous, the most notable being those of one Mr. Bád Ullah from Sind who has settled in Western Australia and owns a large sheep station of 250,000 acres of land and 25,000 head of sheep, and a firm of Indian mercers, Messrs. Wassiamall Assamall who have flourishing branches at Melbourne and Sydney. Nearly all look prosperous and, even where economic prejudice operates to their detriment, the remuneration for manual labour for each man is seldom less than 12 shillings a day. Of social prejudice I saw little trace. A good many Indians have married Australian wives from whom they have children and live in harmony and friendship with their neighbours. I visited a few families and was assured by the wives that they suffered from no social disabilities.

7. The question of prejudice brings one to the so-called white Australia policy which is often interpreted to signify not merely the

determination of Australians to exclude Asiatics, but as an instrument of persecution for those Orientals who have taken up their residence in Australia. I have already alluded to the social relation in which the Indian community in Australia stand to their white neighbours. So far as the restrictive side of the policy in regard to emigration from abroad is concerned, it commands the support of an overwhelming majority, who look upon it as sacrosanct. Various causes have led to the crystallisation of the policy and the attitude of mind on which it is based. The sensitiveness and vigilance of both the Australian public and the Australian Press in this matter may be gathered from the fact that, in spite of repeated declarations that the Government of India stood by the reciprocity resolution of 1918 which concedes to each community of the Britannic Commonwealth the right to regulate the composition of its own population, my mission was to the end criticised in certain circles as an insidious attempt to seek a revision of the policy by securing concessions which would make immigration to Australia attractive to Indians in the future. Though the criticism was confined to the circles in sympathy with labour views, it necessitated emphatic assurances on my part of the determination of the Government of India to abide by the reciprocity resolution of 1918. The result was evident in the consideration which I received at the hands of the various Governments and in the creation of an atmosphere generally favourable to the realisation of those objects for which the Government of India had deputed me to visit the Dominions. Had I shown the slightest disposition to throw doubt on the validity of the 1918 compact, the mission would have been foredoomed to failure.

8. In regard to the Commonwealth franchise I was informed by the legal advisers of the Commonwealth Government that the Commonwealth Election Act of 1902 creates a separate Commonwealth franchise, which cannot automatically follow from the conferring of the provincial franchise on any class of citizens on a date subsequent to the passing of the Act. This is the interpretation to which successive Attorneys General have adhered and, although it is not supported by judicial authority, it may be taken for all practical purposes as necessitating a special Act of the Federal Parliament, to enfranchise those Indians who were not in enjoyment of the State franchise before the Act of 1902 became law. This was the view which I urged on the Commonwealth Government, and their attitude can best be indicated in the following words of the Prime Minister of Australia, Mr. Hughes.

9. "In regard to the franchise although I am not able to speak on this subject with such assurance and with such finality as on the old age pensions question (see paragraph 12 of Report) I do not hesitate to repeat in the plainest possible terms that you have brought within the range of practical politics a reform which but for your visit would have been most improbable, if not impossible, of achievement." A more definite promise was not possible in view of the political situation in Australia and the distribution of parties in the Parliament. Both at the parliamentary dinner given by the Government of the Commonwealth at which I pleaded for an early grant of the Dominion franchise to domiciled Indians, and at private interviews with Mr. Charlton, the

leader of the labour party and Dr. Page, the leader of the country party, I received assurances of sympathy and support, and I hope that this fundamental reform will be effected at no distant date. The desire to satisfy Indian aspirations in this respect is widespread and genuine. Its fruition may temporarily be retarded by political exigencies which are incidental to Parliamentary Government and cannot be prevented. Of course the electors of Australia would have to be reminded of the great importance attached in India to the franchise of the Dominions as a proof of her equal status and equal partnership in the Empire, and of the imperial significance which the problem acquires from that fact.

10. In Western Australia and Queensland where Indians do not enjoy the political suffrage in respect of elections to the Lower House, there is every reason to hope that the Governments concerned will follow the lead of the Dominion Cabinet. Without such lead the State authorities are reluctant to take the initiative, for reasons arising from the existence of sharply defined political parties.

11. The Government of South Australia promised to amend the Irrigation Act so as to render Indians eligible for leases of land under the Act. The disability in Western Australia as regards the acquisition of mining rights is not statutory but is remediable by the Minister in charge of mines, and I was assured by the Premier of the State that any future applications of Indians for such rights would be sympathetically considered.

12. During my stay in Brisbane the Government of Queensland resolved to remove the restrictions to which Indians engaged in the banana industry were subjected under the Act of 1921; the only other laws which affect them are the Sugar Cultivation Act of 1913 and to a smaller extent, the Dairy Produce Act. The Béche-de-Mer and other Statutes mentioned in paragraph 3 of this report have no practical bearing upon the Indian situation as there is hardly an Indian engaged in these industries. The amendment of the relevant Acts may be expected to follow the passing of legislation in the Commonwealth Parliament rendering Indians eligible for invalid and old-age pensions. Labour is always suspicious of measures of relief to oriental rivals, and the Labour Government of Queensland is naturally anxious to dispel apprehensions by giving to its remedial legislation the impress of a general policy adopted in deference to larger imperial interests. The Commonwealth Government promised to introduce legislation to amend the present Invalid and Old-age Pensions Act at an early date. This would confer a real benefit on the older Indians settled in the country who are devoid of personal resources and disabled from pursuing their normal vocations. The Bounties Acts were only in operation during the war and are no longer applicable. There is no need to seek for the amendment of what is already a dead letter.

13. Difficulties in regard to the entry of Indians into Australia arise in connection with—

- (i) incomplete passports; and
- (ii) the admission of substitutes.

It often happens that a person, wishing to go to Australia either to assist a relative or friend already there or in hope of getting an occupation with his help, obtains a passport describing him as a visitor, and being unable to satisfy the immigration authorities, finds himself in trouble. The Minister of the Interior, who administers the immigration regulations and with whom I discussed the question, informed me that, although the general practice about admitting substitutes was to confine the privilege to persons who came out to act for men engaged in promoting overseas wholesale trade between Australia and the Eastern countries, Indian substitutes were allowed to land if they came as substitutes for farmers, retail storekeepers or in some cases even for hawkers. All that a substitute has to do is to obtain a bond in the sum of £100 and to accept the condition that he will leave Australia within three months of the return of the permanent resident to the Commonwealth. A similar condition is imposed on the resident to leave within three months of the arrival of the substitute. The attitude of the authorities seemed to me to be reasonable and the only action necessary would appear to be a closer scrutiny of passports issued by the Local Governments in India to persons proceeding to Australia to make sure that only *bona fide* substitutes get permits. Full information about the object of an applicant's visit and the probable duration of stay should be shown on the passport in order to eliminate such difficulties as individuals falling under the category of merchants, students and tourists might conceivably experience on landing in Australia.

14. In the Universities of Adelaide, Melbourne and Sydney, which are the best equipped and the most widely known, my request for the admission of Indian students was very favourably received. The accommodation in these Universities is limited owing to the pressure of indigenous students, but I have no doubt that the authorities would welcome the entry of suitable students from India in moderate numbers. A similar assurance was given me by the University of Perth. In Brisbane I saw for myself that the local demand leaves no room for outside students. The first three Universities would also be prepared to consider any reasonable proposal for the exchange of lecturers that might emanate from the Indian Universities.

15. The foregoing paragraphs briefly summarise the results of my visit to Australia. The promise of legislation to render Indians eligible for old-age pensions, the removal of disabilities in regard to employment in the banana industry in Queensland and the undertaking of the Government of South Australia to eliminate the only restriction on their statute book applicable to Indians, *viz.*, exclusion from leases of Crown lands in the Murray region does not amount to a complete settlement of our differences with the Australian authorities, but it is a satisfactory index of the spirit in which the latter are prepared to give effect to the resolution of the Imperial Conference of 1921. Even more gratifying was the cordial sympathy manifested by all sections of the people to the requests which I made on behalf of the Government of India. The principle of equality of citizenship is now recognised as vital to the continuance of friendly relations between the various parts of the Empire, and there is a general disposition to concede equality in

view of the assurances that nothing will be done to disturb the policy of restricted emigration which the majority of Australians look upon as necessary to their economic safety and well-being. It is easy to underrate the effect of popular sympathy ; but in democratic countries it is the only foundation on which a reform which has long been hindered by ignorance and prejudice can be based. The appeal to imperial solidarity, justice and fairplay on which I based my case evoked widespread response. Ere long it should help to consummate the aspiration which the Government and the people of India have so much at heart.

NEW ZEALAND.

I sailed from Sydney on the 6th of July and arrived in Wellington on the 11th. The Minister for the Interior, the Hon'ble David Stewart, and Mr. Hislop, Under-Secretary of State for Internal Affairs, received me on behalf of Government. As I was to leave for Vancouver on July the 25th it was decided to confine my visit to the North Island. During my stay I stayed for a week in Wellington, a couple of days in Rotarua, and the rest of the time in Auckland. The Government of New Zealand had made every arrangement for our comfort and both as a cerone and official guide—Mr. Hislop who accompanied me everywhere in the Dominion was invaluable. The reception accorded by the civic authorities was also most generous and enthusiastic ; while nothing could exceed the courtesy shown me by Their Excellencies the Governor-General and Lady Jellicoe. Everywhere I saw manifestations of sympathy for India and her people and a genuine desire to establish a friendly understanding between the two parts of the Empire by the removal of outstanding differences.

2. The resident Indians in the Dominion of New Zealand number between 550 and 600. Exact figures were unfortunately not forthcoming as the Census Department had not completed their report of the last census. The New Zealand Electoral Act gives franchise to all British subjects, and Indians, enjoy the privilege, just the same as other classes of His Majesty's subjects. Enquiry from Indians revealed the existence of two disabilities :—

- (1) exclusion from the benefits of the Old-age Pensions Act ; and
- (2) difficulty of securing employment. I made representations on both subjects to the Government of New Zealand. As regards the former Mr. Massey's Cabinet informed me that there were no amendments proposed at present in the Act, but that when the time came to revise it, Government would consider my representations. In view of the fact that there are probably no Indians who fulfil the conditions regarding age required by the Act, and it is unlikely that any will be eligible for some years to come, no great hardship should result from the matter being allowed to stand over for the present. When the time comes, I have no doubt that the claims of Indians will receive a sympathetic consideration.

3. In this belief I am strengthened by the assurance given me by the Minister of Public Works that no Indians who could not find employment elsewhere would be provided with work by Government in order to enable them to earn a livelihood. In this connection it seems desirable to record an episode which reflects great credit on the Government of New Zealand. Some time ago a band of Indian labourers was employed on road construction, when white labourers refused to work with them. In this intransigent attitude they received the support of their union. The authorities declined to dismiss the Indians and their firm stand led to a collapse of the white strike. This instance is significant of the firmness and impartiality with which the Dominion of New Zealand administer their laws.

4. I was also at some pains to enquire into the causes which prevented Indians from securing employment. It will be idle to deny that in some cases colour prejudice is responsible for the result, but the prejudice is confined to a few, and so are the instances of unemployment among Indians. They do not enjoy the same degree of prosperity as their compatriots in Australia; but the explanation of this is to be sought not in any aggravated manifestations of prejudice as in a variety of causes wholly unconnected with racial animosity. The majority of Indians have not been long in the country and have yet to find their feet. Casual labour at a time when there is a general economic depression is a precarious source of livelihood. The revival of prosperity should improve their prospects. Such of them as have farms of their own are quite well to do.

5. In accordance with my instructions I made representations to the Government of New Zealand regarding the New Zealand Immigration Restrictions Amendment Act, 1920. Under the regulations framed under the Act it was provided:—

- (1) that temporary permits for visits for the purpose of pleasure, education or commerce should be issued only for a period of six months or less, extensions being given for extraordinary reasons only, and
- (2) the Government of New Zealand further suggested that the number of passports issued annually by the Government of India for temporary visits to New Zealand should be restricted in number, and that they should be issued only to people who had already arranged to leave New Zealand on the expiration of their temporary visits.

As a result of my negotiations the stipulation as to the number of permits or passports to be issued by the Government of India has been withdrawn, and it has also been agreed that such permits will in every necessary case be extended in order to enable a visitor to complete the purpose of his visit. The regulations further provide that Indians lawfully resident in New Zealand can leave the country only for four years without loss of domicile. The Government of New Zealand have agreed to amend this regulation if it is found that the time fixed can be safely extended with due regard to the prevention of fraudulent use of old certificates.

6. So far as grievances remediable by legislation or appeals to individual official or public opinion are concerned, this exhausts the list. I should, however, like to dwell on one feature of the situation which affects Indians both in Australia and New Zealand and which to my mind calls for immediate improvement. It is the absence of a co-ordinating and protecting agency which could help the Indian community to realise its existence as a corporate entity, and assist individual members of the community in combating difficulties which arise from day to day. Neither in Australia nor in New Zealand do Indians possess sufficient education to take care of themselves. They are scattered over a very wide area ; they are drawn from various classes, and they lack the equipment for organised effort. The dominion authorities with the best will in the world cannot help them to overcome the shortcomings of defective education. If one of them wishes to secure a passage, there is difficulty with the shipping companies. If the authorities have to be approached regarding the admission of a substitute or a relation, there is difficulty owing to lack of mutual understanding. Most of these troubles are incidental to an imperfect knowledge of English and the strangeness of the environment in which they live. Its effect on the community as a whole is to paralyse unity of endeavour where the interests of all are concerned. The individual is similarly handicapped in the pursuit of his own vocation. Other countries provide the necessary aid to their nationals in the person of a Consular Officer. India maintains no such agency in the Dominions. Doubtless the Indian population both in Australia and New Zealand will, in future, probably be a dwindling factor, but this can of itself be no justification for a neglect of the interests of those who are there. From several quarters I received suggestions or requests that this deficiency should be supplied. Nothing could be of more effectual help to the Indian community in these distant lands, than the presence of a sympathetic and duly accredited representative of their country who was charged primarily with the duty of protecting their interests ; nothing could better smooth over difficulties which must arise between Governments so far removed from one another as the Governments of the Dominions and of India. If a protector of Indians is appointed in Fiji, it might be possible to include the protection of Indian interests in New Zealand and Australia in his jurisdiction. If such an appointment be deferred, an alternative arrangement would seem to be to appoint an agent for the two Dominions ; who might also combine with the duties of protector those of a Trade Commissioner if his work as protector does not occupy all his time. But some action to help our nationals in these countries seems to me to be essential.

CANADA.

I left Auckland on July the 25th and landed in Victoria, the capital of the province of British Columbia, on August the 11th. I was received on landing by Sir Joseph Pope, Under-Secretary of State for External Affairs, whom the Prime Minister of Canada had deputed to welcome me on behalf of his Government. Fortunately the Commissioner of Emigration for the Pacific Coast was in the town, and I was able to ascertain

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from him the exact numbers and distribution of the Indian population in the Dominion. There are not more than 1,200 Indians in the whole of Canada to-day, and of these nearly 1,100 are Sikhs and are mainly to be found in British Columbia. The remaining 100 are scattered over the rest of the country, the majority being found in the provinces of Alberta and Saskatchewan. Compared with the pre-war figures which were in the neighbourhood of 6,000, there has been a very great decline in the Indian population, due partly to migration from Canada to the United States and partly to returns to India.

2. In British Columbia the majority of Indians resident are employed in the lumber trade as mill-owners, or operatives or carriers. Agriculture is the main occupation of the rest, although I found one or two in Toronto following literary pursuits such as journalism or accounting. Very few Indians work as labourers for others. The labour representatives whom I met in Vancouver and other private individuals informed me that the Indian is very industrious and steady and much in demand, and that consequently he commands sometimes even a higher wage than his European rival. In the circumstances it is only to be expected that the general level of prosperity of the Indian population in Canada should be high.

3. In Canada I had to apply myself to three tasks, *viz.* :—

- (i) to secure the federal franchise for such Indians as do not already enjoy it ;
- (ii) to obtain the provincial and municipal franchise for Indians resident in British Columbia which is the only province that withholds these rights ; and
- (iii) to ascertain and ask for the removal of such other grievances as might exist unknown to the Government of India.

4. *Dominion franchise.*—Under section 30 (1) (g) of the Dominion Elections Act persons, who by the laws of any province in Canada, are disqualified from voting for a member of the Legislative Assembly of such province in respect of race are not qualified to vote in such a province at elections to the Dominion House of Commons. That the disqualification is not absolute may be gathered from the provision included in the same sub-clause of the Act that the restriction shall not disqualify or render incompetent to vote any person who has served in the naval, military or air force of Canada in the late war. Other instances of the Dominion Parliament not strictly adhering to the provincial electoral qualifications for the purposes of dominion franchise are not uncommon. For instance, in the year 1900 the legislature of the province of Manitoba passed an Act providing that persons not of British birth and not resident for more than seven years in the province could not be enrolled as voters unless they could read certain clauses in the Act in one of the following languages :—

English, French, German or any Scandinavian language.

This provision was intended to disfranchise Slav voters from the Ukraine, but the Dominion Parliament did not accept the disqualification

and admitted them to the federal franchise. Precedents thus exist to enable the Dominion authorities to take separate action in order to confer the right of vote at Dominion elections on Indians resident in British Columbia, even though the Government of that province cannot see its way to confer the provincial suffrage on them. This argument as well as the recommendation of the Imperial Conference of 1921 which was assented to by the representatives of Canada I placed before the Federal Cabinet in Ottawa in order to expedite legislation in the desired direction. I quote the following from the Prime Minister's reply —

“ I desire to assure you that at the earliest favourable moment, the Government will be pleased to invite the consideration of Parliament to your request that the natives of India resident in Canada be granted Dominion Parliamentary franchise on terms and conditions identical with those which govern the exercise of that right by the Canadian citizens generally.”

From enquiry I ascertained that the present Electoral Act should come up for revision in the very near future and that the occasion will be suitable for recommending to Parliament the enfranchisement of Indians resident in British Columbia. The attitude of politicians and the public generally would be favourable to such a measure, primarily on its merits as a measure of justice and also on account of its beneficial influence on the relations of India and Canada. There may be some disposition in political quarters in British Columbia to oppose it, but there is no reason to anticipate that their objections would not yield to a rational presentation of the case in its broader aspect. At every public meeting which I addressed, I urged on my audience the need for approaching the question in an imperial and not a provincial spirit. Their response seemed to be of happy augury for the future.

5. In British Columbia itself I found every readiness on the part of the Local Government to admit the reasonableness of my request, but a reluctance to make any definite pledge in view of the prevalent opinion in the province. The economic rivalry between the white and non-white races in British Columbia is more acute than in any other part of the Dominion. Indians do not share in the struggle to any appreciable extent as their numbers are comparatively insignificant, but the oriental element in the population of the Province composed of men from countries in the far East is considerable ; and to those engaged in the task of earning their daily bread, racial distinctions are too intangible to provide a substantial basis for differentiation. The extent of popular prejudice may be gathered from the fact that last year a measure introduced in the legislative assembly of the province to confer the vote on those Asiatics who had served with the Canadian forces during the late war was defeated. In such an atmosphere it is difficult to expect an immediate and auspicious initiative on the part of the provincial authorities. As Parliament was not sitting, I was unable to put my case before its members ; but I spoke before several public audiences and also discussed the question of the franchise with representatives of labour organisations which are commonly supposed to be stronger in their opposition to claims of equality put forward on behalf of the Eastern races. The former were enthusiastic in their

response to my appeal for equitable and equal treatment of Indians ; the latter authorised me to state to Government that they would not oppose to any measure of relief that the latter might decide to introduce. All the signs point to a softening of prejudice and a broadening of vision ; but persistent effort would appear to be necessary for some time yet in order to complete the task of political education without which no change can be expected in a democratic country. In British Columbia I am not hopeful of immediate results ; but of the ultimate success of continued endeavours, I have little doubt.

6. The other difficulties of resident Indians, besides exclusion from the municipal franchise in British Columbia in regard to which the attitude of the Provincial Government is similar to their attitude in respect of the political franchise, are of a minor character. They arise out of applications for the admission of substitutes or children of relatives whom resident Indians wish to send to school in Canada, or from the rejection of applications for permission to return to India by Indians who entered Canada surreptitiously and are, therefore, not lawful residents. As regards the entry of substitutes there should be no difficulty in arriving at an arrangement similar to the one which exists in Australia. The admission of children not covered by the reciprocity resolution of 1918 presents some difficulty as the Department of Emigration do not feel sure that the privilege of introducing the children of relatives who merely wish to proceed to preparatory schools would not be abused. Once a child has been admitted, it is impossible for the Department to keep track of him or to compel his attendance at school ; a loophole, it is feared, might thus be opened for the importation of child labour. A solution might be found in the consideration of each application on its merits, and I have urged this on the Minister for consideration. Indians who enter the country by evading the law have no legal claim to be allowed to register out with a view to retaining their domicile if they wish to return to India for a short visit ; but as the Canadian authorities have not exercised their right to eject such people, I pointed out that their *de facto* citizenship might now be treated as a *de jure* qualification for the granting of permits. The Minister has promised sympathetic consideration. As regards the entry of wives and children of resident Indians the Government of Canada are ready to administer the rules made under the reciprocity agreement of 1918 with the utmost sympathy and fidelity.

7. Reviewing the tour in the light of actual achievement and of prospective reform, I am glad that a deputation was sent to the Dominions. The constitutional importance to India of negotiating directly with the Dominions on matters of mutual interest through an accredited representative is too evident to need elaboration. What is less obvious is the educative value of such visits both for facilitating the realisation of the immediate objects in view and the promotion of a spirit of imperial solidarity. India has suffered in the past from lack of knowledge and of understanding. The progress made by her during the last 60 years is hardly known outside this country. The average citizen of a Dominion still regards India as a land of mixed poverty and splendour, barbaric in outlook and aspiration as well as in magnificence. He has had no

opportunity of meeting Indians of refinement and culture, without which it is impossible to dissipate the phantom of superiority born of an imperfect appreciation of Indian capacity. The incentive to active trade relations between India and the Dominions has also been lacking to promote the personal intercourse which is the best solvent of prejudice. The only means of securing better relations in the future is the promotion of such intercourse. Of the desire of the Dominions to understand India there can be no doubt. In the task of stimulating and satisfying this desire the educated people of India, no less than the Government, must do their full share.

Of the services of Mr. Bajpai as Secretary, I cannot write enough. To uncommon ability he adds uncommon industry and uncommon courtesy. It was a piece of good fortune to me that his services were available. I recommend them earnestly to the recognition of the Government of India.

I have the honour to be,

SIR,

Your most obedient servant,

V. S. SRINIVASA SASTRI,

CHECKED
2023-04