

**REPORT ON THE
LAND REVENUE SYSTEM
OF BURMA**

REPORT
OF THE
COMMITTEE APPOINTED TO EXAMINE THE
LAND REVENUE SYSTEM OF BURMA

Members of the Committee.

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VOLUME I. The Report.

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The books which have been found most useful in studying the land revenue systems of the various provinces are given in the following list. References are made to some of them in the text of the report. Certain volumes relating to the development of revenue procedure in Burma have been freely used and, for convenience, are referred to by the abbreviations indicated against their respective titles. No authority has been cited for references to manuals in current use in Burma.

Burma.

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- The Burma Irrigation Manual, 1914.
- The Lower Burma Town and Village Lands Manual, 1913.
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- The Manual of the Revenue Settlement Department, 1887.
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- Report of the Committee on Survey and Land Records, 1915 (Volumes I and II).
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- Note on the Functions of the Land Records Department (undated).

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- Land Administration Acts (1916) and Rules (1918).
- The Standing Orders of the Financial Commissioner (unbound).
- The Manual of Land Revenue Administration, 1908.
- The Settlement Manual, 1915.
- ✓ The Report of the Colonies Committee, 1908.

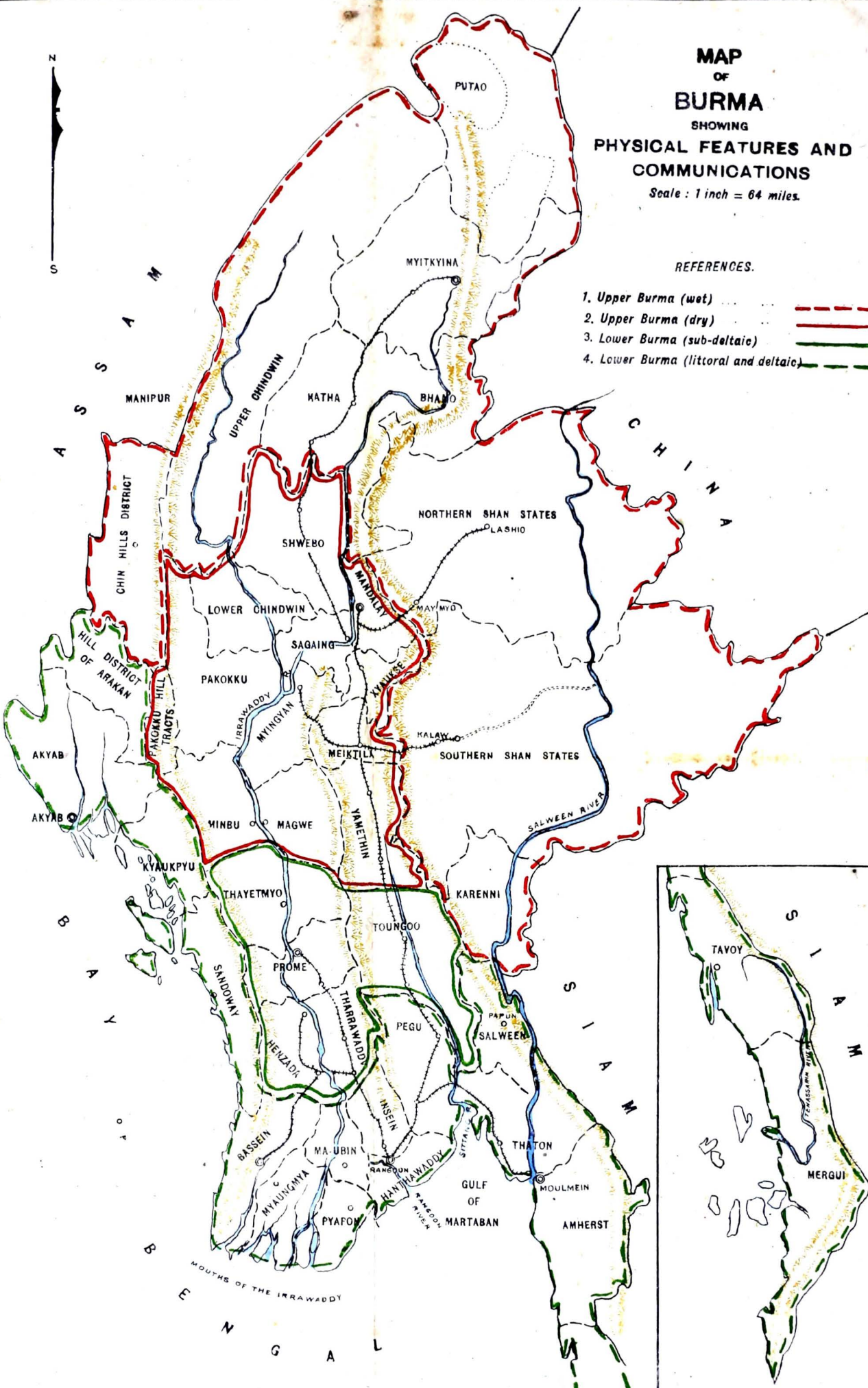
MAP OF BURMA

SHOWING
PHYSICAL FEATURES AND
COMMUNICATIONS

Scale : 1 inch = 64 miles.

REFERENCES.

1. Upper Burma (wet) ---
2. Upper Burma (dry) ---
3. Lower Burma (sub-deltaic) ---
4. Lower Burma (littoral and deltaic) ---



PART I.

Description.

CHAPTER I.

INTRODUCTORY.

1. We have been directed to investigate the settlement, assessment, collection and general administration of land revenue in Burma, and also the conditions of landholding and tenancy. Our instructions laid down the following heads of enquiry:—

The terms of reference.

(a) The survey, preparation and maintenance of land records of all areas included in existing surveys, as well as the best method of extending surveys of reasonable accuracy to areas not at present so included.

(b) The organization of the land records staff, and whether supervision over the revenue surveyor is adequate or not, or whether the actual maintenance of village maps and records may not be entrusted to a cheaper village agency, paid by a commission on the land revenue, the revenue surveyors becoming revenue inspectors, but reduced somewhat in numbers, and the present Inspectors becoming Assistant Superintendents of Land Records.

(c) The existing system of settlement, including the question whether a change should not be made, and, if so, how, to a system of fixed assessments and permanent survey numbers.

(d) How far the land records establishment should be made better use of in conducting settlement operations.

(e) The actual assessment of the land revenue, the more complete differentiation of the soil areas, and the possible application of the soil unit system as a method of differentiation from village to village in the determination of rates.

(f) The system of recording the demand and collection of land revenue, with particular reference to the question whether it is not possible to substitute a form of receipt book kept in the possession of every occupant of land, for the system of tax-tickets prepared in the district office now in vogue.

(g) The system in vogue of using coercive processes for the collection of land revenue, the system on which land revenue is collected from non-resident holders, and the method on which commission is paid to village headmen.

(h) The distribution of revenue accounts and registers between the revenue surveyor, the township and subdivisional officers and the district office, and the extent to which any changes seem advisable in this distribution.

(i) The better utilization, for detailed practical use, of the information collected regarding landholders, non-landholders, tenants, and rents paid to landholders and to occupants who are not landholders.

(j) The extent to which absenteeism prevails among landholders in Burma, as compared with absenteeism among occupancy ryots in ryotwari tracts in India, and how far land is passing into the possession of non-cultivators who are becoming merely rent collectors collecting rents from tenants at will, and the extent to which tenants in the Lower Burma districts stand in need of protection.

(k) The system on which large grants should be permitted to capitalists desirous of growing commercial crops on a large scale, and what system of tenure should be adopted to protect the indigenous population of the tracts in question from becoming mere tenants at will, or labourers of such capitalists.

(l) Any other matter connected with the administration of land revenue, land tenure, record of rights, assessment and collection of land revenue, on which a recommendation to the Government of Burma appears desirable.

We were directed to examine the working of the land revenue system in the provinces of India where conditions most resemble those of Burma, and, after such examination and comparison, to make recommendations concerning any changes which we considered expedient in the Burma Revenue System.

2. Before we proceed to report in detail on the questions referred to us, it seems desirable that we should

Proceedings and
acknowledgments.

give some account of our proceedings. We assembled in Rangoon on December 3rd, and throughout the rest of the month toured in the Pegu, Meiktila and Myingyan districts, where the working of the Burma land revenue system was examined in field and office, and in the Kyaukse district, where the work of a settlement party was examined in detail. In the course of the month we issued a questionnaire to all officers of the Burma Commission, the Burma Civil Service and the Land Records Department whose experience made it likely that their opinion would be of value to us. January and February were taken up by a visit to Madras, Bombay, the Punjab and the Central Provinces and Berar. In all these provinces, we were shown the detailed working of the land revenue system both in the field and in office by the officers most qualified to do so; in Madras by Mr. H. A. Watson, Director of Land Records, in Bombay by Mr. F. G. Anderson, Commissioner of Settlements and Land Records, in the Punjab by Khan Bahadur Sheikh Rahim Baksh, Director of Land Records, and in the Central Provinces and Berar by Mr. C. G. Chenevix Trench, Commissioner of Settlements and Land Records, and Mr. J. F. Dyer, Revenue Secretary to Government. In Madras, the Punjab and the Central Provinces, we were able to inspect a district under settlement. In Madras, the details of settlement operations were explained to us in the deltaic district of Tanjore by Mr. C. E. Jones, and in the upland district of Bellary by Mr. J. Venkatanarayana Naidu. In the Punjab, we visited the Montgomery district under the guidance of Malik Mahomed Hayat Khan, and in the Central Provinces, the Chanda district under

that of Mr. Trench and Mr. Thakur, the Settlement Officer. In Madras, we inspected the Survey Office and in Poona the Photo zincographic Office. To the officers mentioned above, to the Hon'ble Sir George Curtis, K.C.S.I., Member of Council, Bombay; Mr. M. E. Couchman, Second Member of the Board of Revenue, Madras; Messrs. T. E. Moir, C.I.E., G. A. D. Stuart, and G. A. Hoag, all ex-settlement officers in Madras; Mr. F. V. P. Gompertz, late officiating Director of Survey, Madras; Mr. Dongre, Extra Assistant Commissioner, Berar; Mr. W. C. F. Waterfall, Settlement Officer, Raipur, and Mr. V. R. Khishty, Deputy Director of Land Records, Central Provinces, who gave us the benefit of their experience in the statements which will be found at the commencement of Volume II, and to Mr. L. E. Buckley, C.S.I., First Member of the Board of Revenue; M.R.Ry. P. Narayana Menon A/L., I.S.O., Secretary to the Board of Revenue, Madras; Mr. P. J. Fagan, C.S.I., Financial Commissioner; Mr. D. J. Boyd, Revenue Secretary to Government, and Mr. M. A. Leigh, Senior Secretary to the Financial Commissioner, Punjab, our warmest acknowledgments are due, not only for the information with which they furnished us, but also for the trouble they took to make our tour in their provinces as profitable and as pleasant as possible. We returned to Kangoon on the 11th March, and thereupon visited the Pyawôn district, where we inspected the work of the Special Survey Party, and the Tharrawaddy and Yanèthin districts where we examined the experiments in working the new land records forms now being conducted in those two districts. We then proceeded to Shwebo, where we saw a second settlement party at work, and to Myitkyina, where we investigated land revenue problems in remote and backward areas. We arrived in Maymyo on the 20th April.

3. Our report is in two volumes. The first contains the report itself which is divided into two parts. In the first part we attempt to describe the Burma land revenue system as it functions to-day. There are many features which cannot be fully comprehended without examining the historical and economic conditions by which it has been moulded and we therefore describe these so far as appears necessary. The terms of reference contemplate some enquiry into the general policy directing land administration, including the issue of grants and leases, land alienation and the protection of tenants. But this is an intricate subject which could not be treated adequately without much more attention than we have been able to devote to it. We have therefore confined our enquiry to matters immediately connected with the assessment and collection of land revenue, and only make such incidental references to land administration as our main subject requires. In Part II we examine the criticisms which have been levelled against the system in the past and in the evidence submitted to us, and also the defects which have come to our notice during our inspections, and make recommendations to meet them. We add as appendices a summary of our recommendations, and notes on the land revenue systems of the four Indian Provinces we visited. In every case the facts given in these notes have been checked by an authority in the Province concerned but, for any opinions expressed or comparisons drawn, we alone are responsible. Volume II of our

The scheme of the report.

report contains the notes of our discussions with officers in India and the replies to our questionnaire submitted by officers in Burma. With one or two exceptions we recorded no oral evidence in Burma. The time at our command did not admit of this and the replies to the questionnaire were so full as to render it unnecessary. Individual acknowledgment of the suggestions and criticisms by which we have profited would add considerably to the length of the report, and, in some instances, where a suggestion has been received in different forms from more than one source, it would be difficult and invidious to specify its actual origin; as a rule therefore we have abstained from detailed references to the evidence which we have received and the settlement reports which we have consulted.

Little comment on the nature of our task is called for from us. Its magnitude and difficulty will be evident from our report. The mass of literature on the Burma land revenue system is enormous. None of the questions with which we were confronted is new. There is not one which has not been discussed at length in the past, and not one regarding which different opinions have not been held by officers of great experience, often by the same officer at different times. In these circumstances, it is perhaps not surprising that we have been unable to come to a unanimous conclusion on all points.

4. In the course of our report we make frequent reference to conditions in the Indian provinces which we visited; The term "India," Madras, Bombay, the Punjab, the Central Provinces and Berar which, although attached administratively to the Central Provinces, has a quite distinct land revenue system. Where we use the term "India" in this report in contradistinction to Burma we are referring to these provinces only.

5. As a preliminary to the report, it seems essential to attempt an outline sketch of the physical character and economic constitution of Burma. The total area is 236,738 square miles. It is a land of mountain ranges and long rivers. Three ranges spread out fanwise from the north. The Arakan Range running from the north to the south-west cuts off the administrative division of Arakan from the rest of Burma. From the north to the south-east the Shan hills ending in Tenasserim form the eastern boundary. Between these two the Pegu Range divides the province into two halves, drained respectively by the Irrawaddy and the Sittang. Throughout Lower Burma the south-west monsoon gives such an abundant rainfall that rice, the staple food of the whole province, can be grown without irrigation and without fear of failure, and the deltas of the two rivers form the great rice-growing tract. The gross cropped area in Lower Burma is 9 million acres, and of this over 8½ million acres are cultivated with rain-fed rice. To the north of the deltaic districts, a tract of diminishing rainfall gradually merges into the dry zone of Upper Burma. Here the surface is undulating or hilly and the country arid, with large stretches of barely cultivable or wholly uncultivable rock and sand. Dry crops predominate, and in the Myingyan district in the centre of the dry zone, out of a gross cropped area of over 700,000 acres, less than 50,000 acres are under rice. North of the dry zone come the hilly districts of Upper Burma

in which the rainfall is heavy and rice is again the predominating crop. Natural conditions and the lack of population, however, prevent its being grown on a scale in any way comparable with that of the delta districts. In Upper Burma as a whole rice covers somewhat over a third of the gross cropped area of 6 million acres. About half this area depends on irrigation and the rest, except in the hill districts, is very liable to failure. In Burma, therefore, the two extremes of tropical agriculture are touched; there is in Lower Burma a vast area of secure rice land dependent solely upon rainfall, and in Upper Burma land as poor and as insecure as can be found in any part of India.

6. The Arakan Division and part of the Tenasserim Division passed under English rule in 1826, the rest of Lower Burma, including the whole of the Irrawaddy and Sittang deltas, in 1854, and Upper Burma in 1886. The delta country, now so closely peopled, when taken over, was an almost uninhabited swamp. Nearly twenty years later it could still be described as "a large tract of waste land with a few patches of gradually increasing cultivation scattered about." S.M.I., 65. Anyone could appropriate as much or as little waste land as he liked by the act of cultivating it. He could sell, mortgage or let it, and his heirs succeeded to his interest, but if he quitted it another man could take it up and his rights were extinguished if the newcomer occupied the land for ten years without his objecting. That was the only tenure recognized under British rule, and, for nearly twenty years from the occupation of Pegu, a population, largely consisting of fishermen, salt-boilers, itinerant traders and potters, cultivated for home consumption patches of a few acres in the jungle, shifting almost annually S.M.I., 58. S.M.I., 6.

7. In 1869 the Suez Canal was opened and almost immediately an export trade in rice grew up, accompanied by a striking increase in the population, in the area cultivated, and in the area of individual holdings. to industrial agriculture.

This abrupt change in agricultural conditions was signalled by the export of rice in steamers through the Suez Canal for the first time in 1872. Although in three of the eight years ending in 1869-70 the export of rice had been swollen by famines in India and China, the average of the period was only 363,000 tons. In 1870-71 the total reached 440,000 tons, in the following year 487,000 tons and in the two succeeding years 720,000 and 811,000 tons respectively. Steam rice mills were erected in increasing numbers. In 1867 there were only 3 such mills in Burma, by 1872 the number had risen to 26. A large annual immigration of coolies from India began; at first they worked in the mills but then took to agricultural labour. There was a change even in the kind of rice generally cultivated. In the early days the bulk of the exports had been the soft grained rice most valued in China and for home consumption, but this would not stand shipment to Europe and a hard grained variety took its place. In 1870 the area under rice was 1,712,030 acres. During the following year it only rose by 21,785 acres, but in 1871-72 by 102,200 acres. Then for upwards of thirty years the average rate of increase exceeded 150,000 acres a year. Agriculture was no longer carried on primarily for home consumption but for export, and it is a distinctive feature in the agricultural economy of Lower Burma that almost the whole country has

A.R.A.R.
1871-72,

93-

A.R.A.R.
1873-74,

86.

A.R.A.R.
1871-72,

145.

been brought under cultivation by small cultivators producing for an export market. The rapid growth of cultivation led to elaboration of the revenue system but, before a suitable machinery had been organized, the attention of Government was distracted by the annexation and subsequent pacification of Upper Burma. In Upper Burma the conditions of agriculture were very different from those of Lower Burma, the tenures were complex, the crops numerous and the harvest precarious. But the revenue system was built up by officers who had served in Lower Burma, and naturally reflects their experience and traditions. The difficulties of adapting Lower Burma practice to conditions so different absorbed much of the energies of revenue officers and the problems of Lower Burma receded somewhat into the background; when they again became prominent the position had altered greatly. Over large areas the pioneer cultivator had succumbed to the large landlord or moneylender, cultivating a big estate by an agent or leasing it to tenants. An agricultural revolution had occurred, and the shifting cultivation for home consumption, which characterised the delta until 1870, had been replaced by industrial agriculture, leading up to the position now found in the more developed areas where labour for earth-work, ploughing, the digging up of seedlings, planting them out, the herding of cattle, the reaping, threshing and carting of paddy are all separate operations performed by different people and the division of function has proceeded almost as far as is possible in agriculture. More recently, with the development of commercial crops, a similar tendency has been noticeable in Upper Burma.

CHAPTER II.

REVENUE ORGANIZATION AND MACHINERY.

8. The principal enactments relating to the Revenue System of Burma are the (Lower) Burma Land and Revenue law. Revenue Act, 1876; the Boundaries Act, 1880; the Burma District Cesses Act, 1880; the Financial Commissioner's Act, 1888; the Upper Burma Land and Revenue Regulation, 1889; the Lower Burma Town and Village Lands Act, 1898; and the Burma Canal Act, 1905; these, together with the Rules under them having the force of law and the authoritative Directions, set forth the policy of Government and regulate procedure. The Rules and Directions are published with the Acts in Manuals; these are supplemented by separate volumes of Instructions, of which the most important are the Settlement Instructions, the Land Records Manual and the Survey Manual.

9. The principal revenue authority in Burma is the Financial Commissioner. The settlement and assessment of land revenue is dealt with in the Settlement and Land Records Departments under the Commissioner of Settlements and Land Records. The collection and general administration of revenue is controlled by eight Divisional Commissioners who are members of the Burma Commission. In each division there are three to five districts each of which is under a Deputy Commissioner who is usually a member of the Commission but may belong to the provincial or Burma Civil Service. In revenue matters the Deputy Commissioner has an assistant in his office, known as the *Akunwun*, who usually belongs to the Subordinate Civil Service. The functions of this officer are to watch over the collection of revenue throughout the district, to see that the details of revenue procedure are correctly observed and to advise generally on revenue administration. In each district there are usually two or three subdivisions each under a resident Subdivisional Officer, who may be a junior member of the Commission but ordinarily belongs to the Burma Civil Service or sometimes to the Subordinate Civil Service. In each subdivision, there are two to four townships, corresponding to the *taluk* or *tahsil* of an Indian province, each of which is under a Township Officer who is a member of the Subordinate Civil Service.

Lower Burma, at the annexation, was divided into *myōs* or *taiks* under officers known as *myōthugyīs* or *taikthugyīs*. These areas were retained as administrative units within the district under the designation of *taiks* or circles. The officers became known as *taikthugyīs* or circle headmen; they were given petty magisterial powers, but their chief duty was the collection of revenue within their charges, and they were expected to measure up and assess cultivated land. After the re-organization of the revenue system during the late seventies, they were required to appoint a surveyor

as *taksaye* or clerk. Below the circle headman there was a *kyedangyi* in each hamlet who was originally, as the name implies, the chief tax-payer, and came to be regarded as a village headman. But when in 1886 in many parts of Upper Burma a much stronger village system with separate villages each under its own headman was found, this was adopted as a model for the whole country, and in Lower Burma a village headman was appointed to each village or group of hamlets, the post of circle headman being allowed to lapse as vacancies occurred. The revenue is now collected by village headmen, rarely still by circle headmen, who pay it into the township sub-treasury; there are usually 80 to 120 villages in a township.

Certain officers outside the regular line of district administration have indirect relations with land records or revenue work. The Excise Commissioner, who is subordinate to the Financial Commissioner in a position analogous to that of the Commissioner of Settlements and Land Records, is also Inspector-General of Registration, and is thus indirectly concerned with land records. In some townships members of the Judicial Service are treasury officers, receiving revenue and disbursing pay. In Native States which cover 68,000 square miles, more than one quarter of the province, and in remote areas, the Settlement and Land Records Departments have little or no concern with revenue administration.

10. The appointment of Settlement Commissioner and Director of Land Records and Agriculture was sanctioned in 1900. On the formation of a separate department for Agriculture in 1907, the officer in charge of the remaining duties became Commissioner of Settlements and Land Records. He is responsible to the Financial Commissioner for the control of settlements and the administration of the Settlement and Land Records Departments. Among his miscellaneous duties are the allocation of grants for agricultural loans, the publication of crop forecasts and other periodical reports on crops and prices, the revision of the Famine Manual, the demarcation and survey of fisheries, and inland trade registration; except with regard to the last two items, which are dealt with by the Development Commissioner, he is subordinate to the Financial Commissioner. It may be worth noting here that he has no direct connection with the Registration Department, and that he only deals with water rates and drainage rates when questions on these matters are referred to him.

11. The functions of the Settlement Department are to survey and assess land and prepare registers of ownership and occupancy. Settlement enquiries are held periodically, a roster being maintained to show the order in which districts will come up for revision of the settlement. There are three to six settlement parties, usually four or five, according to the number of districts in which settlement is due. In charge of each settlement party is a Settlement Officer who is usually a member of the Commission placed on duty in the Settlement Department. Members of the Burma Civil Service and Land Records Service have been deputed to settlement work and one post of settlement officer is reserved for members of the former service but, owing to a reduction in the number of parties, this post is now vacant. In each

party there are usually three Assistant Settlement Officers. One of these should be a member of the Commission, another may be a member of the Burma Civil Service, but two are ordinarily officers who have been promoted from the inferior settlement establishment to the ranks of the Subordinate Civil Service and are kept on duty in the Settlement Department. Members of the Subordinate Civil Service without previous settlement experience may also be appointed as assistant settlement officers. The normal establishment of a settlement party comprises ten inspectors, fifty field clerks, two office clerks, and a record-keeper with chainmen and other menials. The Settlement Officer has power to entertain within budget limits as many additional temporary clerks as may be necessary for the compilation of statistics or, under exceptional circumstances, for field work.

12. On the completion of an original settlement an establishment

The organization of the land records department. is required to maintain the registers, and prepare the annual assessment roll. As the essential function of this establishment is to keep up the original survey from year to year for the purpose of the annual assessment, their work is generally referred to as "supplementary survey," but in areas of established cultivation where rice is the sole crop, no great amount of survey work is needed. An area where settlement work has been completed is described as "under supplementary survey," and any area which has not been settled is described as "outside supplementary survey." The latter term is sometimes also used to cover areas where settlement has been introduced but survey is not maintained. The work of supplementary survey is performed by the Land Records Department. This department consists of a superior branch, the Land Records Service, organized on a provincial basis, and an inferior branch, the district establishments, organized separately within each district. In addition to the regular administrative chain there is a special survey staff to deal with areas in which, owing to rapid extensions or some other cause, the regular staff cannot cope with the survey work. The origin and development of the Land Records Department are described in Volume II; the following paragraphs give a brief account of the central and local administration, of special branches such as survey and press work, of the manner in which officers and men are recruited and trained, and of the relations between the various branches of settlement, land records and district revenue administration.

13. In the administration of the Land Records Department the Central administration. Commissioner of Settlements and Land Records is assisted by a Deputy Director, who hitherto has ordinarily been a member of the Commission, and an Assistant Director, who is a senior member of the Land Records Service. The functions of the Commissioner and Deputy and Assistant Director in regard to district land records are confined to inspection and advice; the responsibility for the conduct of the work rests with the Divisional Commissioners and Deputy Commissioners. The Commissioner of Settlements and Land Records however has much to say in the selection of candidates for appointment to the Land Records Service and, subject to the control of the Financial Commissioner, arranges for the posting and transfer of officers. The

Commissioner usually inspects land records work in districts where settlements are approaching, in progress or recently completed. The Deputy and Assistant Directors divide between them the responsibility for inspection in the thirty-four charges where a full land records staff under a Superintendent is employed, and aim at visiting each district twice a year, once in the rains and once in the field season.

14. At the head of the land records staff of each district there is a Superintendent of Land Records. The officers. Local administration, and subordinate staff of the Land Records Service are now paid on time scales which have only recently been introduced. The officers start as Assistant Superintendents on Rs. 150 per mensem rising to Rs. 300, and then, as Superintendents, receive annual increments of Rs. 20 to Rs. 800. There is an efficiency bar at Rs. 500. Below the Superintendent there is an Assistant Superintendent in a few heavy districts. The subordinate establishment consists of 6 to 10 or more inspectors on a pay of Rs. 75 to Rs. 125, and 50 to 100, revenue surveyors on a pay of Rs. 35 to Rs. 65 per mensem. The revenue surveyors join as apprentices on Rs. 18 and after passing an examination in practical Land Records work become reservists on Rs. 25. They are required to have spent a year at a survey school and to have passed a public examination in survey held hitherto by the Educational Syndicate; in many Lower Burma districts most of the staff have also passed the Vernacular Seventh Standard Examination (Middle School Final) and the syndicate examination in arithmetic and revenue law. So far inspectors have been promoted from revenue surveyors, but the principle of direct nomination has now been accepted.

15. In Burma the unit of survey is the agricultural unit; each plot separately treated for agricultural purposes was Survey and mapping. originally surveyed separately and given a separate field number. This is a distinctive feature of the Burma revenue survey; the survey number is neither an artificial unit nor a property unit but an agricultural unit. It has always been a tradition of the department that this survey should be maintained annually by the local surveyor on the same principle. But, for some years past, a special staff has been maintained temporarily from year to year to give assistance where required. This special survey establishment is managed by a selected Superintendent with headquarters in Rangoon. Special arrangements for survey are also required in connection with grants and leases of land for cultivation and for the survey of town lands and fisheries. The printing of maps is carried out in the Government Press under the supervision of a Superintendent of Land Records deputed for that purpose.

16. Every revenue officer is required to undergo training in land records work and survey, and for this purpose is attached to a land records office for three months. Officers of the Commission who intimate a wish for settlement work and are recommended for the department are given a period of probation with a settlement party, but the arrangements for effecting this were revised shortly

after the beginning of the war and the present rules have not yet been applied. Candidates for the Land Records Service should be graduates of an Indian University with suitable qualifications in mathematics. As Assistant Superintendents on probation they receive a thorough training in survey during a course of twenty months with the special survey party, and then a training in Land Records work for a period of eighteen months under a selected Superintendent. They receive no training in settlement. Revenue surveyors join as apprentices and are required to undergo training in the practical duties of a surveyor for at least nine months, after which they are examined by the local Superintendent before appointment as reserivist.

17. In the early days the land revenue was fixed at acre rates by the Deputy Commissioner and the circle headman was responsible for survey, assessment and collection. When settlements based on cadastral surveys were introduced the circle headman ordinarily appointed one or more circle surveyors. With the substitution of the village headman for the circle headman the circle surveyor became a revenue surveyor, independent of the headman, often of better social position, and as a rule much better educated. This was the first step towards separating assessment from collection. The headman as collector of the revenue remained subordinate to the executive revenue officers, but the work of the surveyor required skilled supervision and a land records department had therefore to be organised for conducting the annual assessments. In the first instance, during original settlements, there was no distinction between the settlement and land records branches; part of the establishment moved on to the next district, the remainder stayed behind as the land records staff. At resettlement however the land records staff was fully occupied with the annual assessments and the settlement officer could make little use of it. Moreover special arrangements were found necessary for the maintenance of survey. Thus there are now four separate branches of the work; Survey, Settlement, Assessment and Collection. These have developed gradually and although interdependent are not intimately co-ordinated. The special survey branch does such traverse and cadastral survey as the Commissioner, on reports from district officers, directs, but does not carry out demarcation or the mapping of holding boundaries generally termed "holding marking." A settlement party working in a district requires certain maps and statistics from the land records department and may receive assistance in crop measurement from the staff of that department, but otherwise its work is quite distinct; during settlement operations land records work proceeds uninterruptedly along its usual course. The subordinate land records establishment is under the direct supervision of the district superintendent, and is in no way subordinate to the township or subdivisional officers, who can only issue orders to the inspectors and surveyors through the superintendent. The district superintendent himself has no disciplinary powers over his men; all orders regarding postings, promotion or transfers, although usually in accordance with the superintendent's recommendations, are actually passed by the Deputy Commissioner, in whom alone do the revenue and land records departments find a common centre.

18. Land revenue in general covers several heads which fall outside the terms of reference, such as revenue from mines, fisheries and salt. For the purposes of this Committee it may be regarded as comprising not only land revenue proper, which includes the assessment on land, *taungya*-tax, capitation-tax and land rate in lieu thereof, and the *thathameda*-tax, but also water rate and local cesses. In Upper Burma the water rate and navigation tolls still fall within the definition of land revenue but are dealt with under the Burma Canals Act. In Lower Burma a cess for local purposes was formerly levied as land revenue but is now imposed under the Burma District Cesses Act and collected together with land revenue. There is no corresponding charge in Upper Burma.

Land revenue is assessable on culturable land. The *taungya*-tax is a charge per head or per household imposed in areas of shifting cultivation, usually in the hills, in lieu of land revenue. Capitation tax is paid, in addition to their land revenue, if any, by all male adults in Lower Burma unless exempted by general or special orders; in certain of the older towns a land rate on covered and uncovered areas is assessed in lieu of capitation-tax. The *thathameda*-tax, which is levied in Upper Burma only, is a tax on all income derived from sources other than agriculture; agriculturists are only exempt if they have no extraneous sources of income, which is seldom the case. The tax is assessed at an average rate per household which varies from village to village as separately determined for each village by the settlement officer. The annual demand varies therefore with the number of households; it is distributed over the households by local assessors known as *thamadis*. Thus, though the village rate might be Rs. 5 per household, the assessments on individual households might vary between four annas and Rs. 20 or more. The water rate and drainage rate are service payments levied under the Burma Canals Act.

CHAPTER III.

SURVEY.

19. From the first introduction of an acre rate, assessments in Burma have depended on an annual survey. In the

Early surveys. early days headmen were expected to conduct the surveys. But great evils were found to attend the annual measurement and in 1858 a first attempt was made to substitute a fixed assessment. For the next twenty years experiments were made in this direction and, in addition to the annual measurement by headmen, a professional survey was introduced as a basis for the settlement of fixed assessments. In 1877 the project of a cadastral survey was mooted, but the dominant idea was still to do away with the annual measurements and bring the whole of the surveyed area under fixed settlements. It was anticipated that the work already done by the Provincial Revenue Survey and Settlement, covering nearly 500 square miles in the Rangoon and Henzada districts, could be utilized. This survey had not been connected with the trigonometrical points and consisted of separate independent surveys for each revenue circle, but it was thought that, although the boundaries would need resurvey, the cadastral portion of the work, the interior details, would only require check and re-adjustment. S.M. I, 167.

20. This proposal was discussed at a conference of revenue officers

Holding and field surveys. in Burma attended by a representative of the Survey of India Department. Hitherto the survey had been "field-by-field," each field mapped being an actual agricultural unit; this system facilitated partitions, which naturally follow field boundaries, and also the assessment of fallow. The advantages were recognized but the additional cost of a field-by-field survey was thought prohibitive and it was decided to survey holding boundaries only. The maps were to be on a scale of 16 inches to the mile; each map was to contain a kwin, "the Burmese equivalent to the *mousah*." The kwin was a geographical unit ordinarily bounded by streams or other natural objects and known to the people by a distinctive name. Circular drainage tiles were to be used as survey marks for demarcating theodolite stations, the boundaries of grazing lands, monastery lands, tanks, fisheries, salt lands, village sites and holding tri-junctions. The intermediate bends of holding boundaries were not to be demarcated unless very deep as the bund was considered an adequate demarcation. The experience of one season demonstrated however that a field-by-field survey would be little more expensive than a holding survey at the outset, would be less expensive to maintain and in many respects more useful to district officers. It was decided therefore to revert to the field survey, giving a separate field number to each plot separately treated for agricultural purposes; this has been the standard system of survey in Burma ever since. S.M. I, 171.

S.M. I, 172.

S.M. I, 179.

and has become bound up with the revenue system of which it is a distinctive and essential feature. Nowhere in India has a similar survey been attempted and no other mode of survey seems so well adapted to a fluctuating assessment on ryotwari holdings of rice land.

21. The original revenue survey over the whole of Burma was conducted by officers of the Survey of India, who carried out not only traverse but cadastral work. The operations were conducted under the Boundaries Act, No. V of 1880, which is still the legal basis of survey and demarcation. Main circuits, of about 50 square miles each, were laid down and connected with all Great Trigonometrical Stations within easy reach, kwins were demarcated, traverse lines were run along kwin boundaries, with sub-traverses where necessary; the cadastral details were built on these by chain and offset, and plotted direct upon a plane table, but the cadastral measurements were not recorded. In 1880, the total cultivated area was about 5,497 square miles, in 1890, with Upper Burma newly included, the area was about 12,250 square miles. The cultivated area is now 21,000 square miles, the occupied area 27,000 square miles and the total area under supplementary survey over 50,000 square miles. Practically the whole area has been surveyed on the above system, the greater portion by the Survey of India, the balance by the Land Records Department, either by the local staff or by a special survey party.

The detailed survey is kept up to date by supplementary survey performed by the land records department. For each kwin an area statement showing the area of each field was prepared at the original survey. Ordinarily the land records establishment is expected to depict on the map every alteration in field boundaries, and to prepare an annual supplementary area statement showing in parallel columns the area, before and after the alteration, of each field affected by a change. Where, however, the cultivation is shifting or temporary, the surveyor is permitted, while depicting the area and shape of new plots correctly, to show their approximate position on the map; and in *ya* land the maintenance of field details is no longer strictly required, only permanent changes need be recorded. Although the surveyors are expected to bring every kwin map up to date annually, it has been found that where changes are numerous and long continued, particularly on newly-cleared or flooded lands, they cannot keep pace with them. In such cases resurveys are necessary. These should ordinarily be performed by the local staff and in most districts of Lower Burma it is now the practice to group the district staff for survey work during March and April. The maps and area statements have to be completed in office under responsible supervision, and grouping at a suitable headquarters is therefore necessary for some part of the recess. Where there have been abnormally rapid extensions or large physical changes the resurvey work assumes such proportions as to call for assistance from the special survey establishment, which has its headquarters in Rangoon.

After an original or revision survey, a stock of maps sufficient for 20 to 25 years is printed. If the supply runs low and a resurvey is not required, one copy of the map is revised, and sent for printing.

As already mentioned, map printing is carried out in the map printing department of the Government Press to which a superintendent of land records is deputed as an assistant to the Superintendent of Government Printing.

22. In addition to the original, extension and revision surveys by the local or special staff, surveys are often required by members of the public. These private surveys may relate to applications for the grant or lease of land or be required by people who wish to raise or settle some matter in dispute. Applications relating to large areas of land, such as mineral concessions or rubber plantations, are usually entrusted to the special survey establishment; applications by peasant cultivators may be dealt with by the regular local staff or by temporary surveyors. Surveys required in connection with land disputes are carried out by the regular surveyors at any convenient time.

CHAPTER IV.

THE PRINCIPLES OF ASSESSMENT.

23. The system of land revenue in Burma is ryotwari; the landholders are not regarded as landlords in receipt of rents, but as agriculturists cultivating their own lands. This description however is rather misleading, as in some districts more than half the total area is cultivated by tenants, and not infrequently in the rice plains of Lower Burma one man may hold hundreds, or even thousands, of acres scattered over several kwins, while in parts of Upper Burma, especially in the dry zone, large estates, consisting of one or more whole kwins, are occasionally found. The land revenue is settled by periodical enquiries into the profits and circumstances of cultivation and agriculturists. It purports to represent a portion of the profits of cultivation and to fluctuate with the area of crops harvested, but, as a rule, is fixed on the land, and not on the crop grown. As already stated, it includes also the capitation-tax in Lower Burma and the thathameda tax in Upper Burma. If, on the expiry of a settlement, a rise in the profits of cultivation justifies a large enhancement, this is taken by periodical increments until the full demand is reached. If the rise in the profits result from improvement of the land, the cost of improvement is considered in fixing the assessment. If an improvement be made by Government, the expenditure is recouped by a rate, representing payment for the service rendered, and the enhanced profits are further liable at resettlement to an enhanced assessment of land revenue. Another service payment is the cess for Local Funds. The following paragraphs explain the development and application of these principles. In paragraphs 24 to 32 we deal with the basis and standard of assessment and in the remaining paragraphs with the method of assessment and miscellaneous matters.

24. In Burmese times the taxes levied varied from place to place and from person to person; Karens, fishermen and betel-gardeners sometimes paid revenue in money, but more often made appropriate contributions in elephant tusks, wild honey, dried fish or betel-nut. In most places, however, probably everywhere, some, and perhaps all, cultivators paid a tax proportioned to the number of ploughs they used; the rate was often different according as they cultivated gardens, rice land or dry land. The assessment apparently was supposed to represent one-tenth of the value of the gross produce.

S.M. I, 7.

25. This tax on cultivators was continued after the annexation of Arakan and Tenasserim. Gradually the area per plough was standardised, so that the tax became a tax on area, a tax on the land rather than on the cultivator, and the tax on a standard area of land passed naturally into a tax at acre rates. In Tenasserim the earliest acre rates were supposed to represent one-fifth of the value of the gross produce. but the grounds on which an assessment of one-fifth was

S.M. I, 9.

substituted for the customary Burman assessment of one-tenth are not [1] on record. It deserves notice however that, almost from the beginning of British rule, one distinctive principle of the present revenue system of Burma is found; there was no fixed contract between Government and the cultivator regarding the assessment of any given area of land, but acre rates were fixed at which each cultivator paid revenue according to the area of his cultivation. In the early days of Lower Burma, when people cultivated shifting patches in the jungle, no other system was so convenient and it has survived to the present day.

26. The earliest rates, which were based on enquiries from cultivators assembled in the villages, were uniform throughout the whole of a revenue circle, extending possibly over hundreds of square miles. The S.M. I, 7.

Revision of rates by
kwins. The next step in advance was taken in 1847 by Captain Phayre, later, as Sir Arthur Phayre, the first Chief Commissioner of British Burma. S.M. I, 9. He adopted as the area of uniform assessment, not the revenue circle nor even the village-tract, but a subdivision of the village-tract, the kwin. His other innovations were the determination of outturns by experiment and local enquiry in the field, and of produce values by enquiries into local and central prices and the cost of transport. He also prepared registers of cultivators and rough plans of the cultivated area. His system remained practically unaltered in its essential features until within the last few years, and his conception of settlement procedure, at least in Lower Burma, still governs the general course of operations.

27. The next period of settlement history presents a series of attempts to break away from the fluctuating system. Two alternatives were advocated. On S.M. I, 16, one the whole of a large area of land was leased 296.

to a body of cultivators representing the village; this was the village lease system. On the other alternative, the individual lease, land was leased for short periods to individual cultivators with liberty to extend free of charge over the adjacent waste. Although the lack of any corporate feeling among fortuitous collections of pioneers from every quarter, such as then occupied the scattered hamlets of the deltas, prejudiced any system of joint leases for a few years, so long as cultivation was extending slowly, both methods gave promise of S.M. I, 53. success. In 1876 the Land and Revenue Act was passed and in this the system of settlements at a fixed sum per holding for a term of years was still contemplated. But with the opening of the Suez Canal and the revolution of agriculture in Lower Burma both varieties of fixed assessment became unworkable. In some parts the population and the cultivated area were increasing at the rate of 10 per cent. annually S.M. I, 304. and an imperfect system of assessment under which the revenue grew with the area under cultivation had obvious advantages over an assessment fixed even for a short period. The Directions to Settlement Officers issued in 1880 ignored the question of settlement at a fixed sum per holding and the Directions to Revenue Officers which formed part of the same work frankly laid down that all cultivation as it took place

[1] But see the selected correspondence of the Commissioner, Tenasserim, (Rangoon 1916) p. 100. Mr. A. B. Maingy, the first Commissioner, reported that the land tax was 25 per cent. of the gross produce. This volume, which was not available during the writing of the present report, contains much supplementary information on the revenue system between 1826 and 1840.

S.M. I, 296. was immediately to be brought on to the register and assessed to revenue. There was thus a reversion to fluctuating assessments.

28. The settlements of 1879 and the Directions of 1880 inaugurate the modern period of settlement in Burma. While in the main these represented a development of the procedure invented by Sir Arthur Phayre there

Assessment on net profits. was in one matter of fundamental importance a very marked advance. It was decided that the assessment should represent a portion of the net produce of cultivation and no longer be based upon the gross produce.

S.M. I, 252. The term "net produce," however, did not carry its present significance. Two kinds of net produce were distinguished:—

- (a) The balance of the gross produce after deduction of the cost of cultivation only;
- (b) The balance of the gross produce after deduction of the cost of cultivation and also of the cost of living.

It was explained that the balance, if the cost of cultivation only be deducted, comprises "the cost of living of the agricultural family and therefore part of the wages of labour," while, if the cost of living be deducted as well, the balance "is exclusive of every outlay incurred in working the land and therefore represents the real net profits of cultivation." It was definitely laid down that the net profits of cultivation were "the only legitimate fund from which the land revenue should be drawn," and this balance was therefore formally adopted as the basis of assessment. The term "net profits" first invented and defined in this passage requires careful attention from any student of settlement literature in Burma. As noticed in the present Settlement Instructions, it corresponds with the economic conception of "rent"; if anything exceeding the net profits be taken from the cultivator, he must lower his standard of cultivation or of living, and will thus be rack-rented; if anything less be taken, the cultivator will retain part of the economic rent. Thus the net profits represent the amount which a tenant can afford to pay his landlord and correspond to "rental value" as defined in the present Settlement Instructions. After two settlements had been conducted on this basis and the reports submitted for consideration, it was summarily decided that the standard proportion of the net profits to be taken by the state should be one half.

29. Thus, on the annexation of Upper Burma in 1856, the land revenue assessment in British Burma was no longer based on the gross produce but on the net produce; in Upper Burma profits of cultivation. In Upper Burma it was

S.M. II, 34. found that certain of the land recognized as royal land paid rent, and that on the remainder nothing in the shape of rent, revenue or taxes was levied, the only general tax being thathameda. The rent on royal lands was ordinarily taken as a share of the gross produce. This continued for some years to be the basis for assessing rent on state land and it was proposed to extend the same principle to the assessment of non-state land. The earliest Directions, those of 1893, ignored

S.M. II, 56. both the gross produce and the net profits standards; they prescribed instead that the revenue should be based on the net produce, defining this as the balance of the average gross produce after deducting the average cost of cultivation. But in calculating the cost no allowance was permitted for the home labour of the cultivator and his family.

S.Q. I, 9.

The reason for excluding this is uncertain. At the attempt to base assessments on this principle in the settlement of the Mandalay district between 1891 and 1893 it was found inapplicable and the need for reverting to the gross produce basis was accepted by the Chief Commissioner. But the Government of India refused to consider any suggestions for an assessment on the basis of the gross produce. They laid down definitely that it should be taken as a settled principle of revenue administration that the profits of agriculture and not the gross produce are the source from which the State should recover its dues and the basis on which it should fix the demand. The proposal to assess revenue on the basis of the gross produce was therefore abandoned; the direction that it should be based on the net produce, though by definition equally inconsistent with the dictum of the Government of India, was retained. Thus two distinct standards of assessment were then in force; half the net produce in Upper Burma, and half the net profits in Lower Burma.

30. In Lower Burma the standard remained unchanged until the earliest settlements began to fall in for revision. Assessment on net produce; in Lower Burma, deducting the full cost of cultivation, It was then noticed by the Government of India that the nominal standard had never been attained nor even approached. They admitted that the low pitch of rents might be good reason for keeping below the half net profits standard until the rents actually paid reached the level of the net profits, but suggested that, in the absence of any such sufficient reason, an approximation to the nominal standard was desirable as a safeguard against evils "so rife in India—the middle man, the rent-receiving landlord, the land-grabbing and rack-renting money-lender." They even contemplated that a considerably larger proportion than one-half the net profits might be taken. The Local Government demurred that this would "have the appearance of a breach of public faith," but proposed to work up as rapidly as circumstances permitted to the half net profits standard. The Government of India on further consideration suggested that the net profits were unsuitable as a basis of assessment because the definition rested on three quantities which were practically indeterminable and which had been discarded elsewhere. The substitution of an assessment on rental values was advocated, and, when the Local Government reported that this would not be suitable, the Government of India suggested that it would be simpler to check the proposed rates either with the gross produce or, preferably, with the net produce, deducting the cost of cultivation only. Although the Local Government was unable to admit that the net profits were indeterminable, the opinion of settlement officers was ascertained regarding the feasibility of substituting net produce as the basis, and when the Government of India further pointed out that a diminution in the size of holdings consequent on the growth of population would entail a reduction of the net profits, the Local Government acceded to their views and adopted the net produce as the basis of assessment. It was understood at that time, however, that the cost of cultivation should be calculated on the assumption that each holding was cultivated entirely by outside labour, hired cattle, purchased implements, seed, etc. The net produce as thus defined was not at all the same thing as the net produce which had been adopted in Upper Burma.

S.M. II, 63.

S.Q. I, 80.

S.Q. I, 182.

S.M. I, 429.

S.M. I, 438.

S.M. I, 444.

S.M. I, 450.

S.M. I, 497.

31. The Government of India then objected that an injudicious officer, if permitted to calculate the cost of cultivation in this manner, might work out such a low net produce scale as would fail to give an adequate assessment. This objection was reinforced by the practical difficulties which were experienced in applying the new standard. Hitherto, in Lower Burma, as stated above, the deductions which had been made from the gross produce were the cost of cultivation and the cost of living. The cost of living represented the total expenditure of the cultivator and his family throughout the year. Although this "amounted really to little more than exempting from taxation the wages of labour among an easy-going, generously-living peasantry," it at least covered the cost of all home labour, so that no separate allowance under this head had been needed in working out the cost of cultivation, which had been confined to out-of-pocket expenditure and certain allowances for depreciation. The cost of cultivation, calculated on the new assumption that all labour and cattle were hired, was found unsuited for general application. Hiring was infrequent and the rates consequently were higher than if the practice of hiring had been general. It was therefore eventually decided to exclude the cost of home labour altogether from the cost of cultivation. The basis of assessment thus became the value of the gross produce less the out-of-pocket expenditure on cultivation and certain allowances for depreciation of cattle and implements. This, since 1900, has been the basis both in Upper and Lower Burma.

S.M. I, 429.

32. These successive changes in the basis of assessment in Lower Burma originated in an unfavourable comment by the Government of India on the discrepancy between the rate actually imposed and the theoretical standard; they suggested that either the basis of assessment, the proportion of the produce on which the revenue demand was calculated was too large, or else that the share to be taken as revenue was too high. But, in the event, the basis was enlarged, firstly by including the portion of the produce on which the cultivator lived, and then by including the portion of the produce which represented wages for home labour. The standard share to be taken as revenue however remained unchanged; the share was still one-half, but as, with a much more restricted basis, assessments had not yet approached the theoretical rate, a provisional standard of one-fourth was now prescribed for Lower Burma.

33. As has already been noticed, it has always been the Burma tradition, now for nearly a hundred years, that the assessment should fluctuate with the annual produce of agriculture: generally speaking, in Lower Burma, where cultivation is secure, it has fluctuated with the area under cultivation; in the insecure parts of Upper Burma it has fluctuated with the area matured. The disadvantages are obvious and the advantages have repeatedly been questioned. The earliest experiments in the direction

[1] of fixed assessments were made in 1858-59, within five years from the conquest of Pegu. For about 20 years the issue remained in doubt; both the Land and Revenue Act of 1876 and the Boundaries Act of

[1]. From the selected correspondence of the Commissioner, Tenasserim, it appears that the earliest settlements were usually annual village assessments. The total produce of the village was estimated, commuted into money at the average market price, and the tax was distributed by the villagers among themselves. In 1830 settlements were granted for three years, and in 1833, when Mr. Maingy

1880 contemplated fixed assessments as the normal arrangement, and the Directions issued to Settlement Officers in 1880 provided for assessment of the occupied area with no annual exemption of fallowed areas. Prior to 1865 every cultivator had been permitted to retain, free of all payment, a right of re-entry on land which he had once cultivated. Owing to the difficulties occasioned by the capricious abandonment of land, rules were introduced to check the practice and among them was a rule requiring cultivators to pay a fallow rate if they wished to exclude others from occupation. Subsequently in 1872 the grant of a fallow rate was limited to lands left uncultivated for good and reasonable cause. The Directions to Settlement Officers of 1880, however, laid down that the settlement officer should make an allowance for fallow areas in calculating rates, and the practice of granting a fallow rate was abolished, but cultivators were still allowed to apply for remission if they left their land uncultivated. Petitions were received against these new orders and in 1881, after a comprehensive review of the practice relating to fallow and remissions, the Chief Commissioner decided that it would be "best for the country, for the people and the public revenue" to retain the fallow rate. S.M. I, 327.

Ten years later the question was revived. One of the arguments against a fallow rate had been that the people left land uncultivated to take up virgin land elsewhere. This practice extended and attention was attracted to the accumulation of large estates by non-agriculturists who only paid the fallow rate on land for which they found no tenants. It had never been intended that large landowners should benefit by a rule framed to relieve peasant cultivators and in 1891 the policy of Government in this matter was laid down with greater precision and in succeeding years applied more strictly. In 1897 the privilege was further circumscribed by requiring cultivators to make a written application if they desired to obtain the benefit of fallow rates. This new rule was found to deprive many landholders of a concession to which they were entitled and in the following year it was relaxed. Since then peasant cultivators in areas where land must often be left fallow owing to poverty of the soil have been entitled to the fallow rate without applying for it. Recently, the same principle has been applied to flooded land. Non-cultivating landlords, however, still remained liable to pay the full revenue on land left fallow. But it was represented that they could not afford to leave their land fallow if required to pay the full revenue and that the soil therefore became impoverished by continuous cultivation. Thereupon rules were introduced entitling non-cultivating landlords to a reduction of the revenue on fallow land.

34. Although the system of fixed assessments had been abandoned and in Upper Burma, in Lower Burma its feasibility was reconsidered on the introduction of a land revenue system into Upper Burma. At the outset a system on the lines of Lower Burma seems to have been contemplated, with an assessment on the cultivated area and special rates for fallow. But the insecurity of harvests indicated that even an assessment fluctuating with the cultivated area would be insufficiently elastic; the choice seemed to lie between extensive remissions and S.M. II, 59.

advocated fixing the assessment "for a period of 15 or 20 years or even in perpetuity" settlements were granted for seven years. In these longer settlements the only item fixed was the amount of produce; the actual tax varied each year with the market rate, and it was found that even with this concession the revenue was difficult to realise and the settlements frequently broke down. (Selected correspondence, pp. 100, 170 & 192.)

- S.M. II, 63.** an assessment on matured areas. The only payment in the nature of land revenue then current in Upper Burma was the rent on royal land which, as it was ordinarily a share of the produce, fluctuated with the season; the people were habituated to a system of assessment even more elastic than that of Lower Burma. On the other hand, it was evident that the large variety of crops and numerous harvests of Upper Burma would impose a severe burden on the land records establishment; over large areas the soil was poorer than in Lower Burma and the crops far less valuable, the revenue would be low and land records work, though more expensive, would be less remunerative. But the balance of opinion was in favour of an assessment on matured areas, which was the closest practical approximation to the traditional system of collecting rent in kind, and in 1894 Sir Alexander Mackenzie as Chief Commissioner advocated this method of assessment in connection with the settlement of Mandalay District. Subsequently, the need for it was questioned by Sir Harvey Adamson, then Deputy Commissioner of Mandalay, who suggested the introduction of fixed assessments. At almost the same time the Government of India declined to sanction an assessment on matured areas in Mandalay and, though willing to consider an assessment on cultivated areas, urged the desirability of fixed assessments. The question was discussed at a conference, presided over by the Financial Commissioner at Mandalay in February 1895, but no agreement was reached except that it should be referred to settlement officers for further consideration and report. A second conference, held at Rangoon in November 1895, was presided over by Sir Edward Buck, then Revenue Secretary to the Government of India. Their conclusion was that experiments should be made by summary settlements based on the principle of crop rates, with assessments fluctuating according to the area matured. The Local Government however expressed willingness to experiment with fixed assessments in a few fully cultivated areas and considered that for some riverine lands such a system might be the most suitable. For the Mandalay settlement, on which the discussion had arisen, an assessment on matured areas was accepted by the Government of India as a temporary expedient for rice land but was not applied. An experiment was made in Kyaukse but failed and thereafter, both in Kyaukse and Mandalay, cultivated areas were assessed. The question was almost immediately revived by the Director of Land Records who advocated fixed assessments tempered by suspensions, on the ground that the cost of land records work in Upper Burma threatened to be prohibitive. After a reference to settlement officers this solution was accepted by Sir Frederick Fryer, who had succeeded Sir Alexander Mackenzie. He considered that the insecurity of crops would necessitate the employment of a survey staff on a scale which the poverty of the country forbade. However, when proposals for the introduction of fixed assessments, which had originally been advocated by the Government of India, were submitted to them, they pointed out to the Local Government that an assessment on matured areas had been approved at the two conferences in Mandalay and Rangoon and had been introduced into Mandalay and Meiktila; they were of opinion that it was "far better not to assess on failures than to assess first and remit afterwards."
- S.Q. I, 153.**
- S.Q. I, 179.**
- S.M. II, 66.**
S.Q. I, 187.
- S.M. II, 68.**
S.Q. I, 193.
- S.Q. I, 234.**
- S.Q. I, 286-301.**
- S.Q. II, 83.**
S.Q. I, 419.
S.Q. I, 461.
- S.M. II, 77.**
- S.Q. I, 473.**

For many years they had been impressing on Local Governments the importance of elasticity and urging the application of fluctuating assessments to precarious areas and they were reluctant to depart from this policy without very strong reasons, "in a tract which is probably as precarious as any in India, and in which a fluctuating assessment has been the rule from time immemorial." They considered therefore that an assessment on matured areas should be adopted at least for precarious districts. The Government of India were mistaken with regard to the introduction of assessment on matured areas into Mandalay, and also it would seem with regard to Meiktila, as orders had not yet been passed on the settlement of that district. Sir Frederick Fryer had been led by experience in the Punjab to prefer fixed assessments, but, as the Financial Commissioner agreed with the Government of India, he permitted an experiment by the settlement establishment in Minbu with a view to ascertaining what simplification of land records work was possible. The experiment was not conclusive and although Sir Frederick was still apprehensive that fluctuating assessments would lead to corruption, he finally accepted the view, held by the Government of India and local officers, that in the dry zone assessments should be on matured areas. In their orders on the Minbu settlement passed in December, 1898, the Government of India sanctioned this as the principle of assessment for the dry zone. Thus, since 1899, an assessment on matured areas has been the standard system in the dry zone of Upper Burma. The orders referred specifically to the dry zone of Upper Burma but the correspondence had dealt also with the irrigated tracts of Kyaukse and Mandalay and in practice the system of an assessment on matured areas was extended to the whole of Upper Burma. Subsequently, in 1902, the question of defining a matured crop was raised. It was then ascertained that, in Mandalay and Kyaukse, a crop was held to have matured unless it had been abandoned unreaped, in Meiktila and Myingyan crops were only exempted if they failed to return anything beyond the seed grain planted, and in Minbu, if they failed to pay for the cost of cultivation. The Local Government proposed an extension of the rule to cover current practice, and to treat a crop as non-matured in the dry zone if the yield was less than one quarter of the normal, and outside the dry zone only if it had been abandoned unreaped. The Government of India had now however come round to Sir Frederick Fryer's views and agreed with all that he had urged in favour of fixed assessments as the general rule; while admitting that established practice throughout Upper Burma diminished the objections to fluctuating assessments and that the precarious condition of the dry zone rendered a fluctuating system "most advisable," they required to be satisfied that conditions outside the dry zone justified abandonment of the advantages of fixed assessments on the ground that failures were so frequent and extensive as to render the remission system unworkable. The remission system had already been found to occasion great difficulty in Kyaukse, even with the exemption of total failures from assessment, and in the Ruby Mines also, where the rainfall is comparatively heavy, it had proved inadequate in an unfavourable year. In view of representations to this effect the Government of India

S.M. II, 83.

S.M. II, 102.

S.O. II, 90.

S.O. II, 3.

S.M. II, 100.

S.O. II, 90.

S.M. II, 85.

sanctioned in 1904 the proposals made by the Local Government in 1902 which were based on the procedure since 1899. These orders were incorporated in Directions which are still in force. They have increased land records work but are considered to have given a more than proportionate relief to the revenue establishment in connection with remissions. Within ten years however the cost of the work and its unsatisfactory quality led to a revival of the question and a conference, presided over by the Financial Commissioner, was held at Maymyo to review the situation, but no agreement could be obtained regarding suggestions for changes in the general system; thus the procedure which gradually took shape between 1890 and 1904, sometimes without definite orders and sometimes in contravention of orders, is substantially that now followed.

35. In Lower Burma, where almost the only crop is rice, the question of varying the assessment with the crop grown was never important, but in Upper Burma some lands yield two or even three crops in the year, and some crops are much more valuable than others. Proposals to vary the revenue with the crop sown were put forward but negatived by the Government of India as unsound and unnecessary. Soil rates were adopted and it is now the general practice and apparently the accepted principle that a subsidiary crop shall only be separately assessed on rice-land when the main crop fails and that crop rates shall only be imposed on impermanent soil, or where especially valuable crops, such as betel-vine, onions, tobacco and sometimes plantains, occupy a limited but considerable area.

36. Remission of revenue, and in Upper Burma of water rate also, may be granted on application to any cultivator whose crop has been damaged by any cause not ordinarily preventible. But, as a rule, no remission may be granted unless over one-third of the crop is lost or if the crop is removed before inspection by a township officer. All the land held by the cultivator within the village-tract is now included for the purpose of computing the damage sustained, but in Lower Burma until lately the unit was the township. There are special arrangements for remission in years of widespread or sudden disaster.

37. The assessment fixed on the foregoing principles is revised from time to time at re-settlement. During the currency of a settlement an assessment is not ordinarily enhanced on account of any improvement made by the occupants. At settlement or re-settlement certificates of exemption from enhancement may be granted by the Settlement Officer for durable improvements by irrigation or embankments which have rendered waste land cultivable or have raised the assessable capacity of land already cultivated. The exemption, however, is only permissible for a term which will allow for recovery of the capital cost of improvement with interest at 12 per cent. A certificate may only issue in respect of lands held by those who have borne the cost of improvement but once issued passes with the land. The practical application of the rules involves some difficulty and they have been little used.

38. On introducing a new settlement precautions are taken to prevent the immediate enhancement from being excessive. At original settlements a rate not exceeding the old rate on any class of land by more than 100 per cent. can be taken at once. At re-settlement the rate immediately applied to any class of land must not exceed the rate of the expiring settlement by more than 50 per cent. Where these limits are exceeded, intermediate rates are taken for periods of five years until the full demand under the new rate is reached. This can most easily be explained by an example. If the rate on first class rice land prior to re-settlement be Rs. 3 and the new rate after re-settlement be Rs. 5, ten acres of land which was in the first class before and after re-settlement will be liable for Rs. 30 before settlement but Rs. 50 after re-settlement; for five years the owner would only be required to pay Rs. 45. In Lower Burma experiments have recently been made with a view to substituting individual rebates when required.

39. Although Government has always claimed rights over water, no charge for water apart from the revenue on land was ever levied in Lower Burma and the theory and practice of assessment on land irrigated by Government agency did not assume importance until the annexation of Upper Burma. Here lands irrigated from Government sources were already paying a rate or cess for the maintenance of the irrigation works, and the customary rates were maintained pending consideration of the policy to be adopted. After a discussion of principles it was decided that the rates should be so calculated that the total proceeds of the rates for the area under assessment should not exceed one-fourth of the gross increase in produce over that of similar land not irrigated, nor be less than half the increase in net produce due to irrigation. But the procedure contemplated by the directions was not followed and a consolidated revenue, including both land revenue and water rate, was assessed on a consideration of the gross or net produce in the same manner as for privately irrigated or unirrigated land. The consolidated revenue was afterwards divided up into land revenue and water rate on various principles. With the construction of the Mandalay Canal the position was altered. Previously settlement officers had been dealing with works originally constructed by the people themselves under the Burmese Government and there were grounds for dealing with them on the same principle as irrigation works in private ownership. But the Mandalay Canal was a new work constructed by the British Government, and such considerations had no force. The question was therefore re-opened and a prolonged discussion ensued in which much confusion was occasioned by the use of terms such as water rate, wet revenue and dry revenue without great precision. It was finally decided that "the assessment should take the form of a water rate varying with the crop, supplemented by a wet and dry land revenue assessment framed with reference to the varying value of the land classes or divisions determined by the settlement department." Pending settlement these instructions could not be applied. But the Government of India had laid down as one principle that the water rate should be fixed on a

S.M. II, 166

S.Q. II, 438
569.

S.Q. II, 492.

purely commercial basis, and in practice, after consideration of the consolidated rates on the older works, experimental water rates were framed which were thought to be as high as could be paid without discouraging resort to irrigation. Similarly the wet and dry land revenue were arbitrarily fixed at rates of Rs. 1-8 per acre for wet revenue and Re. 1 for dry revenue. The principles laid down were incorporated in the instructions issued to the settlement officer. He was directed to fix water rates as high as could be paid with ease, yet so high that the cultivator would not be tempted to take up land which he could not make the best use of; he was not to hesitate to propose high rates simply because they were higher than any rate paid hitherto, as rates could easily be reduced but only with difficulty be enhanced. One-fifth of the gross produce was suggested as a suitable proportion, but great importance was attached to the water rates being pitched as high as possible and the settlement officer was permitted to fix them as high as one-fourth, taking, if necessary, a somewhat lower share of the net produce as wet revenue than if only one-fifth of the gross produce were taken. He was further directed to consider the payments by tenants on estates where rents were at a competitive pitch, as Government should be able to realise equal amounts; and if the incomes of cultivators were larger than necessary for the cultivator, doing a reasonable share of cultivation himself with the aid of his family, to live in decent comfort, this was an indication that water rate could be raised. The wet rate was to represent a certain proportion of the net produce and discretion as to the share was left to the settlement officer; but as the main object was to take as high a water rate as possible, the wet revenue was to represent the highest total amount which he thought the cultivator could pay minus the water rate. No special instructions were given for the calculation of dry rate. Substantially the same instructions have been applied to all major works. As regards minor works, comprising the old works mentioned above, a consolidated rate has been recognized as suitable, and a share of the consolidated revenue is credited to the irrigation department on the principle that they are entitled to the difference between the revenue due from the land in its irrigated and unirrigated aspects. Varying sums per acre have been assigned to land revenue, the balance being credited to the irrigation department. Prior to 1905 water rates were levied under the Upper Burma Land and Revenue Regulation and there was no corresponding provision for Lower Burma, but the Burma Canals Act passed in that year brought both parts of the country under the same law, without any substantial change in the rules and procedure hitherto in force in Upper Burma. Under this Act drainage rates on land reclaimed by Government have recently been imposed in Lower Burma.

40. When Tenasserim and Arakan were first annexed the sole Personal taxation. impost in the nature of personal taxation was the tax paid by wandering tribes, such as the Karens and Salons. This was paid in kind, but a fixed payment in money was substituted within a few years. Subsequently all the inhabitants were made liable to poll tax or capitation tax which, though levied nowhere in India, was justified on the ground that no

salt tax was levied and that the rates of land revenue were low. This tax is still collected in Lower Burma, ordinarily at the rate of Rs. 5 per head for married couples and Rs. 2-8 per head for unmarried adult males. In remote portions of a few districts, the rates are lower, and where they are subnormal, the settlement officer is expected to recommend the rate which should be levied, but as settlement operations rarely deal with places where these low rates are in force, changes in the rates if considered desirable are made in the ordinary course of revenue administration.

The thathameda-tax, which has already been described, is the corresponding tax in Upper Burma. The readjustment of this tax, as explained below, is one of the ordinary processes of settlement.

CHAPTER V.

THE SETTLEMENT OF REVENUE.

41. In Burma, as over the greater part of India, periodical enquiries are held with a view to the settlement of the land revenue. But Burma stands almost alone in the restricted scope of the enquiries. In India generally they comprise two branches: they are directed not only to determine the demand but who shall pay it. Formerly that was also the case in Burma. During the original settlements it was necessary to fix responsibility for the revenue; but now this duty devolves on the land records department. At resettlement the settlement officer deals solely with the revenue demand; it is no concern of his who pays it.

Even in its fiscal aspect the scope of settlement is more restricted in Burma than in India. Settlement operations in general comprise three stages: the settlement officer collects and analyses material and submits proposals for assessment; Government passes orders on these proposals fixing the demand; and the demand is then distributed. In Burma the Deputy Commissioner collects statistics and makes a preliminary examination or forecast of the results of resettlement. This is submitted through the Divisional, Settlement and Financial Commissioners for the orders of Government. The main purpose of this forecast is to enable Government to decide whether the proposed operations are justified on financial or other grounds. The orders passed by the Government may however contain directions to the settlement officer as to the conduct of the settlement. The settlement officer then begins his work, makes experiments and enquiries and collects material on a scale without example or parallel elsewhere. He then submits proposals for assessment. With that his work is ended. The proposals are considered and rates are notified by Government and these are applied by the land records department. In other provinces, with the exception of Bombay, the introduction of the settlement, that is, the distribution of the individual assessments, is effected by the settlement officer.

In another respect settlement procedure in Burma differs from that in India; no machinery is available for ascertaining public opinion on the proposals as submitted by the settlement officer or for hearing individual objections to the distribution subsequently, when the rates become known to the people interested. In India generally it is the practice to publish settlement proposals, or a reasoned summary of their nature and effect, before they reach Government. Again, after Government has considered any general representations and passed orders laying down general principles for the revision of assessments, each landholder is given an opportunity to represent any matter connected with the reassessment of his land which is not covered by the general orders. In Burma no such provisions exist.

42. The present theory and practice of settlement are inherited from early days in Burma and it is convenient therefore, at this stage, to sketch their development.

Early settlement procedure.

It may be well also to premise that in some matters of importance the practice has always been at variance with the instructions; in fact, through several revisions of the instructions, the procedure still resembles closely that of Sir Arthur Phayre when Assistant Commissioner in Tenasserim in 1847, and of the "Directions for the Settlement of Paddy Land in the Province of British Burma" which, as Commissioner of Pegu, he drew up in 1858. At that time the assessment was based on the gross produce, which was determined by crop measurement in each kwin; in large kwins 'say of two or three hundred acres, it might be advisable to test the yield in five or six different places.' The settlement officer was expected to make the experiments personally and then to fix rates, separately for each kwin. He was to take "into consideration the results obtained from actual experiment, yet to exercise a sound discretion in fixing rates upon general considerations, such as the amount heretofore paid by the people, their own statements of their profits and what they are willing to pay, and likewise to have regard to the general evidence of prosperity or the reverse apparent in their dwellings and appearance." Two points should be noted; the kwin was the unit of assessment, and the gross produce was the basis of assessment. The settlement officer's classification or rather valuation of kwins was therefore determined by his estimate of their relative fertility.

S.M. I, 11.

But the procedure of treating a whole kwin as a unit, though a great advance on the system under which a uniform rate had been applied over large circles, was still very crude. In 1869, Captain Fitzroy, the Senior Officer, Revenue Settlement Department, submitted proposals for the re-organization of the settlement department, and the introduction of a system of fixed assessment somewhat on the lines in force in Bombay. He proposed the marking off of holdings and their subdivision into five-acre "lots," each of which was to be separately assessed with reference to the "natural" fertility of the soil and the advantages of position. His proposals were characterised by the Chief Commissioner, the Hon. Ashley Eden, as fanciful and impracticable and their adoption out of the question in a province which was at that time nothing more than "a large tract of land with a few patches of gradually increasing cultivation scattered about." In the event a committee was appointed in 1872 to consider settlement rules, but the procedure was left essentially unchanged until the round of settlements which began in 1878 inaugurated an advance along two lines; classification within the kwin was undertaken for the first time, and net produce was substituted for gross produce as the basis of assessment. This change was not wholly to the good. The rates were no longer fixed in the field. Kwins with similar standards of fertility were grouped into soil tracts; kwins with the same level of prices were grouped into price tracts. These groups were combined in the manner described in greater detail below to form assessment tracts. Neither the soil tracts nor the price tracts were necessarily continuous; consequently the assessment tracts were often made up of scattered blocks or even kwins. This method

S.M. I, 69.

rendered it difficult for the settlement officer when framing rates to attach much weight to any variations in local circumstances which might exist except variations in soil or price. Again, while the soil classification depended on fertility, the assessment rested not on fertility alone, but on the cost of cultivation also, which still remained to be worked out. The settlement officer when classing the land had only a general idea what the cost of cultivation would be and therefore knew with less certainty the relative assessment value of his classes. In both respects there was a tendency to foster a conception of settlement as a mathematical process of determining assessment rates on the basis of experiment. With uniform soil, a single crop and numerous experiments, it is not impossible with experience or intelligence to estimate normal outturns with fair accuracy; similarly, with economic conditions uniform over a wide area and varying little from year to year, approximation to accuracy in calculating the combined cost of living and cost of cultivation was not wholly beyond attainment. But when settlement work was extended to Upper Burma the case was very different. With numerous crops and precarious harvests, crop measurement was less useful and even misleading as a guide to classification, and variations in the cost of living from year to year vitiated any attempts to calculate net profits. The relative importance of considerations other than fertility led to the adoption of geographical assessment tracts in place of the fertility tracts which then and for some time later formed an essential feature of the Lower Burma system. But, in Lower Burma also, the uneven progress of economic development, resulting from the displacement over wide tracts of the peasant cultivators by men of business, farming on a big scale or letting large areas to tenants, introduced new considerations, and there also geographical tracting was adopted. This rendered it possible for the settlement officer to found his conclusions on a wider basis.

43. The Commissioner of Pegu, reviewing in 1884 one of the later

S.M. I, 351.

Two conceptions of settlement.

reports on Hanthawaddy, the first district settled, remarked: "The usual process has been gone through of making calculations as to the average yield, value of produce, cost of living and cost of cultivation, to find the rates that should be applied, and the figures thus applied have been as usual rejected as being much too high and rates have then been chosen which have nothing in particular to do with the calculations made." Sir Harvey Adamson as settlement officer of Tharrawaddy in 1883-84 did not base his proposed rates on produce values and cost of cultivation, but weighed the general arguments for and against an increase of rates and the rates proposed "were based entirely on general considerations." Mr. Pennell in the settlement of Amherst advocated a similar course. In Hanthawaddy in 1910 the settlement officer remarked that the practice of dealing with each assessment class as a separate unit seemed defective, as it tended to obscure the true effect on the tract as a whole. He estimated the total net value of each tract, calculated the Government share on this, and fixed rates for the various classes which, applied to the cultivated area, produced a demand approximately equal to the Government share. But the mathematical theory of settlement has never finally been abandoned.

The crop measurement statistics are still sometimes regarded as scientific data with an independent value of their own; the settlement officer is supposed not only to base his assessment on them but to use them as confirming and demonstrating his opinion. Until quite recently each of the several hundred experiments was described in detail in the statistics attached to the report, the ground being that "abridgment is undesirable," as the data which this return affords are "the foundation of assessments." That attitude survives. A settlement officer is even liable to find his opinion overruled unless it tallies with the results of his experiments, and it is not unknown for a settlement officer's assumptions regarding outturns to be raised by reviewing officers on the strength of his statistics of crop measurement. In one settlement the theoretical rates calculated mathematically, soil class by soil class, without reference to the proposals of the settlement officer, were imposed by the Local Government with no other basis than statistics. Thus there are two distinct conceptions of settlement. On one conception it is regarded as a quasi-mathematical process, the determination of assessments by the experimental results of crop measurement; crop measurement and classification are regarded as the essence of settlement and basis of assessment, and general economic features are not emphasized. On the other conception, a consideration of general agricultural and economic conditions mainly determines the assessment; less weight is attached to the statistical results of crop measurement, and soil classification is primarily a method of distribution.

44. The foregoing outline of the development of settlement procedure and the contrast drawn between the two alternative theories of settlement should make it easier to understand the conduct of settlement operations in Burma at the present time. The theory that assessments should be based on experiment and enquiry in minute detail is stretched to breaking point, if not beyond, but at the same time economic analysis cannot be foregone, and the combination largely accounts for the complexity of settlement operations. The following paragraphs describe the various operations of settlement. Perhaps the simplest way to set about this is to consider the course of settlement in a single village, containing, say, one kwin. Under the current settlement, the occupied land in the village is shown in the annual map and registers, and the cultivated area is annually assessed according to the sanctioned rates. At any time the survey and registration should be up to date, but if for any reason supplementary survey has fallen into arrears it should be revised, by the local staff if possible, or by a special survey staff if necessary. Whether survey is necessary or not, the map and area statement should be corrected so far as required and copies prepared for the settlement party. Before the party arrives, notices are published informing the landholders that crops will be measured, the land reclassified and entries in the registers and maps checked. On their first arrival an Inspector visits the village to select fields for crop measurement and a Field Clerk comes to superintend the reaping of the selected field. This process recurs with every harvest until the end of settlement. Probably the Settlement Officer or an Assistant visits the village once during each harvest, to superintend crop measurement,

and to make preliminary notes regarding tracting, soil prices, and other features of the agricultural economy. Except for such casual visits the people of the village see little or nothing of the party except for the few days when a section of the party works there. In Section Work an inspector with two or three field clerks probably arrives first to classify the soils, to record detailed statistics regarding tenancies and rates of rent, and also mortgages and sales for every holding in the village, and to record the indebtedness of every occupant of land and probably of some field labourers also. In Upper Burma one of these clerks will also record in detail the agricultural and non-agricultural income of each inhabitant. Where there are palms or other trees which cannot be assessed as gardens, one clerk has to enumerate them, and is expected also to record the owner (and lessee and mortgagee, if any) of each tree. The inspector, besides classifying the soil, is required to make entries in prescribed forms regarding agricultural conditions, retail prices, village customs, village requirements, irrigation works, cost of carriage and the size of local measures. After a day or two he passes on together with his clerks to the next village and the records are made over to the Assistant Settlement Officer in charge of the section, who arrives a few days later. The classification and records are then checked and further enquiries made regarding cost of living and cost of cultivation; the holdings dealt with in these enquiries are surveyed if necessary, and the settlement work of the village is then complete, except for such further scrutiny as the Settlement Officer may consider desirable. When the map showing the new classification reaches the settlement office, the area of every survey plot in the village is distributed in the Classified Area Statement according to the new classification, and the areas fallowed and sown, and matured or non-matured, under every crop in every class are distributed in the Cropped Area Statement. The totals under each class are carried forward into a similar statement in which the figures are compiled. The Settlement Officer then proposes rates for every tract; these are approved or modified by Government, and applied by the Land Records Department.

45. We now turn to consider separately the principal operation of settlement. The primary data are the net outturn of land, the value of the produce and the expenses of cultivation; these are the factors of the net produce on which assessments in theory are based. Assessments have to be compared with gross produce, net profits and rents; the cost of living and rental values are therefore secondary data, and particulars regarding land transfers, sale and mortgage values and indebtedness must also be considered. For the enquiry under each head there is prescribed a uniform procedure which takes little or no account of variations in local conditions.

Outturns are determined by crop measurement. The success of a settlement is regarded as largely depending on the judicious selection of fields for experiment and the care with which the experiments are conducted; the instructions lay down that not only will the amount of the land revenue be affected but its incidence in different localities and on different cultivators will be largely determined by the results of these operations.

Great attention has therefore been paid to the technique of crop measurement and nowhere in India have experiments of this nature been conducted on so large a scale as in Burma. Experiments are supplemented by enquiry and use is made of outturns actually admitted by cultivators. These are recorded during the process of classification, during the enquiry into rents, and during the enquiry into the cost of cultivation.

The value of produce is recorded annually during harvest for each survey charge by the land records department. These figures are checked by figures recorded during the settlement operations. For paddy the prices at the principal export towns, which determine the local prices in the area under settlement, are taken for the last twenty years. 'Abnormal' years are excluded and the average of the remaining years is taken as the normal price, from which the local price in different parts of the settlement area can be arrived at by deducting cost of carriage and merchants' profits. Another method of arriving at the local prices is by calculating the average local prices from the annual records of the land records department. For crops other than paddy similar methods are followed so far as practicable, but ordinarily local land records figures have to be accepted: if these are unreliable the figures compiled at settlement are used. In all cases the local measure is carefully tested and allowance is made where necessary for the fact that poor lands only yield when crops are plentiful and the price of produce low.

The enquiries regarding cost of cultivation are lengthy and very detailed. Ordinarily three representative cultivators should be examined by an inspector for every kwin where cultivation is extensive, and every entry should be verified by an assistant settlement officer. The main heads of enquiry relate to seed, cattle, labour, agricultural implements, and miscellaneous items. For seed and seedlings purchased by the cultivator the price actually paid is recorded; seed supplied by the cultivator out of his own stock is valued at the local price at the time of sowing. The value of sowings destroyed and renewed is included. Cattle are valued on the basis of replacements during the last four years. The value of all cattle purchased during the period is recorded and an allowance made for cattle which have died and been replaced from stock. The cost of all labour hired is recorded as well as the value of all labour supplied under the mutual help system; an allowance is made for the food supplied for all labourers. Under the head of implements is recorded the cost or value of all implements newly purchased or made during the year of enquiry. Miscellaneous items comprise the value of manure and the cost of spreading it, expenditure on temporary field huts and cattle sheds, on the conveyance of seedlings, and, on land irrigated by Government, the water rate. Expenditure incurred in kind is allowed for at the local rate at the time when the expenditure is incurred, or at the deduced price for the year, except that, when rice is grown for export, payments in kind at harvest are valued at the price determined for the assessment tract in the way described above. Thus the general principle of the enquiry is to record all out-of-pocket

expenditure during the season of cultivation as accurately as possible and to make an allowance for replacement of cattle and miscellaneous depreciation. In working out the cost of cultivation incurred by one cultivator separately for two or more varieties of crops or cultivation, items peculiar to each crop or kind of cultivation are separately calculated, thus items, such as expenditure on cattle, which are common to all varieties are distributed over the various crops or kinds of cultivation in proportion to the area cultivated with each. The area cultivated is carefully verified and if necessary surveyed, but any area on which the crop was an entire failure is excluded.

46. The statistics relating to land values available for assessment purposes comprise material annually compiled by the land records department and material specially collected during settlement.

The land records department provide for each kwin figures showing annually since the previous settlement—

(a) The area sold and purchase money.
 (b) The area mortgaged and the area under mortgage at the end of each year with the mortgage money in each case. Usufructuary mortgages are merely recorded and no statistics regarding them are compiled.

(c) The area held by agriculturists, and by non-agriculturists classed as resident and non-resident.

(d) The area rented by tenants paying a fixed rent either in cash or produce, the actual rent paid in cash or in kind with its value in the latter case, the outturn annually from rented holdings as admitted by tenants, the number of tenants who have occupied the land for periods exceeding four years and the number of holdings which have been consecutively rented (whether to the same or different tenants) for more than four years. Particulars are available for every individual holding for every year since the previous settlement, but those regarding partnership and share produce tenancies though recorded are not compiled. The Instructions direct the settlement officer to compile statements based on these statistics but contain no directions for utilising them in the field; they are only compiled when actually required for the prescribed statement and, not having been verified or analysed in the field, it is not possible to place great reliance on them, nor do they ordinarily receive very much attention in settlement reports.

The settlement officer however compiles separate statistics relating to the same matters, and in every kwin particulars are obtained regarding tenancies, sales and mortgages for every holding:—

(i) Each cultivator occupying land as a tenant is required to state whether he formerly owned the land, for how many years he has been working it as tenant, the terms on which he leased it, including the value of every service rendered to the owner, and the outturn under each crop. If the rent actually paid differs from that agreed upon, it is the practice to record information under both heads. The rental statistics prepared at settlement differ from those of the land records department chiefly in the compilation of share produce and partnership tenancies.

(ii) The statistics regarding sales and mortgages show the area and classification of land affected, the consideration, the terms of the transaction and the reason given by the owner for selling or mortgaging his land. Mortgages are recorded for the actual year of enquiry only but sales for the two preceding years as well; in either case, they should be collected so far as possible in the field and compared kwim by kwim with those recorded by the revenue surveyor.

47. The Settlement Instructions prescribe that the nature and extent of agricultural indebtedness should be regarded as an important factor in the determination of assessments. In Lower Burma each cultivator who is examined regarding the cost of cultivation is also examined regarding his indebtedness; in Upper Burma particulars of indebtedness are recorded for everyone possessing agricultural income who admits debt during the course of the thathameda enquiry. Certain village records are also prepared in prescribed forms. One shows for the principal villages the retail prices of all articles ordinarily used and consumed by the people. Another contains information regarding village customs, another village requirements and another irrigation works. The most important of these village enquiries however is that prescribed for the re-adjustment of the thathameda tax. In the unsettled tracts of Upper Burma the bulk of the revenue is ordinarily derived from this source, which represents in such areas taxation on all income, agricultural and non-agricultural. The usual rate per household is Rs. 10. The assessment of land revenue involves a conversion of thathameda into a tax on non-agricultural income. The object of the enquiry is therefore to fix a rate for the tax on non-agricultural income. The settlement officer is required to ascertain the net agricultural income and the net non-agricultural income of not less than 80 per cent. of the households in agricultural villages other than households which derive no income from agriculture. Rules are laid down for calculating by this enquiry an average rate applicable to a group of villages.

48. The Instructions regarding the classification of land in Burma lay down two objects of assessment which should be kept in view during classification: that each cultivator should pay approximately an equal proportion of his produce; and that each cultivator should enjoy approximately an equal rate of profit.

They explain that the method of classification should take into account all matters which affect the value of land and that the object of classification is to exhibit clearly inequalities in the amount of produce and the value of produce, which they describe as the main factors in the productivity of land.

Classification comprises three processes: the area is divided into "Tracts," the cultivation is divided into "Main Kinds" and the land is divided into "Soil classes."

49. There are two kind of tracts,—Primary Tracts and Assessment Tracts. A primary tract should consist of a number of contiguous kwins with common characteristics which distinguish it from other tracts. In Upper Burma the primary tracting is largely determined by the crops.

habitually cultivated which are an indication of distinctive physical features. Thus in one area there may be level black soil with a large area under millet; in another, hills with cotton predominating; in another red soil uplands with early sesamum and nut. Such distinctions are readily brought out by statistics furnished by the land records department. Where rice predominates, it may be irrigated from canals in one area, from tanks in another and be dependent solely on rainfall in a third. Here again land records statistics showing the annual variation in the areas cultivated and matured may be useful.

Primary tracts are subdivided into assessment tracts. These have never been clearly defined. Originally, in Lower Burma, as already stated, kwins with similar standards of fertility were grouped into soil tracts, and kwins with the same level of prices were grouped into price tracts. The combination of soil tracts with price tracts gave assessment tracts. Thus, if in the settlement area there were four soil tracts and six price tracts, the number of assessment tracts would be twenty four, unless price tracts cut across the soil tracts in such a way that in a price tract there were less than four soil tracts, when the number of assessment tracts would be automatically reduced. In some settlements the number of assessment tracts was reduced by the inclusion in the same tract of all kwins in which the combination of the standards of fertility and prices allowed the same rate to be applied to the same classes of land after the cost of cultivation and living had been worked out. In other words, where the similarity of rates permitted, the assessment tracts, which had been formed on the basis of a uniform standard of fertility and price, were grouped into a large tract. The conception of the assessment tract as an area over which the same classes bear the same rate has survived and it may be regarded as a subdivision of a primary tract which fulfils this condition. The distinction between the primary tract and the assessment tract however, is not rigid and there is now no hard and fast division between them except that a primary tract is usually larger than an assessment tract.

50. Different varieties of cultivation are allotted to separate main and main kinds. kinds when they cannot conveniently be classified in one series. The use of the term "main kind" is a comparatively recent innovation. The earliest Directions to Settlement Officers in Upper Burma contemplated that classification "would probably assume a form approaching the following:—

First class land, including the best paddy lands, *i.e.* the low clay lands where the rain water collects, and which, if the season is favourable, produce good harvests of late paddy.

Second class land, including—

(a) those lands on which the most valuable crops are found in rotation;

(b) lands habitually growing wheat, gram, tobacco, sugar-cane, and similar profitable crops;

(c) double-cropped lands. These lands are generally light clay or loam.

Third class land, including the inferior paddy lands, and those on which, from position and poverty of soil, only the least valuable crops are raised.

Garden and Orchard land including the lands devoted to special products, e.g. betel vine, betel-nuts, plantains and so forth."

In practice, however, rice lands and *ya* lands were classed in separate series and the revised Directions of 1907 recognized the necessity for differentiating various categories. They laid down that "the main soil classes into which the lands of a village are divided are—

- (1) *Ya* land,
- (2) Paddy land—
 - (a) Irrigated,
 - (b) Unirrigated,
- (3) *Kaing* and inundated land,
- (4) Garden land."

Thus the term "soil class" was used both for the major category and for the internal classification, but the former was distinguished as a "main soil class." This led to the introduction of the more appropriate description, "main kind of cultivation" which was first used in the report by Mr. J. P. Hardiman in the settlement of the Lower Chindwin district. The cultivation of rice land, for example, is in general more profitable than the cultivation of dry land and one series of assessment classes cannot conveniently accommodate them both. Riverine cultivation is not only more productive than upland cultivation but is carried on at different times under different conditions and requires separate treatment. Irrigated land must be distinguished from unirrigated for the calculation of water rate or for statistical reasons. Rice land, irrigated and unirrigated, garden land, riverine land and dry land are the main kinds usually recognized.

51. In the internal classification of land within the kwin it was formerly the practice in Lower Burma, when each kwin was dealt with on its own merits, to form two or more classes according to the soil, the position with regard to water, the results of crop measurement, the appearance of the stubble, statements by cultivators regarding outturns, and the opinion of assessors. After classification the soil classifier recorded his estimate of the fertility of each class, although the framing of this estimate might be reserved for the section officer. When settlement operations extended to Upper Burma and the tract became the unit of classification instead of the kwin, the procedure hitherto in force in Lower Burma required modification. The range of classes became much wider, and the precarious climate and variety of crops made it unsafe for the classifier to pay much attention to crop measurement or the appearance of the crops, or to statements regarding outturns, or to frame offhand at the completion of the day's work an estimate of fertility. Classification standards were therefore laid down for each tract and classification consisted of the distribution of all land within the tract among the standard classes. For dry lands the standards were ordinarily determined mainly by the position of the land and the nature of the crops habitually cultivated, but with rice land provisional estimates of outturns were sometimes assumed. When the practice of geographical tracting was extended to Lower Burma, it also became the custom there to lay down lines of classification on taking up a new tract. But in Lower Burma there

may be large differences of fertility with little obvious distinction of soil or level and the provisional estimate became the standard of classification. It has thus become a general practice in Lower Burma to lay down provisional standards of outturn on the basis of the assumptions of former settlements and of such other information as may be available from crop measurement or otherwise. The classifiers continue as before to distribute the land into blocks according to soil and outturns but the arrangement of blocks into classes consists in assigning each block into its class according to the standard scale provisionally adopted for the tract. In recent years there has been a tendency to abandon the system of making provisional assumptions. Thus there is no separate classification of soil and water, as is the general practice in India; the classification does not imply that within a single block the soil is uniform; red or black; clay, loam or sand. It represents that, on a general consideration of soil, water supply and all matters affecting its value, the land within the same class in the same tract, whether red or black, clay or sand, or flooded or starved of water, may be assessed at the same rate. The classes are not soil classes but assessment classes.

The procedure generally adopted is for the settlement officer to make a preliminary examination of each primary tract during which he decides what main kinds and how many classes within each main kind it will be necessary to recognise; he also obtains some idea of the distinction between the different classes. He then classifies a few kwins in the company of his assistant settlement officer and classifiers to give them practical instructions in carrying out his conception and often, especially in Upper Burma, gives them written directions for their guidance. The classifiers then carry on the line from village to village as uniformly as possible throughout the tract under the supervision of the assistant settlement officer. For the internal classification of each village, representative cultivators, *thamadis*, are usually selected and the classification is mainly based on their opinion; where they give a careful opinion in good faith concerning the relative value of two holdings it is almost invariably accepted. Their statements are tested by examining the crops habitually grown and the position of the land as regards water supply; ordinarily, though not invariably, in Upper Burma and rarely in Lower Burma, the classifier examines the soil by digging. For carrying on the line from village to village as much use as possible is made of local knowledge, though very often local knowledge is of little assistance in this matter, and to maintain uniform standards it is necessary to rely on the classifier's experience and commonsense and his interpretation of crop measurements.

The foregoing description relates primarily to field crops such as are generally grown; it is not entirely applicable to garden and orchard produce, nor to palm trees and fruit trees. Gardens may be assessed at a uniform rate throughout the district or the tract, but are sometimes distributed into classes. Palm trees and fruit trees are assessed at a rate per tree which may vary from tract to tract or with the position of the tree; it is necessary therefore to count them. The produce of gardens and trees is usually ascertained by general enquiries instead of by experiments

The produce of land under certain valuable crops, such as betel-vine, onions, tobacco and plantains as a rule is similarly estimated.

The main kinds and classes are indicated by appropriate symbols; thus R may represent rainfall rice, with classes R₁, R₂, R₃, and Y may represent dry cultivation (*ya*), with three classes Y₁, Y₂, Y₃.

The different classes and kinds are distinguished on the map by lines drawn round their boundaries, each homogeneous block being enclosed in a line of coloured paint. Subsequently in office the fields in each block are entered in a Classified Area Statement which shows for every occupied survey plot the main kind and class in which it has been placed. In Upper Burma, a more elaborate record of soil and water has sometimes been prepared, but the practice has never been systematised nor formally prescribed.

52. It was at one time anticipated that the original classification would need little change and be susceptible of application in all future revisions. The draft instructions for the earliest revisions laid down

Classification at resettlement. that the revision settlement was to be based on the original settlement; it was thought that in general the classification of soil within kwins and the grouping of kwins into tracts would still hold; the tracts were to be so far as possible maintained and the internal classification was to be accepted as correct, the general change of rates being based on the rise or fall of produce values. In one at least of the earlier revisions, this principle was adopted, and, except where cultivators petitioned, changes of classification were few. But the original classes had been insufficient, in Lower Burma the system of tracting was changed, in Upper Burma the introduction of new crops, and changes in the relative values of staples entailed much reclassification, so that in the Instructions to Revision Settlement Officers issued in 1907 the proposal to base revisions on the change of produce values was abandoned and the insistence on maintaining the former tracting and classification was somewhat less pronounced. The result has been that at resettlement the classification is entirely revised with little reference to the former classification.

53. When the settlement officer has collected all the statistics required to justify assessment proposals, he compiles them by assessment tracts, analyses the results and frames his proposals. On the basis of his crop measurements and admitted outturns, corrected and supplemented where necessary by his personal local knowledge, he assumes standard outturns for all the principal crops in each soil class in each main kind. Where there is mixed cropping, he estimates the proportion under each of the principal crops in each soil class; this estimate may be based on the proportion occupied during a certain year, or may be in general terms without reference to any particular year. By converting the outturns at the price which he deduces from his enquiries, he arrives at an estimate of the money value per acre of the produce in each soil class. From this he deducts the expenses of cultivation, calculated separately for each main kind in each tract. The result is the net produce for each soil class; one half of this, or in Lower Burma provisionally one-

quarter, represents the rate which may in theory be applied to the soil class for assessment. It has never been found practicable to take one-half, and rarely to exceed one-quarter, of the net produce. The actual fraction is determined by general considerations. The Instructions require that the theoretical rates shall be compared with standards of one-fifth of the gross produce, one-half the net profits, and one-half the tenant rate or rental value; it is not very clear whether rental value in this connection signifies the economic rent or the rent actually paid, but the latter is usually chosen for comparison. Other matters prescribed for consideration are the description of crops raised, the stability of produce values, the security of harvests, the general condition of agriculturists, size of holdings, size of families, available waste, extravagance in cultivation charges and the amount and the incidence of the present revenue. Although general considerations such as these in fact determine the assessment, the Instructions prescribe that departures from the theoretical rates shall be justified. The demand is automatically distributed from year to year by the application of the sanctioned rates. Thus the share of the settlement officer in distributing the demand from place to place and holding to holding is confined to his classification of the land.

54. Throughout the settlement operations, the settlement officer is under the general supervision of the Commissioner of Settlements. The degree of control over settlements, to be maintained or assistance to be given is not prescribed, but in practice the Commissioner inspects each party twice a year and at other times his orders if required can be obtained by correspondence. Important new problems will ordinarily be brought to the notice of the Financial Commissioner. Apart from this general supervision, the settlement officer carries through the settlement and frames his proposals for assessment without interference or instructions. His proposal are considered at a Conference of the Divisional and Deputy Commissioner presided over by the Settlement Commissioner who usually prepares a note on the report to serve as a basis for discussion. The Settlement Officer ordinarily attends to support and explain his proposals where necessary. The proceedings of the Conference are then submitted through the Financial Commissioner for the orders of the Local Government. The rates finally sanctioned are published in the Burma Gazette, in Lower Burma before the 1st of July in the year preceeding their intended introduction, and in Upper Burma at any time before they are introduced. The Local Government at the same time passes orders as to how long the settlement shall last.

CHAPTER VI.

THE LEGAL RECORD.

55. For the assessment and collection of land revenue a register of assesseses is necessary ; there must be a fiscal record. This record can be used in land disputes and to provide statistical and other material for economic enquiries. How far it may be useful as a legal and economic record, or should be considered purely as a fiscal record, depends on the manner of its preparation and maintenance. These three aspects, fiscal, legal and statistical, are in some respects conflicting. For a fiscal record it is essential to register the name of the person from whom the revenue will in practice be recovered ; this will ordinarily be the person in possession, who may not be the legal owner. If the record be prepared according to legal title, and mutations are only effected when the person entitled to registration cares to exercise his right, the accuracy of the fiscal and statistical record may be impaired. For statistical purposes information may be required of a different nature or in a different form from that required for the fiscal or legal purposes. In Burma, as elsewhere, there has always been some difficulty in harmonizing the three aspects.

56. From the earliest days of British rule the *thugyi* had been required to prepare an annual assessment-roll, but this was solely intended for fiscal purposes. In 1858 when Sir Arthur Phayre as Commissioner of Pegu drew up the first Settlement Directions for general application throughout British Burma, he contemplated the preparation of a record of ownership, mortgages and tenancies, with detailed information regarding "old land holding families." But the instructions to this effect remained in abeyance, and so long as the country was undeveloped nothing more elaborate than a fiscal record was required. There was an abundance of waste land which anyone could take up and then capriciously abandon without forfeiting his title ; a man who cleared land, or was in possession even for a single year might abandon it and still retain a valid title against a newcomer until the latter had been ten years in possession. In 1865 rules were introduced limiting this custom ; no one was permitted to retain a title over abandoned land, unless he had been in possession for twelve years, and his title determined if he left the land uncultivated for twelve years. Further, a man who wished to retain his title over land which he did not propose to cultivate was required to report his intention to the headman. If he failed to report he was liable to pay the full tax. Land which was thus relinquished could be allotted to another cultivator, but the original occupant retained his right of re-entry. So late as 1872 the chief need of the country was held to be an "increased population and an increase of cultivation."

S.M.I, 13.

S.M.I, 72.

57. But the rapid development which followed on the opening of the Suez Canal in 1869 was already becoming noticeable. The change in the situation called for a change in the policy of Government; the

Proposals for improvement.

extension of cultivation no longer required encouragement but control. The first suggestion for a change of policy appears to have originated with Captain Fitzroy in his proposals for the reorganization of the Settlement Department which we have already mentioned. In these he drew attention to the absence of any provision for the demarcation of holding boundaries or for trustworthy measurements, and suggested that this would expose the people to much future trouble and litigation, and Government to a loss of revenue. In addition to classification and assessment of the land in five-acre lots, he proposed to decide boundary disputes, to register proprietors, and to demarcate village boundaries and common land for grazing and other purposes. The project received the approval of Sir Albert Fytche, then Chief Commissioner, but was considered too elaborate by the Government of India and failed to meet with general approval among local officers. In 1872, therefore, the whole question of settlement was considered by a committee of experienced revenue officers who drew up revised rules for settlement procedure. They contemplated that the primary duty of the settlement establishment would be to demarcate and map the various holdings. The map was to show the estate of each landholder with a holding number, the name of the proprietor, and the area, and was to be accompanied by a schedule detailing the nature of the tenure so far as ascertainable, and any other precise information available. They recognized that in many cases sufficient care had not been taken to protect the village *oapaza*, or enclosure, from encroachment, or to allot sufficient grazing grounds; they provided accordingly that settlement officers should be required to demarcate clearly village enclosures, grazing grounds and fisheries, and show them on the map, to recommend the allotment of common lands where none had yet been made, and to determine the breadth and direction of the road or roads leading to any fishery or village grazing ground. But they do not seem fully to have realised the magnitude and difficulties of the task which they were imposing on settlement officers. The first settlement under these rules was effected in Henzada district where the event showed that cultivation had more than doubled within the area for settlement during the previous decade. By 1876 it had been realised that a systematic professional revenue survey was essential.

58. Meanwhile in 1876 a bill to give legal effect to the revenue rules of the province had been compiled by a committee appointed for this purpose. In connection with their discussion the proposal for

Proposals for a Record of Rights.

a Record of Rights originated. During the preparation of this bill a difference of opinion arose between Sir Ashley Eden, then Chief Commissioner, and the majority of the committee, primarily with reference to the character of land tenure in Burma, but with secondary consequences of importance. The Chief Commissioner held that Government was paramount lord of the soil and that the cultivator enjoyed no more than a hereditary and permanent right of occupancy

S.M. I. 39.

A.R.A.R.
1871-72, 43.
S.M.I, 73.

A.R.A.R.
1873-74, 7.

S.M.I, 83
seq.

as a tenant of Government conditionally on the payment of rent. The committee held that the cultivator had a proprietary right subject to the payment of land tax. The question was exhaustively investigated and finally, after reference to the Government of India, the difficulty was evaded by recognizing that after twelve years' occupation the cultivator had a full and complete title subject to the payment of the Government demand; it was decided that people with such a right should be defined neither as proprietors nor as tenants but as having the status of a landholder, and that the payment due on the land should be termed neither land tax nor rent but land revenue. The controversy had a practical aspect. The Chief Commissioner regarded "the entire want of any real record of rights in the land" as one of the great evils of the existing system; the rough record in the assessment rolls gave very little security to the cultivator whose only documentary evidence of a claim to land was the "rent receipt or tax ticket." He considered it to the interest of all classes, Government, hereditary occupiers and the general public that the right should be formally recorded and registered, and suggested that at the time of settlement all permanent hereditary tenures found to exist should be entered in a special district register, with a consecutive number, and that all transfers and mutations of names should be entered in the district register by the Deputy Commissioner on the report of the Settlement Officer. He hoped thus to have in time a complete record of all rights. The committee, who probably appreciated with greater justness the difficulty of preparing a record of rights under the conditions then existing, and possibly were led by their experience in Burma to be less apprehensive that the rights of the general public would suffer from the absence of a record, demurred to the suggestion and objected that, while in the abstract a register of title might be desirable, the country was not yet sufficiently advanced to make title depend on registry. S.M. I, 119. But the maintenance of a record of rights was only a side issue; the substantial difference between the two views was that the Chief Commissioner did, and the committee did not, wish to declare that in future the right of re-entry on abandoned land should be contingent on the outgoing landholder formally registering his intention to resume possession. In the event the view of the Chief Commissioner prevailed.

59. The outcome of the deliberations of the Committee was the (Lower) Burma Land and Revenue Act of 1876.

The Land and Revenue Act, II of 1876:
Tenures in Lower
Burma.

This Act, which still governs land revenue and settlement procedure in Lower Burma, defined the tenure of land and was the basis on which the new Directions to Settlement and Revenue

Officers were founded.

The tenure of agricultural land in Lower Burma is very simple. The ownership of land is regarded as vested in the State except when, by continuous possession for twelve years coupled with regular payment of revenue, the occupant has acquired the status of a landholder, or when he has acquired proprietary rights by grant. The only other tenures upon which land can be held direct from the State are occupation under lease and temporary occupation.

60. The registration of tenures advocated by Sir Ashley Eden was provided for in the Directions to Settlement Officers issued under the Act of 1876, which required the Settlement Officer to prepare a record of rights.

The record in Lower Burma.

The original intention was that reserved forests, fisheries, village sites, lands appertaining to monasteries and pagodas, grazing grounds, and holding boundaries should be permanently demarcated, and a Survey, Bill was drafted for the adjustment of boundaries and settlement of boundary disputes. But the experience of the first season showed the difficulty of demarcating holdings and this part of the scheme was dropped. The land was surveyed and a copy of the map made over to a clerk called the holding marker. Each cultivator was requested to walk round his holding in the presence if possible of adjacent cultivators, and the holding boundary was marked on the map. He was then registered as landholder, grantee, lessee or in temporary occupation, according to his rights against Government as summarily determined, usually on his own statement, by the settlement officer. Mortgages and tenancies were also recorded and disputes regarding private boundaries were noted by the holding marker for subsequent decision by the settlement officer. In India however it is customary when a record of rights is prepared to make an enquiry, more or less elaborate, into the origin of the occupant's title and the manner in which rights have been acquired. No such enquiry was made under these Directions. For purposes of identification the holding marker recorded the name of the occupant's wife if he were married, or of his father if he were not, but no further details. At that time, over the greater part of Lower Burma, the owner was also the occupant in possession and cultivated in person the patch of land which he had recently reclaimed from waste; disputes were rare and the procedure, although summary, was sufficiently elaborate for the conditions then obtaining and gave on the whole a record accurate enough for fiscal purposes and useful in the civil courts.

S.M. I, 186.

61. When these Directions were issued, it was contemplated that the record prepared by the Settlement Officer would "stand virtually as the title deed both of the state and cultivator." So far as it related to

S.M. I, 216. Legal effect of the record.

landholders, it was considered that it was binding on the civil courts under section 17 of the Land and Revenue Act and that, in view of the publicity of the enquiry made by the settlement officer, the courts would attach great weight to the entries relating to other tenures and rights. But, from the outset, settlement officers called in question the interpretation which the Directions placed on the Act, and in 1885 the Government Advocate gave an opinion that the provisions had been misinterpreted; he held that they conferred no jurisdiction on the settlement officer to declare any person in possession of land, to be a landholder, except on application for such a declaration, or on reference by a civil court. As regards grantee and other tenures, the Government Advocate thought that the settlement officer's record was without legal effect because the law gave him no power at all to decide upon rights in land held under such tenures. With this expression of the Government Advocate's opinion, the so-called register of rights and occupation in land ceased to be

considered any longer a record of rights and became merely a fiscal and statistical record. Since then the document has been treated as a register of holdings and is referred to by that name in the latest revision of the Settlement Instructions. In the Land and Revenue Manual for Lower Burma there is no reference to a record of rights.

62. The registration of title in Upper Burma followed a similar

The Land and Revenue Regulation, 1889: Tenures in Upper Burma.

course. On the annexation it was found that the whole area under occupation, except definite classes of royal land, was held free of any land tax. It was therefore considered "absolutely necessary to define the rights in land in Upper Burma with regard to royal land, private land and waste land so that the appropriation of royal and waste land by private individuals might be prevented"; and "the right of Government to assess all private land to land revenue be at once asserted." This was the origin of the Upper Burma Land and Revenue Regulation, passed in 1889, which is still in force and has not been greatly modified.

S.M. II, 34

The primary division of all lands in Upper Burma is into state land and non-state land. State land is described in section 23 of the Regulation. It means all land belonging to or at the disposal of Government and includes—

(a) Land previously termed royal land known as *Ledaw, Ayadaw, Lamaing-mys*, etc.;

(b) Land held on condition of rendering public service, or as an appanage to or emolument of office; that is to say, land held by persons who actually or nominally rendered or were liable to render service to the king, and to whom the land had been assigned as remuneration for such actual or nominal service;

(c) Islands and alluvial formations in rivers;

(d) Waste land and land included within reserved and village forests; *i.e.* all land which had never been cultivated except religious and residential areas;

(e) Land which had been cultivated but abandoned.

63. In section 29 of this Regulation the Financial Commissioner was directed to cause a Record of Rights and Register of Mutations to be prepared for each village "as soon as circumstances permit."

The record in Upper Burma. The rules under this section direct that for each village under supplementary survey the settlement officer shall prepare a record of rights consisting of a register of holdings and a map of each kwin, and that the Collector shall cause registers of mutations and tenancies to be maintained. The directions regarding the preparation of a record of rights are contained in the Settlement Instructions and those regarding mutations in Chapter VIII of the Land Records Manual. The directions to settlement officers for holding marking however essentially resembled those of Lower Burma; the instructions to holding-markers in Lower Burma were adopted almost word for word and the form of the register was as little changed as possible. But tenures in Upper Burma were more elaborate than in Lower Burma, and had been further complicated by a definition of state land which bore no close relation with the conditions of landholding prior to the annexation. One great source of difficulty was the question of

service lands. If these had been assigned in remuneration for actual or nominal service and were still enjoyed by the original assignees or their descendants, they were considered state lands. But if they had been alienated, they were considered to have lost that character. Difficult questions arose also in connection with alluvial formations as such alluvial land had always been recognized as private property. The assumption of rights over waste land was new. The king of Burma had laid no restrictions on the right of subjects to clear and cultivate waste land at will. The law resuming abandoned lands was one "which the king would probably not have made and would not have been able to enforce." Thus the same definition included the private property of the king and the poorest land in the country. All land classed state was treated in the same manner as royal land and the occupants became liable to pay land revenue in addition to their *thathameda*. This increased the difficulty of ascertaining the facts. Similarly the tenants of royal land were not allowed to sell or mortgage it and it came to be regarded as a character of state land that the occupant had no power to alienate it. Consequently, a full enquiry into tenures in Upper Burma would have involved elaborate investigations which in many cases would have had little practical value.

Quite apart from the question of tenures the conditions of land holding were very much more complex than they had been in Lower Burma during the original settlements. Much of the land had been occupied for centuries and had long been cultivated and held by the same family, many holdings had remained undivided for two or more generations and the immediate partition of an estate between the heirs was the exception. The simple form and summary enquiry customary in Lower Burma settlements were not calculated therefore to produce an accurate record.

From the outset the record was described as the "Register of Holdings and Tenures" and in practice it has been nothing more than a fiscal and statistical record. The form of register in the latest Settlement Instructions provides for more elaborate enquiries, but this was not issued until the original round of Upper Burma settlements had been completed. Also it has now been decided by the civil courts that no presumption of validity attaches to the record even in Upper Burma. Thus, both in Upper and Lower Burma, the registers of occupation are primarily of fiscal and statistical importance.

04. When supplementary survey follows on settlement, the surveyor is required to copy in his first annual map and register of holdings the particulars recorded at settlement. These are brought up to date annually as shown below and the register of the succeeding year is based on that of the previous year. The annual register of holdings is in two parts: the first exhibits the state of the holding at the end of the previous year, the changes during the year, and the state at the end of the year; the second contains a detailed calculation of the revenue demand. Hitherto the holdings have been annually renumbered so far as necessary for their arrangement on the map in the approved serial order, but it is now proposed to make holding numbers

Maintenance of the register: New occupation, Mutations, and Relinquishments.

permanent. The old and new holding number, the name of the owner during the previous year, the soil class and area are all entered in the register in ink; mortgages and tenancies of the previous year are copied in pencil. The surveyor then visits the kwin and brings the register up to date. New land may be taken up during the currency of a settlement, as has already been explained, under a grant or lease, or by entry on it for cultivation without any formal permission or authority. When a grant or lease is issued a copy of the deed is sent to the surveyor for entry in his registers. Where an extension is made otherwise than under grant or lease the cultivator is entered in the register of holdings as the occupant. New occupation of land in Upper Burma should be reported to the township officer but with this exception no formal scrutiny of title has been prescribed; the land is brought on to the register, and the record prepared by the surveyor is never systematically verified by a settlement officer nor checked at all, except during kwin inspections by the land records staff and district officers.

There is no difference between Upper and Lower Burma regarding the main features of the procedure for effecting mutations in the register. The law requires that every person who is a party to an alienation of land shall report it to the revenue surveyor, orally or in writing, within sixty days of its occurrence; the term "alienation" covers all successions, partitions, gifts, sales, leases, exchanges, mortgages, with or without possession, and redemptions, and applies also to transfers of state land in Upper Burma. The record of possession and occupation is further verified and corrected by means of reports from offices established under the Indian Registration Act, 1908, which, together with the relevant sections of the Transfer of Property Act, applies to the whole of Upper and Lower Burma except a few remote areas. Similarly decrees relating to land, and execution sales affecting land, are certified by the presiding officers of civil courts; sales or resumptions of land for arrears of revenue are reported by the officer conducting the sale, and other orders of a revenue court affecting the occupation of land are communicated by the court. Where a transfer is effected by registered deed or the order of a civil court, the parties are excused from making any direct report to the surveyor. When the information in the registration memorandum or court certificate is at variance with the land records, the revenue surveyor is expected to reconcile the discrepancy if possible and, if he cannot do this, should report the difficulty to the superintendent, who calls on the transferee to establish the interest of the transferor or to supply any other necessary information. In Lower Burma, an occupant of land is permitted to relinquish it permanently by a report in writing to the revenue surveyor, but is liable for revenue at the full rate in the following year unless he makes the report before the 15th May. Any person may relinquish land temporarily for a period not exceeding twelve years if he is entitled to the status of a landholder regarding it and reports his intention to the Deputy Commissioner. In both Upper and Lower Burma, land which is left uncultivated, other than well established cultivation genuinely fallowed, should be excluded from the register unless it is held under grant or lease.

Apart from and in addition to all these reports from various

sources, the surveyor is required to visit each kwin at least once a year and ascertain all changes; but he may not, without authority from the parties concerned, alter the name of any owner in the register of holdings. If all the parties are present and admit the transfer, he can effect the mutation in accordance with the procedure described below. If a transfer which requires a registered document has been effected without registration, the mutation is made, but the parties are warned that registration is necessary and a note that the parties have been so warned is entered in the surveyor's register of transfers.

65. The following procedure is adopted in effecting a mutation.

Mutation procedure. For direct reports by the parties a register of reports of alienations is maintained, not by kwins but for the whole survey charge. The form is in three foils, the particulars relating to the transfer are entered in all three foils, two are given to the parties, the third is disposed of as shown below. The parties are not required to sign the foil but the revenue surveyor, if not personally acquainted with them, should endeavour to satisfy himself of their identity. The information contained in the direct reports and in the registration memoranda, decrees and sale certificates from civil courts and notices from revenue officers is recorded in the annual register of alienations, and the reports, from whatever source received, including the third counterfoil of direct reports, are filed interleaved in this register to support the entries. Although tenancies fall within the definition of alienation these are ascertained by direct enquiry in the field and formal reports are practically unknown. Changes in the record of ownership can only be effected in accordance with the foregoing procedure and in practice it is also followed in regard to non-usufructuary mortgages, although it is doubtful how far the instructions require this. Changes relating to usufructuary mortgages and tenancies follow possession as ascertained by the surveyor. Changes in holding boundaries follow the facts as admitted by the cultivators concerned, who are not necessarily the owners. Changes in holding areas follow survey. The general effect of the registration procedure is that, as regards ownership and non-usufructuary mortgages, the record follows registration, as regards other degrees of interest it follows possession.

66. We have seen that in the early days the policy of Government

Public rights. was to encourage cultivation but that, consequent on the rapid extensions of cultivation during the seventies, precautions were suggested for the preservation of public rights. This matter was noticed in the proposals of Captain Fitzroy, and of the Committee of 1872, and provision for the demarcation of village sites was made in the Directions to Settlement Officers. It was intended that the boundaries of such lands should be demarcated under the Boundaries Act and the Directions were framed on the assumption that common lands had been demarcated and would require little or no attention. After the instructions for holding marking they proceed, "The uncultivated area will come last, and is not likely to offer much difficulty as, except in a few cases, the Government is already in possession." Such lands were to be included in a register of uncultivated and excluded lands which was not a field register but only an abstract of total areas. Although a few village sites were

permanently demarcated in the first year of survey, before the Boundaries Act became law, partly owing to the difficulties of demarcation and partly because the rapid extension of cultivation required the full attention of the survey establishment, no effective measures were ever taken at settlement for the record or preservation of any rights other than the private right to occupy land for cultivation. Since then considerable attention has been paid to the allotment and demarcation of grazing grounds.

The earliest arrangements in Upper Burma only differed from those of Lower Burma in that distinct provision was made regarding land occupied but uncultivated. Survey officers were required to allot separate survey numbers to various descriptions of it. But there was no demarcation and no satisfactory survey was possible. The Instructions to Settlement Officers concerning such lands, although based on those of Lower Burma, were even more meagre. Thus in Upper and Lower Burma the practical effect of the Instructions was the same; the record prepared at settlement only concerned private claims to the occupation of land.

67. The earliest Directions to Settlement Officers in Upper Burma, like those for Lower Burma, were silent regarding Rights of user. rights of user. But in the revised Directions of 1907 it was recognized that people had been found in the enjoyment of an alleged right to collect certain kinds of forest produce in waste and jungle land and levy dues on others collecting such produce. In other districts claims were preferred to rights over waste as private-fuel reserves and grazing lands. Settlement officers were directed therefore to admit only such rights as were claimed and established. But they were further instructed that claims to hold such lands as ancestral private property could not be admitted, no machinery was provided for recording claims to rights of user apart from rights of cultivation, and in general the directions to record such claims seem to have been ignored.

The Directions of 1907 also contained revised instructions as to the recognition of title over uncultivated land. Cultivated land had always been held to include fallow, but in Upper Burma poor land was often left fallow for several years and only came under cultivation in exceptionally favourable seasons. It was explained therefore that, although land might have remained uncultivated for twenty years or more, if at any time it had been habitually cultivated and was still recognized as private property, it should be registered as such. In practice however, as no provision was made for the demarcation of such land, it was left unsurveyed and consequently omitted from the registers.

CHAPTER VII.

THE ECONOMIC RECORD.

68. The principal economic statistics compiled by the land records department fall under two heads, crop statistics and particulars of occupancy. The former are required for the crop forecasts prepared for rice, groundnut, and cotton, and for the statistics regarding cropped areas in the annual Season and Crop Report which shows the area cultivable, occupied, cultivated, and fallowed, and gives details showing the total area under each crop, the area twice cropped, the non-matured area, the irrigable area, and the gross and net area irrigated; it includes also a statement of outturns and prices. The particulars of occupancy are required for tables in the Annual Revenue Administration Report and the General Agricultural Statistics. These show for each district the area assessed and the revenue demand, remissions, and collections; the area occupied by agriculturists and by non-agriculturists, distinguishing these as resident and non-resident; the area rented, the rent paid, the number of cases in which land has been let continuously for periods exceeding and not exceeding four years, and the number of tenants who have rented the same land for periods exceeding and not exceeding four years; the area sold during the year and its value, the area redeemed during the year, and the total under mortgage at the end of the year and its value. The department also prepares weekly crop reports containing information regarding the state of crops, the rainfall, the progress of agricultural operations, the health of cattle and prices of produce, and compiles fortnightly returns of the prices of food grains and other commodities.

69. It is the duty of the surveyor to enter, both in the map and in the register of fields, symbols to show the crops grown in every field, but where every field of a holding is under the same crop one symbol suffices for the entire holding and in Lower Burma it may be assumed that paddy is grown on all embanked land unless the contrary is definitely indicated by crop symbols. Where a mixture of crops occupies the same field all the crops are shown, but for statistical purposes it is assumed that the predominating crop covers three-quarters of the area unless the crops, though sown together, mature at different seasons, when each is assumed to cover the whole area. Crops harvested at different seasons are recorded on the map in distinctive colours. In Upper Burma fields on which crops fail to mature are distinguished by a red ink cross immediately above the crop symbol, but, if the failure is on a part of a field only, this is separately marked, unless the area affected does not exceed half an acre, when it is disregarded. If at the time of the surveyor's visit the success of a crop is doubtful, he should mark it as

matured and inform the cultivators that they may apply for remission if necessary ; but he should visit the kwin a second time, if possible, to revise his crop marking. In Lower Burma failures are not ordinarily shown and the particulars regarding non-matured areas for the Season and Crop Report are furnished by township officers from their remission proceedings or are based on estimates. In order to facilitate remission work in disastrous seasons the surveyor may be required to distinguish failures and to note in the map field by field the proportion of the normal crop destroyed. Fallows must be marked field by field on the map, in black if assessed at a privileged fallow rate, and in red if assessed at full rates ; the areas are entered in the field register in black or red ink accordingly. Irrigated crops are distinguished according to the nature and the source of irrigation ; this information is recorded in the register and, in certain areas of Government irrigation, also on the map.

70. The surveyor shows, both on his map and in his annual register, all sales, all mortgages, whether usufructuary or non-usufructuary, and all tenancies. Unredeemed mortgages are carried on from year to year with a reference in the register to the original transaction. For every sale or mortgage the register shows the area sold or mortgaged, and the consideration paid. For every tenancy, the terms of the lease, the value of each party's contribution, and the outturn of the area leased must be recorded ; the surveyor also notes the number of years during which the land has been leased without a break, and also the number of years during which the same tenant has leased it, and is expected to note in his register any cases of rack renting or of disputes between landlords or tenants. Every mortgage transaction should be recorded, but the particulars relating to usufructuary mortgages, though totalled by kwins and charges, are not compiled. Information regarding tenancies and mortgages given in the register of holdings is copied into separate registers, omitting such tenancies as are not required for compilation.

71. In addition to the statistical summaries required for publication the Land Records Department is also required to copy kwin totals under the above heads into a township book which is intended to indicate the agricultural progress or decline of each kwin.

72. The surveyor is required to prepare a monthly statement of prices during the months of January, February and March, showing the wholesale sales of paddy which have actually taken place during the month in his headquarters village. He shows the name of the vendor, the variety of paddy, the quantity sold, and the amount of the purchase money, deducting the cost of carriage to any place outside the village if borne by the vendor. At the close of the season an abstract is prepared for use at the next settlement. In Upper Burma similar statements are also prepared during the three months following harvest for all other staples.

Every week the township officer prepares a crop report based on information received from land records inspectors and other sources. These are incorporated in a weekly district report which should show the wholesale price of paddy and other produce of local importance in

headquarters and at each important market, the price quoted being that of the quality ordinarily consumed. The weekly statement also shows the retail price of rice in headquarters.

Every fortnight the Deputy Commissioner submits a return of prices including food grains and other commodities, such as kerosene oil, generally used by the people. The prices of food grains are both the wholesale and retail prices, and are quoted for best and ordinary qualities in two forms, in rupees per hundred local measures and also by the number of seers and chittacks obtainable for a rupee.

The Season and Crop Report contains a comparative statement showing the harvest prices of the principal crops in each district, the corresponding prices of the previous year, and the normal prices.

CHAPTER VIII.

THE ANNUAL ASSESSMENT AND COLLECTION OF LAND REVENUE.

73. After an original settlement the settlement officer makes over to the land records department maps and registers for each kwin, showing the assessees and holding areas, etc. For each kwin the superintendent has a stock of printed maps showing cadastral details as already described. On one of these during the ensuing rains, the recess season, the revenue surveyor copies in yellow paint the boundaries of the different assessment classes, in blue pencil the boundaries of holdings, in black ink the names of owners and in black pencil the names of mortgagees and tenants. He also copies in black pencil the settlement number of each holding and the new serial number for the current year in black ink. He makes corresponding entries in his Register of Holdings, Register I, in which he also shows holding areas and assessment rates. He also enters in the Register of Fields (Register IA) all the fields in each holding together with their areas. After making these entries on the maps and registers he takes the field about the beginning of November and brings the maps and registers up to date entering new holdings, giving effect, so far as the rules permit, to mutations, recording tenancies and marking crops. He then prepares the annual Assessment Roll (Register II). He maintains three other registers, the Annual Register of Grants and Leases (Register III), the Annual Register of Tenants (Register IV) and the Annual Register of Alienations (Register V). Survey changes are entered during the recess in the Annual Area Statement (Register VI).

74. As regards assessment two items of this procedure are of primary importance, the record of assessees and the record of cropped areas. In Lower Burma, speaking generally, there is only one crop, rain-fed rice, cultivated during the monsoon and harvested between December and February. In many Upper Burma districts some crop is always on the ground and four seasons are recognised, spring (*kaing*), summer (*mayin*), autumn (*kaukyin*) and winter (*kaukkyi*). The autumn and winter crops correspond with the *kharij* crop of India and the spring and summer crops with the *rabi* crop. Until quite recently the crops were assessed separately at every harvest and although there are now only two assessments the surveyor is still expected to visit every kwin for crop marking at least once in each of the four seasons.

The assessment, as already explained, fluctuates with the matured area; in every field under each main kind at each assessment season the surveyor has to measure the area sown and enter it in his maps

and registers under separate heads, according as the crop does or does not mature; for every crop assessed at special rates similar entries are required, and at the last assessment season of the year the fallow area is similarly recorded field by field. He totals these entries, holding by holding, and for the whole kwin, and the whole survey charge; on these entries he calculates the assessments. The rules for assessment differ in Upper and Lower Burma and neither in Upper nor in Lower Burma are they uniform.

In Lower Burma the general rule is that the revenue surveyor assesses all occupied land whether cultivated or fallow. In notified kwins, that is, in areas which require special treatment on account of floods, poverty of soil, or precarious rainfall, fallow land held by cultivating owners is assessed at a "fallow rate" of two annas an acre. In such kwins, non-cultivating owners are not allowed the benefit of the fallow rate on more than one-sixth the total area held by them in the kwin except under the orders of the Deputy Commissioner, who may reduce the assessment, imposing either the two-anna rate or an intermediate rate on the excess of fallow over one-sixth. Outside notified kwins, cultivating owners are entitled to the two-anna rate or to an intermediate rate on their fallow land but to obtain this they must ordinarily apply to the Township Officer. Non-cultivating owners may also be granted a reduced rate by the Township or the Subdivisional Officer if specially empowered, provided that the fallow area does not exceed one-sixth the total area held by them in the kwin. If it does, the orders of the Deputy Commissioner are necessary. In Upper Burma, occupied land which is left uncultivated is not assessed and is omitted by the surveyor from the assessment rolls.

Applications for the assessment of fallow land at a reduced rate may be dispensed with altogether in cases coming directly to the knowledge of an officer with power to grant or recommend the reduced assessment. Otherwise, they must be made to the Township Officer before October 1st. If the Township Officer is empowered to grant the reduced rates, he passes final orders. If not the proceedings are submitted to the Subdivisional Officer and, if necessary, to the Deputy Commissioner. The final orders are communicated to the Revenue Surveyor who prepares the assessment rolls accordingly.

In notified kwins in Lower Burma, the surveyor omits from the assessment roll all land on which the crops have been completely destroyed by floods, but non-cultivating owners are not allowed this concession in respect of more than one-sixth the total area held by them in the kwin except under the special order of the Deputy Commissioner. Outside notified kwins, if the Township Officer certifies that the crops have been destroyed by flood over a considerable area, the surveyor omits them from assessment. In Upper Burma, land on which the crops fail to mature is exempt from assessment and is omitted from the assessment roll. In areas which have been specified as precarious a crop is regarded as non-matured if the outturn is less than one-fourth the average; elsewhere it is only regarded as non-matured if it is a total failure and is abandoned unrepaid. Crops assessed at the *kaing* season follow the

Exemptions and Remissions.

general rule, even in precarious areas. Both in Upper and Lower Burma remissions for crop failures which are not covered by the rules for total exemption may be granted on application. No remission may ordinarily be granted unless the loss exceeds one-third of the usual full crop on the applicant's holding, which for this purpose is taken to include all the land liable to assessment held by him within the same village-tract; until recently, the unit in Lower Burma was the township. The remission granted is proportioned to the loss of crop, and if almost the whole of the crop has been destroyed the whole revenue may be remitted. But as a rule no remission is permissible if the crop has been removed before inspection by the township officer, to whom applications must be made in writing by a fixed date, ordinarily about two months before the date fixed for the payment of revenue. For damage caused after the fixed date applications for remission may be entertained, provided that they bear a certificate from the headman. Written applications may be dispensed with at the discretion of the Deputy Commissioner in tracts where the damage to crops has been extensive. The township officer on his visit to the land notes the area affected and the extent of the damage. He may either reject the application or, after recording his reasons, grant or recommend remission. His powers extend up to a limit of Rs 25 in any one case, those of the Subdivisional Officer up to Rs. 50, of the Deputy Commissioner up to Rs. 200 and of the Commissioner up to Rs. 500. Remissions above Rs. 500 require the sanction of the Financial Commissioner. If the revenue has not been paid, the assessment roll and tax-ticket, which is recovered from the headman if it has reached him, are altered to agree with the orders passed. If the revenue has already been collected, a refund order is issued.

When the maps and registers have been brought up to date by the insertion of all the corrections and new entries, the surveyor paints or inks in the lines and names hitherto in pencil and prepares the annual assessment roll. The Inspector of Land Records is required to visit every kwin at least once in three years and the Superintendents of Land Records to visit a certain number of kwins in each surveyor's charge, inspecting not less than 5 per cent. of the total number of holdings in each. The Township and Subdivisional Officers and Deputy Commissioner also carry out inspections on a scale prescribed by the Commissioner of the Division.

75. The assessment rolls are sent in as soon as they are ready to the district office, where the superintendent of land records checks the assessment rolls with the registers of fields and holdings and also the rates with the notification issued after settlement. The Deputy Commissioner is required to check the rates in respect of 10 per cent. of the kwins. Tax tickets are then prepared in foil and counterfoil for each individual assessee, showing the annual demand, including cess, the number of the holding to which the demand relates, and possibly other details which vary from district to district. These tax tickets are prepared on contract by temporary clerks termed section writers. They are then sent with the assessment roll to the headman who is warned to check the tax

tickets with the roll, to check the roll for unattested corrections and the tax tickets for alterations, taking orders on these where necessary. If the roll and tax tickets are in order he collects the revenue, signs and dates the foil, which he delivers to the assessee by way of acknowledgment, retaining the counterfoil and assessment roll.

76. A statement showing the revenue due from each village at each assessment season is maintained for the whole district in the district office and for the township in each township office. The township officer is responsible that there is no undue delay by headmen in paying in the revenue and that they apply for assistance in recovering it, if necessary. If the revenue is not paid on the first demand the headman should issue a formal notice requiring the defaulter to pay before a fixed date or to lodge an objection before the township officer within ten days. If any person considers that his assessment exceeds the correct amount, he may apply to the township officer, who enquires into his complaint, rejects it if unfounded, or else strikes off the excess as erroneous, if he is empowered to do so, and if not submits the proceedings with his recommendations.

77. If the headman after issue of a formal notice cannot recover the revenue due, he must apply to the township officer for process. Both in Upper and Lower Burma, arrears may be recovered by the arrest and imprisonment of the defaulter, the attachment and sale of his property other than land or the attachment and sale of his holding. These methods of recovery may be used either separately or in combination. The attachment of moveable property is rarely suitable as "the seizure and sale of a hut or a few cooking and water pots benefits the revenue little and causes an amount of hardship quite out of proportion to the advantage which accrues to Government." Similarly warrants of arrest are deprecated, unless the officer who issues them is satisfied that the revenue cannot be recovered by less stringent measures. The sale of the land in respect of which the arrears have accrued is therefore the usual method of recovery. For this, in Lower Burma the rules prescribe the procedure laid down in Order XXI of the Civil Procedure Code; in the event of a contumacious default, or if there is no likelihood of the amount being recovered otherwise than by the sale of the land, they permit as an alternative a summary procedure. The latter is almost always adopted. Under this procedure, the notice requiring payment, the attachment order and the proclamation of the sale of the land on a fixed date may, and ordinarily do, issue simultaneously. Ten days must elapse between the date of the proclamation and the date fixed for the sale. Where the sale is held under this procedure, it may not be confirmed until two and a half months have elapsed from the date on which the revenue became due. During that period it will be set aside if the defaulter pays the arrears and costs and in addition 10 per cent. of the purchase price as compensation to the buyer at the auction. If it is held under the civil court procedure, it does not become absolute for one month. If the township officer proceeding against the land finds that the occupant has not acquired permanent, heritable, and transferable rights of use and occupancy over it against Government, he may resume it by publishing on it a proclamation that he has taken possession of it on behalf of Govern-

ment. In Upper Burma the attachment notice informs the defaulter that, unless the arrears and costs are paid within one month the property will be sold. If the arrears are not paid, a proclamation of sale is issued; the date fixed for the sale must not be later than one month from the date of the expiry of the period fixed in the attachment notice. The sale does not become absolute until the confirmation of the Commissioner has been received. If the land in respect of which the arrears have accrued is state land, it is not sold, but the defaulter may be ejected from it by order of the Deputy Commissioner.

78. A description of the method of assessment of land revenue in remote areas in settled districts, and in tracts which have not yet come under settlement, will be found in Chapter IX. The only variation from the procedure described above which need be noticed here is in respect of palm trees in parts of Upper Burma. The assessments on these are fixed at a rate per tree but are commuted for a lump sum demand for each village-tract. The owners of the palms in each village-tract are held jointly and severally responsible for the assessment thus imposed on the village as a lump sum. The assessment is annually distributed by village assessors (*thamadis*) on such principles as they consider equitable.

CHAPTER IX.

THE REVENUE SYSTEM IN SPECIAL AREAS.

79. In certain poor or remote areas the ordinary processes of survey and assessment are specially adapted to local circumstances. There are four systems; the simplified holding assessment, the fixed kwin assessment, the fluctuating village assessment and the assessment on families or individuals. In certain areas outside supplementary survey in Lower Burma, and in parts of Upper Burma, although individual holdings are separately assessed on the fluctuating-system, the procedure is simplified. In certain districts in the dry zone of Upper Burma the revenue in some kwins has been fixed at settlement at a lump sum, fixed for the kwins for the period of settlement, and annually distributed by local assessors. In Bhamo, Myitkyina and part of the Katha District of Upper Burma the revenue is assessed on the village and distributed by local assessors, but the demand fluctuates from year to year according to the area under cultivation and the price obtaining at harvest. In the hills of Lower Burma and in the Shan States, which lie outside Burma proper, and in other frontier areas there is no assessment on the land, and the only tax collected in Lower Burma is the *taungya* tax, and in Upper Burma and the Shan States the thathameda tax.

80. Formerly the assessment of areas outside supplementary survey was conducted in each district by one or more surveyors known as district surveyors. So far as possible the work has now been made over to revenue surveyors on the regular land records establishment. The surveyor is expected annually to survey and map holdings where he has reason to believe that the boundaries have changed, but is not required to plot the position relative to any fixed point. He also prepares a simple assessment roll showing little more than the name of the assessee, the area cultivated and the revenue due. The procedure is essentially the same as that which obtains in areas under supplementary survey but is reduced to nearly its simplest form; it is still further simplified in practise owing to the difficulty of access to such areas for survey and inspection.

81. The introduction of lump sum assessments in the dry zone is a comparatively recent innovation designed to reduce the cost of land records work. Previously the land in these kwins had been assessed on the ordinary system. The procedure now accepted is that the settlement officer fixes a lump sum to be paid as land revenue by those who hold land in the kwin, mainly on the basis of the revenue paid in former years. This is annually distributed by local assessors elected by the

people owning or occupying land in the kwin. In years of abnormal and general failure remission is permissible, but the revenue is fixed on a consideration of good and bad years and for normal variations no allowance is considered necessary. When a lump sum assessment has been fixed for any kwin the land records establishment is withdrawn.

82. A system resembling this obtains in certain districts on the northern frontier, Myitkyina, Bhamo and parts of Katha. After the annexation these districts were assessed to *thathameda* at a rate of Rs. 100 per household and also paid one-tenth of the gross produce on State land. This was estimated by the village headman. Subsequently the *thathameda* tax was reduced and all land became assessed to land revenue. The original intention was that land should be assessed by individual holdings at Rs. 1-8 an acre, but in Bhamo a system of village assessments was found more convenient and this was extended to the other districts. The system as we found it in Myitkyina is as follows:—

Four different main kinds of cultivation are separately and differently assessed:—

- (a) Permanent rice land cultivation (*Le*);
- (b) Shifting upland rice cultivation (*Le bok*);
- (c) Shifting hillside rice cultivation (*Taungya*);
- (d) Island miscellaneous cultivation (*Kaing*).

Permanent rice land cultivation is surveyed in large blocks with no internal differentiation of holdings. The block often corresponds with the cultivated area in the village jurisdiction. The average outturn of each block for the year is determined by reaping the crop in a field assumed to represent the average fertility of the block for the year. The outturn is valued at a price fixed annually by the Deputy Commissioner. The gross value of the produce of each village is calculated on the above assumptions, and the revenue is assessed at one-tenth of this. This is distributed among the cultivators by assessors.

Shifting upland rice cultivation is not surveyed. The outturn of each holding is estimated by assessors, valued at the rate fixed for the year by the Deputy Commissioner, and one-tenth of the value is taken as the revenue.

Shifting hillside cultivation is not surveyed but the cultivators are assessed at Rs. 2 per head irrespective of the area cultivated and the outturn.

Island cultivation is surveyed by the district surveyor and assessed at an acre rate.

The survey establishment in Myitkyina comprises two whole-time surveyors and two men engaged annually for eight months who work under the supervision of the subdivisional or township officers. The district surveyor forms no part of the establishment for assessing rice lands except that he is employed on crop measurement.

PART II.

Criticism and Recommendations.

CHAPTER X.

SCHEME OF PART II.

83. Hitherto we have been attempting to describe the Burma Land Revenue System, avoiding criticism, and not discussing how far there is any divergence between rule and practice, except in matters of primary importance, or where the general practice is so divergent from that laid down as to amount to an abrogation of the rule. We now proceed to examine the working of the system in the light of various criticisms and objections, and, since any departure from established practice is in itself objectionable as such, and to be deprecated unless sufficient ground for change be clear, we attempt to indicate the balance of objection between adhering to present methods and proposing changes. It may be convenient to state here the principles which guide us. It is, perhaps, almost beyond question that a revenue system should rest on principles readily understood and generally acceptable, which can be simply and logically applied. Respecting the objects of a sound revenue system we adopt the criteria laid down by His Honour in his note on the Burma system which led to the appointment of this Committee; it should provide accurate maps, accurate records based on the maps, an adequate revenue, equitably distributed and collected without difficulty and without hardship, and should be as simple and inexpensive as is compatible with the fulfilment of these objects. We may say at once that, judged by these criteria, the revenue system of Burma, although defective in certain matters of importance and in many ways requiring readjustment, both in doctrine and practice, to the changes which have gradually accumulated during the period of nearly a hundred years in which it has assumed its present shape, does on the whole fulfil the necessary requirements. Every province that we have visited has taught us something, and each is superior in some points, but, without attempting any detailed comparison, we are of opinion that in the adjustment of revenue to income, in the maintenance of maps and records, and in economy of administration, the revenue system of Burma, as actually administered and taken as a whole, does not compare unfavourably with that of any single province. At the same time we recognise that, in some respects in Burma, the rules are better than the practice, in some, the practice better than the rules, and in some, both rule and practice are defective. We consider therefore that, having due regard to the inadvisability of unnecessary changes, and to the difficulty of giving effect even to the

most necessary reforms, certain changes are feasible and will be beneficial. We do not find however that any sufficient case can be established for an immediate and radical change of system by the substitution of a fixed for a fluctuating assessment, the most important reform which has been suggested for our consideration. We do not consider a fixed assessment in itself superior to a fluctuating assessment, and it is no less costly; while recognizing its merits we are unable to recommend more than a tentative move towards it in certain areas where the two systems would differ little in practical effect.

84. We have laid down that a revenue system should rest on principles readily understood and generally acceptable, which can be clearly and logically applied, and that in application it should be as simple and inexpensive as possible. This formula is the basis of our criticism and recommendations and should therefore be carefully examined. A revenue system which brings in an adequate revenue with a minimum of trouble may be described as simple. We do not consider simplicity in this sense a suitable criterion. We hold that it should be possible to justify to an intelligent land-owner the grounds on which he is assessed, and that no revenue system can be regarded as satisfactory which does not provide for this. Mysterious calculations in the settlement office should be reduced to a minimum, and the assessment, so far as possible, should rest on a basis of fact which can be challenged and verified. It is sometimes contended that people have no interest in the matter, and that therefore the justification of assessments is superfluous. This contention we are unable to accept, either as regards the premise or the conclusion. Some people do, and an increasing number will, desire to know the grounds on which their assessment to land revenue is based. We regard that as a good thing, and we regard it as the duty of Government, by providing the information, to stimulate the desire. Again, the fixing of assessments is a matter of policy; even now the financial results of a settlement depend largely on the financial conditions of the time, and on the policy of high or low assessments temporarily in favour. But the policy for the time being affects the revenue for the whole period of settlement, long after the financial situation has changed, or a different policy been adopted. With the introduction and growth of popular control it can hardly be doubted that people will increasingly expect Government to adjust its demands to its necessities, that a surplus revenue will be more likely to entail waste, and that land-owners will question the pressure of taxation upon land. It is not only probable but desirable that people will require the assessment of land to vary with the needs of Government and with its other resources; this is only possible where the principles of assessment are generally understood. It is desirable also that every land-owner should be encouraged to scrutinize the details of his annual assessment. One great objection to the system of fluctuating assessments is the difficulty of checking them. The difficulty is enhanced if the cultivator cannot check the demand himself. That this is impossible has sometimes been a subject of complaint, and we hold that every facility should be given for checking every detail in the calculation of the annual demand.

85. We proceed, therefore, to examine the actual working of the system and only amplify the description already given where minuter detail is required for the purpose of criticism. In the former part we were explaining the working of machinery, and it was necessary therefore to describe the organization first; in this part we are looking for an improved machinery and must first ascertain what is required of it; the consideration of the machinery, therefore, comes at the end instead of in the beginning. In the next five chapters we deal with settlement, and in the subsequent chapters with land records work and land revenue administration generally. Under each head we examine the working of the system, consider the objections which have been raised against it and summarise briefly the general Indian practice, where the manner in which similar problems are dealt with elsewhere throws light on the points in issue. More detailed accounts of the Indian systems are given in the appendix. Finally, under each head we formulate our conclusions regarding the need for change, and, where changes are recommended, indicate their nature, sometimes in detail, sometimes in general outline only.

CHAPTER XI.

THE CALCULATION OF THE THEORETICAL DEMAND : NET PRODUCE.

86. Nowhere in India does the state claim so large a share of the agricultural produce as in Burma. In Madras, as in Burma, the assessment is based on the net produce but, whereas in Burma no allowance is made for home labour, in Madras an endeavour is made to ascertain the full cost of cultivation. The earliest settlements in Bombay were carried out on the same principle. In the Punjab, the assessment is based on the net assets, "the average surplus which an estate may yield after deducting the expenses of cultivation." In the Central Provinces it is based on the net assets of the landlord, of which by far the most important item is the rent actually payable by tenants. In every province the state claims the right to one-half the net produce, the net assets, or the rent, whichever is taken as the basis of assessment. This is now regarded as a maximum and in that part of the Central Provinces in which the existing standard is still above it, the proportion taken is gradually being reduced to 50 per cent. at successive settlements.

There has everywhere been an increasing liberality in the application of the half net standard. In Madras, one-half has been fixed as the maximum limit. In Bombay the net produce standard was abandoned at an early stage "as only calculated to confuse and mislead," and assessments are based on general economic conditions. Enhancements at re-settlement are limited by rule to 33 per cent. for a *taluka* (township) or group of villages, 66 per cent. for a single village and 100 per cent. for an individual holding. Apart from these specific limitations, assessments are in practice limited by the rents actually paid and increasingly tend to be based on these. The course of events in zamindari provinces has been described in paragraphs 11 to 13 of the Resolution on Land Revenue Policy published by the Government of India in 1902. The Saharanpur Rules issued in 1855 laid down "not that the revenue of each estate is to be fixed at one-half of the net average assets but that, in taking these assets with other data into consideration, the Collector will bear in mind that about one-half and not two-thirds as heretofore of the well ascertained net assets should be the Government demand." These rules, though issued in connection with, resettlement of the land revenue of the district of the North-Western (now United) Provinces after which they were called, exercised an important influence on the settlements in the adjacent provinces, the Punjab and the Central Provinces. "The construction placed on the word 'assets' at the time, and for many years later permitted the settlement officer to look beyond the actual cash rental and to take into consideration prospective increases of income, to assume a fair

1. Bombay Survey and Settlement Manual, 1917, Vol. I, page 40.

2. Land Revenue Policy of the Indian Government, 1902, page 14.

rent for land held by tenants enjoying privileges as against the landlord and to consider the profits of sir or home farm cultivation (where the land was held entirely by cultivating proprietors) as well as the rental value of the home farm lands. Hence it arose that the assessments taken, though amounting only to about 50 per cent. of the nominal assets, absorbed as a rule a considerably higher proportion of the realised rental. In recent years, however, there has been a steady movement in the downward direction. In the North-Western and other zamindari provinces, prospective assets have been excluded from consideration; allowances have been made for improvements made by the landlord, for precariousness of cultivation and for local circumstances; and the revenue has been fixed at a share of the annual income of the proprietor, his income including a fair rental value for the land which he farms himself or assigns on privileged terms to tenants." In the Central Provinces, therefore, so far as the most important head of income, the cash rental, is concerned, the true assets do not now mean as was formerly the case a fair rental value, irrespective of the rental actually payable where the tenant holds on less than a fair rent. The assessment is based on the rents actually paid as fixed by the settlement officer and these are almost always below, and often far below, the rental value. In the Punjab a full fair rent paid by a tenant at will, though sometimes falling short of the net assets, is regarded as a sufficiently near approximation to the standard.

Thus everywhere the standard of the state share has been lowered and the balance left to the cultivator before deducting the state share has been enlarged. In Burma, as we have seen in Chapter IV, the case is different. The standard of the state share has been enlarged and the balance left to the cultivator has been reduced by the substitution of the net produce standard for the net profits standard, and then further reduced by the exclusion of any allowance for home labour in calculating the cost of cultivation. Originally, both in India and Burma, the balance of the produce taken as the basis of assessment excluded the full cost of cultivation or rather more, but, while in India the interpretation of the share claimed by the state has everywhere become more lenient, in Burma it has been increasingly severe. The enhancement of the state claim has been mitigated in Lower Burma by the introduction of a provisional standard of one-quarter but this has already been exceeded at more than one settlement. And although in practical application the demand is more lenient than in theory, and is further tempered by a liberal system of allowances for failures and fallows, the figures in Table V of the Agricultural Statistics of India show that the actual incidence of assessment is higher in Burma than in India.

87. In theory the assessment of land revenue in Burma is determined by the calculation of rates representing for each assessment class one-half the net produce; the rates thus calculated are then modified in accordance with general considerations. On many grounds this procedure is open to objection. It has been pointed out by the Government of India that almost

S.M.L., 478.

1. Agricultural Statistics of India, 1917-18, pages 211-253.

2. Land Revenue Policy of the Indian Government, 1902, page 58.

in every case when Government is dealing directly with the cultivators the process must work from aggregate to detail. This is the accepted principle in the Punjab and Bombay. In Madras, where the theory of settlement most resembles that of Burma, general considerations did in fact mainly determine the original assessments and there was a large element of convention in the arithmetical calculations from which the rate for each assessment class was deduced. Revision settlements are entirely based on general considerations, though the theoretical half net produce standard is still worked out for purposes of comparison. In the Central Provinces the final demand is framed by the aggregation of details, but the general pitch has already been determined on broad principles and the detailed assessments represent reductions of the theoretical rate to meet individual circumstances. It can hardly be questioned that the principle laid down by the Government of India is sound. If the actual considerations which have determined the demand be formally subordinated to arithmetical calculations, this must tend to increase the complexity and length of settlement reports, and the numerous fictions on which the figures rest may be mistaken for plain matters of fact, the element of fiction will tend to be exaggerated by a manipulation of the statistics so that these may support the argument, the actual facts and assumptions on which the proposals rest may be overlooked, and the real effect of the assessment tends to be obscured. But under every system the application of the standard requires a consideration of outturn, of prices and either of the cost of cultivation or of the rent, and we proceed to examine how the methods adopted in Burma compare with those of India.

88. The methods adopted in Burma for estimating outturns are measurement of the crop on plots selected as representative of the class of land in which they lie, and the recording of outturns admitted by cultivators; greater dependence has been placed on crop measurement than on cultivators' admissions. But the procedure in conducting experiments and the manner of utilising the results has gradually changed. Sir Arthur Phayre contemplated in the Directions of 1858 that in a large kwin "say of two to three hundred acres, it might be advisable to test the yield of crop in five or six different places or more, by measuring off, say, one eighth of an acre in each place." The Directions of 1880 prescribed that ordinarily the settlement officer should make at least one selection in each kwin, but the selected plots were to be entire fields, each measuring at least half an acre. Until 1907, the settlement officer in Lower Burma dealt under these directions with a new settlement area each year; there was no opportunity for repeating observations on the same field and it was assumed that outturns remained fairly constant from year to year. The fields selected were regarded as representative of the kind of land, and the crops measured were regarded as typical of its produce, so that the average of the the experimental results could safely be assumed as the normal outturn and tabulated in statistical form to provide data from which the assessment rates could be deduced. There was a tendency to regard the statistical results of the experiments as determining, with at least some

degree of scientific accuracy, the outturn of each class and as forming a basis on which assumptions of outturn could be rested. This tendency grew into a tradition which still survives. But in recent years the validity of the tradition has increasingly been questioned; both the procedure in conducting experiments and the method of utilising the results have been subjected to scrutiny and criticism, and the limitations of crop measurement as an experimental basis for assumptions have been emphasised.

89. In the Instructions and generally in settlement literature the figure assumed for the normal outturn of any class is regarded as representing the normal because experiments on selected fields give, when compiled and tabulated according to the instructions, a figure which, although obtained by the exclusion of inconvenient material either during selection or at a subsequent stage, is generally termed the average and commonly regarded as demonstrating experimentally that, in general, the land in the class did, on an average during the period of enquiry, give approximately the yield indicated by the average, and that, therefore, the assumptions made for the normal outturn are sound. This view however cannot be accepted. The value attaching to the figure taken as representing the average can only be known to the settlement officer, who knows how the instructions have been applied; the figure taken as representing the average outturn, and the figure purporting to represent the normal outturn, alike depend on his care and judgment; only under the exceptional conditions found on secure land in Lower Burma can the figure representing the average be regarded as in any degree a check on the figure assumed for the normal. In Lower Burma, so long as settlement operations only lasted for a single year, it was difficult to appraise or criticise the value of experiments. But in Upper Burma almost from the earliest settlements, and in Lower Burma since 1907, the operations have covered more than one year, and continuous observation of the fields selected for experiment has demonstrated the fallibility of crop measurement. Many officers regard the selection of representative fields with normal crops as impossible in practice. The tendency of the settlement establishment to select plots which are above the normal of their class, or which happen in the year of selection to give yields above the normal, although recognized and discouraged in the Instructions, is generally considered ineradicable. With the object of reducing the margin of error arising from faulty selection, some officers advocate the selection of fields at random, trusting that on the law of averages the general result will be representative. This is an innovation which has not yet been recognized in the Instructions but has met with a considerable measure of approval. Sometimes it has been carried to extremes and the staff have been directed to measure plot number so and so in every kwin. Another alternative is for the settlement or assistant settlement officer to select in office from the map of each kwin one or more plots which appear from their situation to be representative. This procedure saves much time and labour and probably fields thus chosen will

Criticism of the experimental method: the difficulty of selection.

ordinarily furnish a better representation of the general conditions of productivity than selections made by the subordinate establishment in the field. Another expedient for eliminating or reducing the personal element in selection is continuity of experiment. On this system the crop is gathered from the same field, season after season, whatever crop is grown, and whether it matures or fails. The Instructions support this practice. They lay down that crop cutting should take place in each year as far as possible on the same fields, and further that the field selected in the first year of operations, if representative, should be reaped year after year. But failures are entitled to remission of assessment and until recently the general practice had been to select a fresh plot if that chosen in a former year seemed likely to give a yield regarded by the selector as below the normal. It is now recognized however that, even in Lower Burma, there are wide variations in the outturn, and that it is unsafe to neglect a crop merely on the ground that the yield is likely to be poor. In Upper Burma, with different crops grown in rotation and a precarious climate, this is even more unsafe. Continuity of experiment reduces the chance of error arising from the selection of fields which happen to give unusually high outturns, because, after the first year, a field can no longer be selected as likely to yield exceptionally well. Further continuous experiments assist the settlement officer in obtaining a true picture of the general course of harvests; this is more difficult if his attention is confined solely to successful plots. And if assumptions are to be regarded at all as based on averages no other method is permissible.

S.M.L., 57.

90. But, with every precaution to reduce error it still remains impossible to base assumptions on statistics.

The fallacy
of averages.

Even in Lower Burma, if the classification be accepted as correct and the class as homogeneous,

experiments can hardly be numerous enough for the law of averages to produce a representative result. Still less is this possible with the numerous crops and precarious harvests of Upper Burma. And in Upper Burma there is another source of error. The same land may grow two or three crops in rotation of which one is more profitable than the other. The area under different crops fluctuates from year to year in accordance with the rains and prices. To obviate this difficulty the average area cultivated with each crop in each assessment class should be determined over a number of years. This has never been found possible and must be regarded as impracticable. It must be recognized therefore that the average result of experiments in crop measurement cannot be taken as a basis for assumptions. On rice land in Lower Burma, the figures, if taken over sufficiently large areas, afford a useful general guide, but in Upper Burma, especially with a variety of crops, the average result can only be of very little use and must frequently be misleading.

91. This has been recognized in practice. Settlement officers

Theory and
practice.

discard experiments which give too high or too low a yield, and the proportion discarded may be considerable. The majority of experiments

discarded by settlement officers are probably those which would

indicate an unduly high outturn. But on the other hand, as a result of the tradition of omitting to conduct experiments on fields when the crop is below normal or a failure, most of the low yields are disregarded. The assumptions regarding outturns therefore depend in a very high degree on the judgment of the settlement officer, but the tradition that they represent an average determined by experiment still survives and is supported by the publication of elaborate statistics purporting to justify them.

92. A supplementary basis for estimating outturns is by ascertaining from cultivators the produce of their holdings. Admissions by cultivators regarding outturns recorded during classification tend to be coloured both by the anxiety of the classifier that the admissions shall confirm his classification and by the anxiety of the cultivator that the classification shall correspond to his admission. Admissions recorded during the enquiry into rents are not ordinarily verified in the field and the outturns may not always relate to the area for which the rent is recorded. But such enquiries often cover a large area and errors of a few acres here and there would not affect the general results. There is less chance of error regarding areas in the case of outturns recorded during the enquiries into cost of cultivation, but these are comparatively few and the results may not represent the average. Another difficulty under this head is the multiplicity of main kinds and classes; it may be difficult to distribute the outturn over the component parts of the area from which it was obtained. But figures showing the outturn per holding irrespective of main kind and classes are useful as indications of assessable capacity.

93. Indian practice shows that satisfactory results can be obtained without any such elaboration of statistics as obtains in Burma. In every province some estimate of the outturn is an essential part of the operations. In some original settlements in Madras the procedure resembled that in Burma. But for many crops, such as cotton, it was regarded as difficult, or rather impossible, to ascertain by actual experiment the produce of a given extent of land. For this among other reasons productivity was estimated in terms of food crops and the difficulties of conducting experiments in mixed crop areas were avoided. The number of crop experiments rarely approached that customary in Burma, they were largely restricted to the higher classes, conventional estimates being adopted for the poorer soils, and much less importance was attached to the statistical results of crop measurement than in Burma. The estimates for one district were sometimes adopted for an adjacent district without further experiment. In revision settlements the settlement officer is contented with satisfying himself as to the allowance, if any, needed for deterioration. In Bombay the settlement officer examines the results of crop measurement by the agricultural department and may personally conduct a few experiments, but he uses them chiefly to guide him in estimating the average local yield per acre of each crop which is commonly accepted in the payment of produce rents. In the Punjab the estimate of outturns is a more important process. But the settlement officer makes great use of figures covering large areas supplied by

military farms, estates under the Court of Wards, and large land-owners. He may also conduct personally a few experiments but little weight is attached to them and, in some reports, the table of produce estimates gives no information whatever concerning the basis for the outturns assumed. A single estimate is framed for each main kind throughout the assessment circle. In the determination of outturns all crops which cover an appreciable area are taken into consideration and it is necessary therefore to determine the normal proportions sown and matured under each crop. The settlement officer selects those recent years, usually from three to five which he thinks will give a true normal, and the average of these is assumed to represent the normal proportion under each crop. In the Central Provinces the procedure is somewhat on the Punjab lines, but less elaborate, and a single estimate for each crop is framed for the whole district. Thus the whole conception of determining by experiment the outturn of each assessment class in every main kind in every tract is distinctively a feature of the Burma system. Another useful suggestion due to Indian practice is the possibility of checking crop experiments by enquiries over a large area. In mixed crop areas it is possible to ascertain the normal area under each crop, and it should not be impossible to estimate with approximate accuracy the total normal outturn over the whole area by checking the results of crop measurement with admitted outturns over large areas, and with figures obtained from mills, railway and shipping companies.

94. Experience in Burma has demonstrated the limitations of crop measurement and Indian practice shows that it is quite possible to arrive at a satisfactory assessment with very few experiments or even none at all. But while recognizing the limitations and fallibility of crop measurement and the possibility of greatly reducing the scale on which it has hitherto been the practice to conduct experiments in Burma, we nevertheless regard the numerous experiments as a useful feature of the system. Intelligently used, experiments can be of great assistance in classifying land; the intimate knowledge of outturns which a settlement officer gradually acquires by the careful study of numerous experiments in the field, even if the plots have been badly selected and carelessly measured, should help him to arrive at a figure for the normal outturn; and where, as in large parts of Lower Burma, there is a single crop practically secure and little difference of soil within the class, experiments conducted on a large scale over a long period do give an average which cannot lightly be disregarded in framing assumptions for the normal yield. Where conditions such as these obtain it is still necessary to bear in mind the fallibility of experiment and, in view of a tendency apparent in recent years closely to approach or even exceed the maximum limit indicated by experiment, it seems desirable to emphasise the need for great caution in this respect. Beyond this we consider it undesirable to limit the discretion of the Settlement Officer in the application of his figures; his opinion is worth more than his statistics. Still more is it impossible for any one to use the figures safely except the officer who compiles them; if he cannot be trusted neither can his figures, and any tendency to use the statistics as data for assumption must be dangerous.

95. We are of opinion therefore :—

- (i) That the settlement officer should endeavour to estimate as accurately as possible the normal gross value of the produce of each tract.
- Recommendations.
- (ii) That he should endeavour to arrive at this by two methods :—
- (a) by utilising so far as possible such information as may be available
- (i) as to crops marketed or exported, *e.g.*, from brokers, mills, railway and shipping companies, co-operative societies and large estates,
- (ii) as to the home consumption of each kind of crop,
- (iii) as to the normal area under each kind of crop from the land records statistics.
- (b) by repeated personal enquiries regarding the produce of individual holdings and of each soil class, checked by the results of crop measurement and statements by cultivators.
- (iii) With regard to crop measurement ;—
- (a) that any pretence of determining outturns by assessment classes by calculating the average result of experiments should be abandoned, unless the assessment class is sufficiently homogeneous in soil and physical conditions, and the experiments are sufficiently numerous, for the average result to constitute *prima facie* evidence of the normal outturn ;
- (b) that in order to obtain a representative selection the recent innovation by which a settlement officer or a senior experienced assistant selects representative fields from the map in office will ordinarily furnish a better representation of the general conditions of productivity than selections made in the field by subordinate members of the establishment ;
- (c) that for the settlement officer to obtain a just opinion of the general course of harvests, experiments should be continuous ; representative fields once reaped should be kept under observation throughout the course of settlement ;
- (d) that if the average outturn be calculated,
- (i) the limitations and fallibility of crop measurement as indicated above should receive careful consideration and the upward limit indicated by the average should only be approached with caution,
- (ii) it should be recognized that, where experiments as sufficiently numerous for the average result to indicate the normal outturn, it should rarely be necessary to reject any except for some defect on the face of the record ; and
- (iii) that where, as will frequently happen with continuous experiment, the figures include partial or total failures, the settlement officer should exclude experiments where the outturn would, in his opinion, receive exemption under the remission rules as actually applied within his experience in the district.

(iv) With regard to admission by cultivators it should be borne in mind—

- (a) that although cultivators tend to understate their outturn in any particular year they equally tend to state the normal outturn as that which can be obtained in the best year;
 - (b) that subordinate members of the establishment tend to record admissions which support their classification;
 - (c) that in areas of scattered holdings and mixed crops the cultivator can state his gross outturn with much greater accuracy than the outturn of any particular holding.
- (v) With regard to publication of the statistics—

- (a) that ordinarily it is impossible for a settlement officer to justify his assumptions within the limits of a settlement report,
- (b) that the publication of statistics without explanation tends to exaggerate their statistical value and does more harm than good; but
- (c) that the assumptions should be carefully justified in a form available for reference by the next settlement officer and others who may be interested.

96. The next element in the determination of the net produce is the price at which the produce should be valued.

Prices.

With regard to export crops it has not hitherto been difficult to determine the normal market price of past years. But in the calculation of local prices there is considerable room for error. Local records are defective and local prices cannot safely be deduced from the normal market price as communications have probably changed and disturbed their mutual relations. For crops sold locally or grown for home consumption any estimate must largely be fictitious. In the estimate of prices Indian practice helps but little; conditions there resemble more closely those of Upper Burma where differentiation of prices within the tract is rarely needed and in India for the same kind of produce it is usual to assume only one conversion rate over the entire settlement area, difference of prices resulting from bad communications or remoteness from markets being allowed for by grouping. These groups are very much larger than the price tracts of Lower Burma; in Madras it is quite common for the whole of one or more taluks (townships) to be in the same group. The single crop grown for export and the special conditions of communication, due to the extent of water transport in Lower Burma, rendered differentiation of prices within small areas possible and necessary, and introduced the conception of price tracts, which is peculiar to this province and allows a more refined gradation of price assumptions than is customary in India. But the Punjab procedure deserves notice. Here the proposals of the settlement officer regarding the prices which he proposes to assume are submitted at an early stage of the operations separately from the main proposals and when framing his assessments he fixes prices in accordance with the orders of the Financial Commissioner. The determination of prices is a matter of primary importance and as regards export crops it will be much more difficult in the future than in the past. It is possible in Burma for the settlement officer's assumptions regarding prices to be rejected when Government is passing final orders, with the result that his whole proposals may be

materially affected. This cannot be regarded as satisfactory and some adaptation of the Punjab practice might suitably be introduced. Orders on prices should be obtained in the preliminary assessment report which, on our proposals, will be submitted during first recess.

97. Neither in Burma nor in India have enquiries into the cost of cultivation been found satisfactory. The present instructions in Burma run as follows:—"The cost of cultivation will be calculated per acre on the basis of the average local rates for hire of labour, hire of cattle, cost of seed and the like.

Hiring will be allowed for in the estimate to the extent to which the resident cultivator ordinarily supplements his own labour and that of his family and plough cattle by hired labourers or cattle. In the cost of cultivation should be included depreciation of implements and farming stock and all ascertainable charges, both out of pocket and other which can fairly be debited to this head, the cost of living of the cultivator and his family, however, being excluded." These instructions have frequently been adversely criticised. They make no allowance for the labour of the cultivator and his family, and, strictly applied, would justify a higher assessment on the poorer cultivator, working a small holding with his own family, than on a wealthier man employing several labourers; they tax industry and encourage idleness. Again "ascertainable" charges vary greatly from place to place and from man to man and the standard consequently lacks definition. But the main objection is, perhaps, that figures which purport to show the cost of cultivation and, except in areas where hiring for all the operations of agriculture is general, exclude the principal element in it, are conventional, arbitrary, and meaningless; unless carefully handled, with a clear conception of their actual content, they can only be misleading.

98. The manner in which the instructions are applied has also been criticised. There are two methods by which the cost of cultivation can be estimated. On one method, numerous enquiries are conducted into the cost per holding and, to arrive at the cost per acre, the aggregate cost for the holdings dealt with is divided by their aggregate area. On the other method, the cost per acre is arrived at on the basis of enquiries directed to ascertain the cost separately for every item. The former method emphasises the importance of statistical results, and does not recognise items of expenditure, however important, which cannot readily be brought into a statistical form. The latter method renders it possible to make an allowance for every item of normal expenditure, but emphasises the element of judgment on the part of the settlement officer and cannot so conveniently be supported by statistics. The statistical method is more suitable where the allowance for cost of cultivation is supposed to represent "the actual money outgoings on the cultivation of an average holding." The other method is more suitable where the settlement officer addresses himself to the practical question of ascertaining the full and true normal cost of cultivation. The statistical method is that hitherto recognised and commonly employed in Burma. In Lower Burma during original settlements and the first round of revisions, the settlement officer was directed that "in order to arrive at a fair

average scale of cost of cultivation no effort should be spared to obtain as large a number of cases as possible from among all classes of the people and over the entire area under settlement." It was the practice for him to hold an enquiry in each kwin or village; every cultivator whose presence could readily be obtained was summarily examined. In 1909 the instructions were amended to exclude cultivators with small holdings not forming their sole means of subsistence. In Upper Burma the complexity of agricultural conditions was recognised in the earliest Directions and, although the settlement officer was still expected to conduct the enquiry for entire villages, he was only required to obtain statistics "in at least half of the villages under settlement." The amended Instructions of 1907 provided in greater detail for obtaining statistics regarding the cost of cultivating a variety of crops, and reduced the minimum number of villages, in which enquiries were to be held from 50 per cent. to 10 per cent. These amendments led the way for the present instructions under which the settlement officer is no longer expected to hold a summary enquiry for as many cultivators as possible, but is required to examine in great detail three representative cultivators in each kwin where cultivation is extensive. The amount of detail which is needed in Upper Burma, merely to ascertain the actual outgoings on various kinds of cultivation, has been grafted on to the Lower Burma practice in utilising the results; the enquiries are conducted almost in sufficient detail for the settlement officer to frame an estimate of the normal cost per acre, but the results are treated statistically by averaging the cost per holding. This is an important step towards the alternative method for ascertaining the cost of cultivation by estimating each item separately. The latter method has been generally employed in India, advocated from time to time in Burma, and actually applied with satisfactory results. As will appear below, we are of opinion that an allowance should be made for home labour and, although it would be possible to combine such an allowance with the present statistical method of arriving at the cost, the combination is not satisfactory, and we prefer the alternative, of estimating each item separately, as tending to bring settlement operations into closer relation with facts.

99. The problem of allowing for home labour is so important that, before examining the manner in which enquiries into the cost of cultivation are now conducted, it is expedient to set forth the arguments for excluding the labour of the cultivator and his family. There are two distinct lines of argument; one is that no allowance ought to be made, the other is that, although an allowance may properly be made, it is not convenient to do so in practice. The view that no allowance ought to be made rests on the theory that the state is the owner of the land and is entitled to a share as such; that the remuneration of the cultivator may rightly be regarded as included in the balance remaining after payment of the land revenue. This view has sometimes been adopted with regard to state land in Upper Burma but never found general acceptance in Lower Burma, and, both in Upper and Lower Burma, it has always been the practice to make some allowance for home labour, directly or indirectly. With the net profits standard the whole cost of living was allowed, including that met by the income from non-

S.M. I., 493
—500.

agricultural sources. When the net produce standard was first introduced at the instance of the Government of India, it was assumed as a matter of course that the full cost of cultivation would be allowed and it was proposed by the Local Government that the average cost of cultivation per acre should be calculated on the assumption that each holding was "cultivated entirely by outside labour, hired cattle, implements, bought seed, etc." It appears to have been contemplated that the method of framing an estimate for each item of cultivation should be substituted for the statistical method of averaging the results of numerous enquiries by holding. But the proposal did not meet with the approval of the Government of India, who were of opinion that only actual money outgoings should be allowed and that, after deducting the land revenue from the net produce as thus calculated, the balance remaining to the cultivator should be assumed to cover the remuneration for his labour. The grounds of their opinion were that an injudicious officer working out the net produce scale in the manner proposed by the Local Government might pitch it so low that, taken with the provisional standard of one-quarter, it might fail to give an adequate assessment and that, in some instances, the method proposed had been worked so as to show that cultivation was carried on at a loss. They also pointed out that the theoretical rates calculated in this manner would be higher than if the full cost of cultivation were allowed, and the disparity between the theoretical and actual rates should emphasize the fact that one-quarter of the net produce was a strictly provisional assessment; and that the actual rates should be framed with reference more to the current incidence and general circumstances than to theoretical standards which were extremely difficult to ascertain with any accuracy. Meanwhile in 1899-1900 experiments had been made in calculating the cost of cultivation on the assumption that all labour and cattle were hired. But these enquiries seem to have been conducted on the statistical method and the results were not in all cases found satisfactory, not so much owing to the cost assumed for hired labour being too high as to the assumed hire of cattle being fixed too high. Rates of hire were larger than if hiring were general and the application of these rates unduly raised the apparent cost of cultivation. The modification proposed by the Government of India was accepted and it was decided to exclude any allowance for home labour.

In 1907 the Government of India reopened the question by suggesting that an allowance should be made for "the cost of labour of the cultivator, his family and cattle, which is clearly a part of the necessary costs of cultivation." The Local Government however replied that the inclusion of these items would imply a reversion to the net profits standard, and this view was accepted. But there has been a constant tendency on the part of settlement officers to enlarge the authorised allowance for cost of cultivation. In some settlements an allowance has been made for so much of the labour of the cultivator and his family as could be ascertained with accuracy and this view prevailed so far that for a time the instructions were altered in this sense. In Tharrawaddy the settlement officer went further and, adopting the method of estimating each item in the cost of cultivating a typical holding, framed an estimate on the

assumption that on a typical holding all labour was hired. The Conference which dealt with his report criticised his assumptions as fictitious, because the area of the holding selected as typical was arbitrary and his method disregarded the economy of cultivation on large holdings. His assumption for the cost of cultivation, however, was accepted. The Financial Commissioner further objected that the assumption was uniform over the whole district and that it was not based on actual figures. It was decided on these grounds that the former practice should be restored, and that no allowance for home labour should be made when calculating the cost of cultivation. However, in practice, an allowance has generally been made by reducing the share of the net produce in areas where labour is little hired. The foregoing arguments for excluding any allowance for home labour from the figure for cost of cultivation, and the practice of making an allowance indirectly, will be further considered after the present procedure has been described.

100. The general Instructions are supplemented for each main head of the enquiry. These supplementary instructions, though detailed, are not satisfactory, and have been differently applied by different officers. The difficulty of calculating expenditure, Payments may be made in cash or in kind. Payments in kind are valued "at the price current in the village at the time of delivery or at the deduced price for the year according as the settlement officer may direct", but when rice grown for export forms the staple crop, payments are valued "at the deduced wholesale price of paddy determined for the assessment tract." This represents a normal for twenty years and is ordinarily much lower than the price in the year when the payments were made, thus reducing the apparent cost of cultivation for paddy.

The principal heads of expenditure are seed, labour and cattle.

For some crops the expenditure on seed is one of the heaviest items. The seed may come from stock, or be purchased for cash, or with borrowed money, or be obtained on condition of repayment with interest in kind. Frequently the source can only be verified by reference to the harvest preceding the year to which the enquiry relates, and, if the man examined remembers and states the source correctly, the allowance made will vary according to the manner in which it is obtained.

Labour may be paid for in cash, or in kind, or on the mutual help system. Daily labour is ordinarily paid in cash; seasonal labour, which prevails in Lower Burma, is ordinarily paid in kind. Mutual help is allowed for as if it were daily labour paid in cash. Payments in kind are made at harvest and the payment, being deferred, naturally includes interest. But when the cultivator borrows money to make cash payments no charge for interest is allowed. The proportion of hired labour varies greatly from village to village for many reasons, the size of holdings whether large or small, the existence of cotton, oil or saw mills, the presence of an artizan class available for agricultural operations in its slack times and so on. If there are more profitable openings for local labour, outside labour will be hired.

Uncertainty also obtains in calculating the cost of cattle. Over most of the country cattle breeding is carried on to some extent, and

not infrequently is more important than agriculture. Many people make a profit by training young cattle to the plough each season and selling them when trained. Often there is a long history of sales, purchases, exchanges and epidemics. In some places weak animals are sold and strong bought, in others fully trained animals are sold and young stock broken in, and in Upper Burma four or five cattle may be used for one yoke. The Instructions prescribe that, in addition to the cost of all new plough cattle purchased or obtained in exchange for produce, the value of plough cattle which died and were replaced other wise than by purchase or exchange during the year of enquiry and three years previous shall be allowed. The effect of this instruction has not always been clearly understood.

101: There are many other sources of error :—

(i) When a man practises two varieties of cultivation the expenditure and of correlating ture is distributed according to the area under the expenditure with each kind. For example, if a man cultivates the area three acres of stiff rice land and twelve acres of light sandy soil under dry crops, the Instructions require that four-fifths of the expenditure on cattle shall be debited to the dry crops, whereas probably the bulk of their labour has been applied to the rice fields.

(ii) The enquiries relate only to matured area. They cannot be conducted until the crops have all been reaped and cultivators must often be examined regarding expenditure incurred more than a year previously. Thus if the enquiry be held between September and December into the cost of cultivation of a man cultivating early sesamum, cotton, millet, red bean and rice, a typical combination, the record will show the expenditure on early sesamum during the year of enquiry and the expenditure on other crops during the previous year.

(iii) The area to which the enquiry relates is the area actually cultivated, excluding fields on which the crop was an entire failure. It follows therefore that under this system the cost of cultivation per acre, which is worked out from the cost of cultivation for the entire holding including failed areas, will appear high in a bad year and low in a good year, whereas the reverse is usually the case.

(iv) Again it is necessary to verify the area. The most satisfactory way of doing this is to survey the land which the man points out as having been cultivated successfully a year ago. The land has probably been occupied by two crops since, perhaps by three crops; a field without visible divisions may at any season have been under three crops, side by side or mixed. The cultivator cannot be expected to remember where he sowed each crop and his criterion of failure will certainly differ from that on which he is supposed to be assessed.

(v) The figures, when obtained, relate solely to the cost of cultivation in a single year. Even with a single crop, if half the cultivated area fails during the year of enquiry, the cost of cultivation will appear much larger than the cost in a year when all succeeds. With several crops the cost varies according to the proportions occupied by each crop and this will vary with the seasons.

102. These instructions tell their own tale. Refinement has been added to refinement in the vain search for arithmetical certitude in calculating a factor which is Indian practice.

beyond analysis by the crude machinery of settlement. First and last, estimates of the cost of cultivation must depend on the care and judgment of the settlement officer; neither can be supplied by rules however detailed. Let us turn to consider how the difficulty is met in India. In the Central Provinces and the Punjab where assessments are based on rents, the cultivator is necessarily allowed the full cost of cultivation. In the Punjab it is expressly laid down that, where the estimate of the net produce for an assessment circle is checked by a separate estimate for a well-irrigated holding, actual or supposed, "if the owners cultivate themselves a reasonable sum must be allowed as the price of their labour." In Bombay the difficulty is avoided owing to the limitation of enhancements. In Madras, where the basis of assessment is the net produce, the directions for original settlements contemplate the inclusion of home labour in calculating the cost of cultivation. But the enquiry was very much simpler than in Burma:—

(i) Mixed crops were excluded and only one or at most two food crops were taken into consideration for wet and dry cultivation;

(ii) There was no attempt to arrive at an average by recording the actual expenses of a large number of cultivators; the cost of cultivation was calculated by the settlement officer on the basis of his general experience and he made no attempt to support it by statistics;

(iii) The figure arrived at by the settlement officer was assumed to be the cost of cultivation uniformly over the whole district for the best class of soils; the cost of cultivating inferior soils was based on conventional reductions. Thus if an acre of land yielding 1,500 lbs. of rice cost Rs. 20 to cultivate, the cost of cultivating an acre yielding 1,000 lbs. might be assumed at Rs. 12 to Rs. 15;

(iv) At revision settlements the cost is not recalculated in detail. The resettlement is based chiefly on prices and the settlement officer examines in general terms how far a rise in the cost of cultivation must be set off against the rise of prices. Where rents are numerous, these are utilized as a check on the estimates for cost of cultivation. If, on the basis of the rents generally prevailing, a sufficiently high enhancement can be taken it is clear that the proposed assessment must be below the half net produce standard. Thus Mr. Stuart writes in the Chingleput Report: "A useful check on calculations of cultivation expenses is afforded by the fact that one-half the gross produce is universally recognized, under the *varam* system, to be a fair return to the cultivator for the expenses of cultivation and to leave him some profit besides. For the better wet lands as low a share as one-third is held to be sufficient. In the table below the value of half and one-third the gross produce is compared with the result of increasing the present scale of cultivation expenses by fifty per cent. . . . It will be seen that to increase the cultivation expenses by more than 50 per cent would give figures which are far in excess of the value of the half *varam*. Now it is certain that the average cultivation expenses can never exceed, and must in general be below, the value of the half share. It is thus clear that cultivation expenses have not increased by more than 50 per cent and that an allowance of an increase by this amount would be ample." And Mr. Jackson in the Tanjore Report writes:

"Some interesting results can be obtained by considering the expenses of cultivation on the *varan* system, which, from the mirasidar's point of view, is the cheapest system of inclusive contract for labour."

103. We are now in a position to examine the arguments against

Further consideration
of home labour.

the inclusion of an allowance for home labour
in calculating the cost of cultivation. Except
with regard to state land in Upper Burma it is

difficult to support the view that no allowance ought to be made.

Although in practice on royal land the Government took 10 to 25 per cent. of the gross produce, in theory it seems that the land was rented on terms of partnership entitling Government to half the produce after deducting the portion actually paid as wages. That theory applied to royal land and could also be applied to land declared to be state land after the annexation, but non-state land in Upper Burma was from the outset regarded as entitled to a privileged rate. In Lower Burma the view that land belongs to Government has been vigorously confuted and any claim to exclude an allowance for home labour on this ground can hardly be sustained. In view of the fact that the proposal of the Government of India in 1907 to make an allowance for home labour was rejected as a reversion to the net profits standard, it may be well to notice that the old net profits standard allowed deduction of the full cost of living as determined by enquiry and was quite distinct from a standard of net produce covering the full cost of labour. But it seems unprofitable to examine at length the theoretical justification of either view, for in practice the equity of making an allowance has been generally recognized; the question has been dealt with on the ground of practical convenience and indirectly an allowance has ordinarily been made. The consideration which seems to have carried most weight with the Government of India when they recommended the exclusion of an allowance for home labour was that such an allowance might result in figures showing that cultivation was unprofitable and lead an injudicious officer to frame unnecessarily low rates. This suggestion loses much force when it is remembered that, even on the present interpretation of net produce, figures show not infrequently that cultivation is conducted at a loss, and that on numerous occasions the Local Government has enhanced very considerably the rates proposed by settlement officers. Their further suggestion that the high pitch of theoretical rates on the system proposed by them would clearly mark the importance of general considerations has not been justified by experience. In fact the proposal which they put forward on the ground that it would emphasize the practical aspect of settlement was accepted by the Local Government because it gave the most convenient statistics; the statistics collected on the basis of allowing for all labour and cattle as if hired unduly raised the apparent cost of cultivation. That is the substance of the whole controversy. If it is admitted, as it always has in general been admitted, that an allowance for home labour should be made, the whole question as to the manner of making it depends on the importance regarded as attaching to statistics.

In one tract, A, 90 cultivators may hire all their labour and 10 hire none; because of the large proportion of hired labour the net produce will be low. In another tract, B, there may be

S.M. II,
E, 13, 29.

S.Q. II,
43, 44, 208.

S.M. I, 437.

go who hire no labour and to non resident landlords who do no work at all; because of the low proportion of hired labour the net produce will be high. The term "net produce" means something quite different in these two tracts; the term in itself and without reference to the circumstances is meaningless. In the latter tract, B, the theoretical rate of assessment will be high because the people are industrious; in the former tract, A, it will be low because they are lazy. This anomaly will probably (though not necessarily) be corrected in some degree by taking a higher proportion of the net produce in the former tract, A. This not only complicates settlement procedure and settlement reports but is further open to serious objection as penalizing the thrifty and industrious minority in tract A. Again there are numerous grounds on which the fraction of the net produce taken may be varied; it will be lower where crops are precarious or holdings small, and so on. The settlement officer is excused from making a definite allowance for home labour but expected to make an indefinite allowance. The only justification for this is that it is difficult to combine a definite allowance for home labour with statistics that already comprise an indefinite allowance. In both the tracts taken as example, the average cost per acre includes an allowance for home labour based on the expenditure of those who hire labour but, in both, the statistical result rests on enquiries made not only from some who do not hire labour and some who do; all that can be postulated is that in one a larger allowance is made for home labour than in the other, the degree of difference cannot possibly be determined.

The matter of estimating the full and true normal cost of cultivation has been subordinated to the quest for arithmetical certitude, and the degree of detail and the numerous defects in the instructions show that, even when the enquiry is thus deprived of all utility for the practical purpose of assessment, there only remains "a quagmire of statistics." The practice adopted in some settlements of making an allowance for home labour where it could be determined with accuracy only carries still further the refinement of detail and reliance on statistics which mark the present instructions. Other methods of improving the statistics have been suggested and considered but it seems unnecessary to discuss them. We are compelled therefore to fall back upon the alternative method which we mentioned at the beginning of this chapter, and to recommend that the cost of cultivation be estimated on the basis of enquiries directed to ascertain the cost separately for each item with a view to arriving as accurately as conditions allow at the full and true normal cost of cultivation. This method was adopted by Sir Harvey Adamson when settlement officer of Tharrawaddy in 1881; as already mentioned it was again adopted in Tharrawaddy at the last re-settlement. The objections raised on the latter occasion were that the estimated cost was not based on actual statistics and was therefore arbitrary and fictitious, that it was uniform over the whole district and that it disregarded the economy of large holdings. These objections rest on several assumptions; that assessments can be based upon statistics; that, apart from the labour of the cultivator and his family, the cost of cultivation can be ascertained with accuracy; and that a settlement officer, who can be trusted to check and interpret figures obtained by a subordinate questioning a series

of cultivators according to a standard form, is incompetent to form an adequate estimate of the true cost of each item of the cost of cultivation. One objection alone carries any weight, the objection that a uniform estimate was applied over the whole district. The same objection might be applied with greater weight to the application of a uniform estimate for every assessment class, which is the general practice. In some cases, where a minute degree of accuracy is needed, it may be desirable to vary the estimate for cost of cultivation for different areas or different classes. But in general it must be accepted that any estimate for the cost of cultivation by the processes of settlement must necessarily be rough, and that, as the actual rates of assessment will fall so far below the theoretical standard, variations from place to place and class to class can safely be neglected. We do not wish to countenance the action of the settlement officer in Tharrawaddy in departing from the Instructions without obtaining previous sanction, but he rendered useful service in showing that it is possible to frame an estimate for the full and true cost of cultivation which can be applied for the practical purposes of assessment.

104. We are of opinion therefore that the principles on which cost of cultivation is at present calculated are unsound, and that the manner in which they are applied is unsuitable. The principles are unsound because they lend support to a view of land tenure in Burma which is contrary to fact; they expose Government to the charge of severity in assessment and do in fact encourage high assessments; they justify, and do in fact conduce to, the taxation of thrift and industry. It is impossible to approve the manner of their application by which subordinates on low pay with no special training put questions on stereotyped lines to hundreds of cultivators, who have no incentive to answer them correctly, on points of detail which they cannot possibly remember, and produce misleading statistics which complicate procedure; have no meaning and are in fact discarded; enquiries conducted in this manner are of little use and even mischievous. In their place the settlement officer should be required to frame an estimate for what may conveniently be termed the cost of production, that is the true and full cost of cultivation, including an adequate allowance for all labour expended by the cultivator and his family. In this recommendation we are fortified by the practically unanimous opinion of all officers with settlement experience whom we have consulted and by the fact that nowhere in India is the term net produce interpreted in the sense which attaches to it in Burma. The framing of such an estimate should not present great difficulty. At present the settlement officer does or ought to make some estimate when deciding on the fraction of the net produce to be taken. This estimate, which is now glossed over, should be explicit.

Even if we considered, as we do not, that it is desirable to fetter settlement officers with minute instructions upon points of detail, this report is not the place for them. But it is hardly sufficient to lay down that the settlement officer should endeavour to ascertain the full and true normal cost of cultivation; we may properly be expected to indicate what significance we attach to the term and how

it may be ascertained. There is no such thing as a true cost of cultivation in the abstract, the cost will vary with the nature of the soil, the climate, the rate of wages; the size of holdings and many other factors; it will be relative to the general local conditions of agricultural economy. The settlement officer should endeavour to ascertain the true cost of production over a long period under the local conditions of agriculture at the time. Where there are large holdings with four or five ploughs working under an agent, the cost of production can readily be calculated; the cost as calculated will be the same on the method now proposed as on the method hitherto adopted, the balance over a long period will represent, the amount which a prudent tenant could afford to pay in rent. Where holdings are small and agriculture merely a part time occupation, the measure of cost of production is identical; it represents the normal produce less the amount which a prudent tenant could afford to pay in rent. If he pays more than this, he will be living on his capital, or his labour will be under paid; if he pays less he will be absorbing a portion of the rental produce, the produce which might be taken from him as rent. The normal gross value less the amount which a prudent tenant could afford to pay in rent we regard as the full and true normal cost of cultivation. The procedure in Madras indicates two independent methods for ascertaining this, directly by calculating separately each item of the cost, and indirectly by ascertaining the produce left to cultivators after paying rent. We contemplate that the form for enquiries should be similar to that now used and we do not wish to under-rate the importance of numerous enquiries. But the reason for multiplying them at present is to enlarge the statistical field for averaging. We regard that as unsound. We should not wish to limit their number and we do not object to the preliminary enquiry being held, as at present, by subordinates. But the part played by superior officers should not be merely that of checking answers to routine questions, they should endeavour to utilize the enquiry for building up a picture of the true cost of production. This new conception of the purpose of the enquiry will in itself limit the number which it is possible to hold, and we see no virtue in mere numbers. A few enquiries conducted with intelligence and care are worth hundreds conducted by routine; probably in fact the hundreds of routine enquiries are useless, if not worse, they omit much of the relevant material and all share a bias which does not average out. The material prepared by subordinates should be used by officers who have sufficient breadth of view to arrive at the true cost of production. On this basis, the settlement officer would frame his direct estimate. He would again approach the problem from the other end, and from the actual conditions of tenancy ascertain how much rent could be paid by a prudent tenant. These two estimates would mutually serve as checks and the result should be approximately correct. There remains for consideration the necessity for varying the estimate in different areas or in different soils. This should rarely be necessary without a sharp differentiation of the crops grown. A difference in cropping would immediately direct the attention of the settlement officer to the need for scrutinizing and, if necessary, modifying his estimate. There-

might however be other differences not immediately apparent. It is improbable that a capable officer would overlook them. But there is already in existence a machinery for ensuring that he does not. Soil classifying inspectors are now required to record in Field Form A the normal cost of cultivation item by item for every kwin. On the procedure now recommended similar information will be recorded in the village note book; an examination of these records will direct the attention of the settlement officer to special local conditions possibly requiring special treatment and, after such local enquiry as he may deem necessary, he can vary his estimate to make it suitable.

The estimate formed by the settlement officer cannot be justified within the limits of an ordinary report. He should therefore justify his estimate separately from the report in a form available for the next settlement officer and others who may be interested.

105. Thus the net produce basis as at present defined is dangerous.

The present definition of net produce unsatisfactory.

It is misleading in two ways. It restricts the cost of cultivation to the out-of-pocket expenditure and this encourages the view that cultivators have no proprietary interest in the land. Further the exclusion of out-of-pocket expenditure of cultivation is liable to be misinterpreted as excluding the true cost of cultivation. It has often been assumed that the pitch of assessment in Lower Burma is moderate, whereas, though tempered by a liberal system of allowances for failure and fallow, it is high as compared with India, and the misconception must in some degree be attributed to the misleading definition of net produce. It penalizes the poor, thrifty and industrious for the benefit of the wealthy, extravagant and lazy; it is indefinite and cannot be understood without reference to the particular tract to which it is applied, it leads to the complication of settlement proposals, and is without parallel in India. The manner of its application is laborious and inaccurate, the wealth of detail and the minute scrutiny to which cultivators are subjected, and the imposing array of statistics which it produces, tend to beget a confidence in the general effect of the results which they in no way deserve. Assessments on this basis cannot be explained nor justified nor stand criticism, either as regards the theory or practice on which they have been framed. We do not wish to suggest that individual assessments are in general inequitable. Differences in assessment, at least within a single kwin or village, do ordinarily, where the classification is broad, correspond with differences in outturns. The enquiries into net produce as at present conducted do not however contribute to this result, and calculation of the net produce by allowing the true cost of cultivation would tend to distribute the demand more equitably than at present.

106. We recommend therefore that the basis of assessment should be the balance remaining after deducting from the value of the yield the cost of production; that is, the true and full cost of cultivation, including an adequate allowance for all labour expended by the cultivator and his family on the land. This, in effect, was the basis adopted by Sir Harvey Adamson when Settlement Officer of Tharrawaddy in 1881. The basis now proposed is distinct from the net profit basis which allowed deduction of the whole expenditure on living, and from the present net produce basis which allows the deduction of little

The true net or rental produce.

more than the actual cash expenses. The basis now proposed corresponds with that understood as the net produce in India, but to call it net produce would tend to confusion with the basis now obtaining, and a distinctive term seems necessary. The balance which remains after deducting the cost of production is the amount which a prudent tenant could afford to pay in rent, and represents in fact the economic rent, the amount by which the land is better than land on the margin of cultivation. It might therefore conveniently be termed the "Rental Produce."

107. The deduced gross produce depends on the yield under each crop and the proportion of the area under each crop; its value depends on the accuracy with which prices can be ascertained; the net produce further depends on the accuracy of the estimated cost of cultivation. All these factors are in some degree inaccurate or even indeterminable. From an assumed gross value largely fictitious, certainly containing numerous errors, and in part dependent on the conditions of a single year, an assumed cost, equally fictitious, erroneous and fluctuating is deducted. The resulting net produce value has less relation with fact than either of its components. It is waste of time to calculate this figure for every soil class and, in fact, the calculations are not made a basis for rates and often are entirely thrown aside. The calculations will be less artificial on the basis of rental produce, but even with this it seems preferable to follow the precedent of the Hanthawaddy settlement and calculate the rental produce for the assessment tract.

108. It has not been found possible in the past and, even with the more generous allowance for cost of cultivation now recommended, will not be possible in future to assess land on the half rental produce standard. By prescribing a harsh standard and a lenient interpretation Government incurs odium without advantage. Settlement officers fear that their proposals may be adjusted to the standard, and are not without sufficient grounds for apprehension, as this course was actually adopted in Insein; they tend therefore to present figures which will stand scrutiny and to make the demand look as heavy as they can. So that critics are able to quote a severe rule and apparently severe assessments, whereas the rates, though heavy by comparison with India, are much more lenient than they seem. We recommend therefore, following the amendment of the Madras Instructions in 1915, that the present standard be modified, that the fraction of one-half be prescribed as the maximum which the state may take and not as the proportion to be taken; and that this should be the standard both for Upper and Lower Burma.

109. This fraction of one-half the rental produce will be the standard for theoretical rates. But circumstances will rarely permit any close approximation of the actual rates of assessment to those given by the standard. The theoretical rates provide a standard, they afford little or no guidance to the rates which can actually be applied; for these it is necessary to consider many other circumstances; the rents actually paid, sale and mortgage values and, above all, the current incidence in the area for settlement and in adjoining districts. These are the factors which determine the demand and we examine them in the following chapter.

CHAPTER XII.

THE DETERMINATION OF THE ACTUAL DEMAND.

110. The principal considerations which must be taken into account by the settlement officer in adjusting theoretical rates to practical conditions are rental and land values, gross produce, the incidence of the current demand in the settlement area and adjacent districts, the cost of living, agricultural indebtedness, the density of population, size of holdings and non-agricultural resources. There is another consideration which by itself almost outweighs all these, the financial position of Government; but this lies outside the province of the settlement officer. In the following paragraphs we discuss these data for determining the actual demand.

111. It has long been recognized that the rents paid by tenants may afford valuable assistance to the settlement officer, both in determining the demand and in arriving at an equitable distribution. The Instructions define tenant rate or rental value as the full fair rent, an approximation to the net profits, the gross amount which a tenant can afford to pay. Half the rental value, although not the authorized standard, is recognized as a useful check on assessment proposals. But this abstract economic conception is not rigidly distinguished from the material rents actually paid; the Instructions proceed to lay down that, if statistics are carefully compiled, in all tracts where tenants paying true rents hold a considerable area, the rental value provides a useful secondary standard, and the term rental value is loosely used to cover actual rents. In settlement reports the rental standard with which assessments are compared is that of actual rents and not of rental value. Rents are classified under four heads as partnership, share produce, fixed rents, subdivided as fixed produce and fixed cash, and others, the most common form of the last being tenancies where the rent paid is the land revenue only. Share produce and fixed rents are regarded as true rents unless the tenant holds at a privileged rate. The Instructions prescribe that, for determining rental values as a basis of assessment, fixed rents should be considered the more useful, but share rents should not be ignored. Rental statistics are compiled separately for each assessment class in each main kind and for every crop assessed at a special crop rate, and are also separated for state and non-state land in Upper Burma if these are differentially assessed. The returns and rents of holdings falling under more than one of the above heads are distributed in the statistics so far as practicable.

Some details in the instructions for recording particulars relating to tenancies deserve notice. The standard form provides only for three crops and four classes. It requires particulars regarding proprietary tenants, who are not often found, but makes no provision for the cases, not infrequent, where cultivators work their own land as tenants of mortgagees. The prescribed form contemplates that tenancies are annual, which is by no means invariably the case, but

provides for the comparatively infrequent cases where tenants render services in addition to their nominal rent. The principal defects, however, relate to the calculation of areas and produce values. The Instructions prescribe that, for partnership and share produce tenancies, only the net cropped area shall be entered. The effect of this is to minimise the area rented and to introduce discrepancies with the land records figures. Again, rice grown for export is valued at the price assumed for the tract on an average of 20 years. This reduces the apparent rental values and also vitiates comparison with the land records figures for the same year, which calculate the value at the harvest price of that year. Another defect of less importance is that the settlement clerk is expected to note the reasons for exceptionally low and high rents. This will often be beyond his powers, and if he is to record his opinion on it, the Instructions should provide for special attention to the point by inspecting officers. Again, in compilation, lands on which exceptionally high or low rents obtain are omitted, thus reducing the area which the statistics show as rented.

112. During the original settlements in Lower Burma the area held by tenants at rents approaching a competitive

The use of rents :
(a) for assessment.

pitch was comparatively small, but settlement officers were directed to record tenancies, as the number was believed to be increasing and fuller information was regarded as essential. Supplementary instructions issued in 1882 emphasized the importance of special care and accuracy in investigating the conditions of tenancy; "the fullest information . . . omitting no detail of any sort" was to be furnished. But rental values were not indicated as a guide to assessment and, although they were mentioned in the Report on the Akyab Settlement of 1885 to 1887, they did not receive any serious consideration until the settlement of Thongwa in 1889-90. When the procedure for revision settlements was under discussion, the Government of India invited attention to the importance of rents as a guide to assessment and suggested that, in view of the uncertainty and impracticability of the half net profits standard, letting value might be taken as an alternative basis of assessment. In Upper Burma settlement officers had already been directed to compare the rates proposed for assessment with the tenant rents, and in 1900, although the Local Government was unable to accept rental values as a sufficiently stable basis for assessment, the Instructions for Lower Burma were revised on the lines of those applied in Upper Burma; on a further revision in 1907 the instructions regarding the attention to be paid to rental values were amplified and assumed substantially their present form. The position now is therefore that weight should be given to rents; but the degree to which this should be done has never been defined, and in practice has varied from district to district and with different officers. Some officers tabulate but do not use them.

The use of rents for classification of land within the kwin or village must be distinguished from their use for assessment. There are no precise instructions that rents should be considered in classification and the practice has differed in different settlements; many, probably most, officers do not attempt to use them for this purpose.

S.M. I.
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S.M. I.
369.
S.M. I.
429.
S.M. II
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113. The occupied area in Lower Burma covers $9\frac{1}{2}$ million acres and the rental area $3\frac{1}{2}$ million acres. In most districts, over one-third, and in some more than half, the total area is let at full rents. In Upper Burma most of the tenancies are on the share produce system and do not appear in the annual statistics, but the figures in the settlement reports show that in several districts large areas are rented—

District.	Area in acres.		
	Occupied.	Cultivated.	Rented.
Pakōkku ...	734,940	389,937	246,146
Lower Chindwin ...	772,710	435,442	231,219
Myingyan ...	1,106,092	526,715	150,633
Sagaing ...	768,319	501,757	127,829

These figures are not exact, as in some settlement reports the statistics refer to occupied areas, in some to cultivated areas, and in some partly to occupied and partly to cultivated areas; they show however that in many districts the rented area is sufficiently extensive to form a basis for estimating the rent actually paid. But there is a tendency to discard the statistics in Upper Burma on the ground that rents are customary, and in Lower Burma on the ground that they are not. Neither reason appears sound. It is generally recognized that even the quasi-customary rents of Upper Burma are higher on the better soils, or where the population is dense, which in itself may point to a good soil; these are indications of assessable capacity which cannot with safety be rejected. In Lower Burma it was formerly the tradition that rents were too low to afford a basis for assessment; now it is argued that the tenants are migratory and pay, or offer, more than the land is worth, that landlords often fail to recover the nominal rent, and that rents are consequently too high to utilise for assessment purposes. This view is not without foundation, but is a reason for scrutinising rents the more carefully instead of disregarding them. The tendency to neglect rental statistics would seem in large part due to the practice of paying insufficient attention to them in the field; often the figures are not before the settlement officer in any convenient form until near the close of operations. This in turn is partly due to the disregard of the elaborate and, in Lower Burma, on the whole accurate statistics relating to tenancies and rental values annually compiled by the land records department. It has another cause. On the mathematical conception of settlement, rents must be calculated by soil classes. But a very large proportion of the rents relate to tenancies comprising more than one main kind or soil class; such tenancies cannot be used satisfactorily to determine rental values by soil classes, and their exclusion reduces the area covered by the statistics to an extent which renders these of little use. The average rental of a whole tract however presents a valuable index to its assessable capacity, and is ordinarily the best guide in determining the demand.

When using rents for the purpose of determining the demand, one consideration of great practical importance should be borne in mind. High rental values are ordinarily regarded as just—

ying high rates but, in Lower Burma, it is a common practice for landless cultivators to buy land with borrowed money, thus paying interest instead of rent, and in any tract where rents are high there may be several men in this position. To impose on such men an assessment that a landlord can pay easily may compel them to surrender their land and sink back to the position of tenants or labourers. In view of the policy of Government to establish cultivators on the land, it is necessary, where this practice obtains on a considerable scale, to apply with caution the argument that high rents justify a high assessment.

114. In the Central Provinces the tenure system renders unprofitable any attempt to compare the area rented there with that in Burma; in the Punjab the proportion rented is not materially higher than in Burma; in Bombay and Madras no statistics are published but the proportion rented appears to be less than in Burma. In Madras and Bombay there is no attempt to base the assessment on statistics in the way in which this is done in Burma, but the Punjab procedure more closely resembles that adopted here. The rent per acre for each soil class (it should be remembered that a Punjab soil class corresponds to our main kind) is separately calculated for fixed rents and for share produce rents, including under the latter head partnership tenancies. For example, if 50 per cent. of the rented area were let on a half share, 30 per cent. at one-third share and 20 per cent. at one-fifth share, the average fraction for the whole settlement area would be worked out at two-fifths. From the estimate of the gross produce deductions are made for any contributions by the landlord, for fodder crops used for maintenance of the tenant's stock, for customary dues to the village menials, and for wages of hired reapers, which are almost always paid in kind. In canal irrigated areas it is the universal practice for an owner who takes a share of the produce to pay an equivalent share of the sum due to Government for water rate; a proportionate reduction on this account has to be made from the gross value of the landlord's returns. To the balance, after these deductions have been made, is applied the fraction representing the landlord's share, and this, converted into money, represents the net rent for the whole rented area which, divided by the number of acres rented, gives the rent per acre on the share produce system. The rents per acre on the fixed cash and grain rent systems are similarly ascertained and the settlement officer takes all these figures as a guide in fixing the rent per acre for assessment over the whole settlement area, both for land which is rented and that which is cultivated by the owners. A similar procedure could be adopted in Burma without difficulty wherever the rented area is considerable; in other places the practice of Bombay and Madras, on which actual rents are used to indicate the maximum limits of the demand, would seem appropriate. Where share produce rents prevail and cash rents are the exception, little dependence can be placed on the latter as they frequently represent interest on money borrowed.

115. Mortgage and sale values may be used to supplement rents both for the determination and distribution of the assessment. But the instructions regarding
Land values.

their use are less definite, and the practice varies as largely as in the case of rents. In Upper Burma absolute sales are rare and difficult to interpret because, in fact though not according to the deed of sale, they are frequently intended, by at least one party, to be conditional. It is often argued that mortgage values are too indefinite to afford much assistance, but a comparison with sale values indicates that where conditions are stable there tends to be a fairly definite relation between them in the same neighbourhood, and suggests that more dependence might be placed on mortgage values as an index to assessable capacity than is ordinarily recognized. Both mortgages and sales express so many years purchase of the land, and the interest is in effect a substitute for rent. In some Indian provinces, particularly in Rombay and to a somewhat less extent in Madras, land values are expressed as multiples of the assessment and are freely used as a check on assessment proposals. It would seem that more use might be made of them in Burma where the indications from rents are insufficient to determine the assessment. As in the case of rental produce and rental values, land values should be calculated by tracts and not by assessment classes.

With regard to sales, the instructions are generally suitable except that the field clerk is expected to record the reasons for selling, which is beyond him, that the forms only provide for four classes of land, and that the information with regard to sales is differentiated by tenure according as the land is state or non-state. As this distinction is not generally recognized nor understood by the cultivators, the effect is to reduce the value of the statistics. The same objections apply also to the record of mortgages, but this shows further defects. In Upper Burma the area under usufructuary mortgages is so extensive that it has not always been found possible to comply with the instructions. Again, mortgages have been incurred at various dates, some of them are several years old and the instructions do not provide for recording the year of mortgage. Without this information the figures throw little light on current mortgage values.

116. Where rents, sales and mortgages are rare, a useful corrective of the rental produce standard, which in such circumstances depends too largely on the detailed estimates for cost of cultivation, is the gross produce. Rates must be low in undeveloped areas, and rarely can, nor ever do, exceed one-tenth of the gross value, which may safely be taken as a maximum.

117. In practice, the consideration to which most weight has been attached is the incidence of the current demand. The safest measure of the amount which can be paid is the amount now paid; the standard actually most relied on is the standard of past assessments. This however has been obscured by the custom of dealing with soil classes over rather large areas and neglecting to study the effect of the proposals by villages and kwins. A comparison of assessments on a smaller scale than the tract shows that wide local variations may be concealed beneath almost identical totals for the past and proposed demand over the whole tract. It is certainly necessary therefore for the Settlement Officer to contrast the present and proposed demands by smaller units than at

present, and to modify the proposals according to circumstances. But it does not seem necessary to consider the effect by holdings, as individual variations can be dealt with by rebates and deferred enhancements. The practice of testing proposals by the current demand was extended in the last settlement of Tharrawaddy by comparison of the incidence of the proposed demand with the incidence of the demand sanctioned in similar districts where the settlement had recently been revised. This we regard as a useful precedent. But while recognizing uniformity of incidence over the whole province as an ideal, which, among other advantages, would permit Government to vary the demand in accordance with current financial requirements, it must be remembered that, under the present system of land revenue, arguments based on a consideration of rates in adjacent districts tend to lead the settlement officer beyond the limits of his functions. These rates will have been dictated by various financial considerations; the fixing of the demand is a matter of financial policy and the business of Government. The function of the settlement officer is to provide the material on which orders may be passed, together with a reasoned examination of it and an opinion, based on his local experience, as to what the proper assessment should be.

118. The analysis of indebtedness is rarely profitable and the enquiries into cost of living, as at present conducted in detail on a large scale, are quite useless. The instructions prescribe that an enquiry shall be made into the cost of living of every cultivator examined with regard to cost of cultivation; that is to say, three men for every kwin where cultivation is extensive. The preliminary enquiry is conducted by an inspector and the entries must be thoroughly tested by the section officer. The income is recorded under the heads of rent received, profits of cultivation, non-agricultural income and borrowings. The expenditure is recorded under the heads of produce consumed, and cash spent on food grains; other food, such as cooking oil, condiments, confectionery, and tinned food; drugs, such as tobacco and betel; household requisites, cooking and eating utensils, rugs, mats, lamps, fuel, toilet requisites; and miscellaneous items, such as clothes, charity and buildings. If the expenditure exceeds the income, the source from which it was met, for example, by borrowing or gifts from relatives, must be recorded. It will be clear that such an enquiry must be very lengthy and is not likely to be appreciated by the people, who are called on to divulge their most intimate affairs to a stranger and, quite possibly, in public. Even if the ordinary cultivator could off-hand furnish a budget for the year, balancing his income against his expenditure and explaining any deficiency, there is no inducement whatever for him to do so.

The enquiry into agricultural indebtedness is open to the same objections and also to several others. Loans are classified under nine heads according to the manner in which the money borrowed was spent, and if in any transaction money was spent, as usually happens, on two or three different items, the sum used for each transaction is treated as a separate loan. Similarly, unpaid interest carried over to

a new bond is treated as a separate loan. The results are greatly influenced :—

- (i) by the time at which the enquiry is held, whether before or after an important harvest ;
- (ii) by the profits of cultivation during the recent season ;
- (iii) by the price of food ; and, above all,
- (iv) by the willingness of the cultivators to give information.

Thus the results are misleading, and the instructions for pigeon-holing the figures under nine separate heads make them even more artificial. They not only furnish a mass of figures which, so far as they are accurate, mean very little, but they are defective in failing to indicate how far the indebtedness is temporary or permanent, which is one of the most important considerations in any analysis of agricultural indebtedness. With an assessment on rental produce, detailed consideration of these matters, except so far as is necessary for estimating the rental produce, becomes purely a matter of economic interest. Similarly, density of population and the size of holdings affect the rents and should need little further consideration for assessment purposes. Elaborate enquires into indebtedness and cost of living will therefore rarely be required.

119. We are of opinion then that the assessment should not, as at present, purport to be determined by mathematical calculations of the net or rental produce. The determination of the demand. The rental produce should form the basis of assessment, and proposals should be standardised with reference to this basis ; half the rental produce should be recognized as the maximum. This will represent the upward limit of the demand. Similarly the existing demand will ordinarily represent the minimum. The practical object of the settlement officer is to find some point between these limits at which the demand may suitably be fixed ; that is the essential operation of settlement which requires justification in detail by such evidence as he can educe. This evidence is to be found in the general conditions of the area under settlement. The settlement officer may sub-consciously feel his way to a correct assessment with little or no formal analysis, as at present ; but he can only justify his proposals to Government and the people by collecting and analysing the data. Thus, assessment proposals should be framed on a general review of the indications of assessable capacity and should be standardised with reference to the rental produce. Although the rental produce will remain the basis of assessment, this will be verified, and the assessment, will be limited, defined and distributed, with reference to rental and land values and other general considerations, such as the incidence of the present demand, but, where tenancies form a suitable guide, mainly with reference to the rents actually paid

CHAPTER XIII.

DISTRIBUTION OF THE DEMAND: CLASSIFICATION.

120. In every revenue system the distribution of the assessment is effected very largely by classification. This is clear where the classification is permanent, or where the total assessment is determined by general considerations; but the nature of classification is obscured, and in some degree modified, when, as in this province, it is also utilised in determining the gross produce. But in certain respects its nature is more clearly apparent in Burma than elsewhere. In general settlement literature the term covers only two processes; the distribution or "sorting" of soils according to their physical constitution and position, and the process of grading them in classes. In Burma the signification is enlarged; the Settlement Instructions regard the term as comprising also the division of the settlement area into primary tracts, and the varieties of cultivations into main kinds. The first operation according to the Instructions should be to divide the settlement area into primary tracts within which the conditions of soil and agricultural economy are generally homogeneous. Differences within the tract are recognized where necessary by the formation of assessment tracts, also geographically continuous. The principal varieties of cultivation within the tract are then distinguished as main kinds denoted by appropriate symbols, such as Rice Land (R), Garden Land (G), and Dry Land (*ya*, Y). Within the main kind the land is arranged in classes known usually as soil classes, but more accurately as assessment classes. In each main kind there are ordinarily three classes, *e.g.*, R₂, Y₃; often there are four classes and rarely five or even six.

In the following paragraphs we deal first with classification in its restricted sense; the distribution of the soils and their arrangement in assessment classes. We point out that the Instructions are inconsistent and have been differently applied in different settlements. We then describe the procedure of classification and show that it is largely based on local opinion. We discuss the limits within which local opinion can be used in classifying land and find that in various respects excessive reliance upon it gives unsatisfactory results. It tends to lack of uniformity in the assessment standards, and may result in assessment classes which are excessively minute within the village and excessively broad over wide areas; there is, moreover, a discrepancy between local standards of classification and assessment standards. We then examine the precautions now adopted for correcting these defects. The usual expedient is to frame standard classes, sometimes made more definite by provisional assumptions for the outturn of each class; another is to multiply tracts and main kinds; another to postpone the formation of tracts. But none of these expedients is quite satisfactory. Other defects inherent in

the present system of classification are its lack of finality, and the fact that it is unintelligible to the people and is difficult to supervise. We notice further that one difficulty with regard to classification in Burma arises from its being carried out before the demand has been determined. We then examine Indian procedure. The distinguishing feature of Indian systems is the permanent or semi-permanent classification of the soil by recording its physical constitution and position. We discuss the applicability of this system to Burma and find that, although a standardised or systematic classification presents useful features, it is not yet feasible, but that a permanent record of classification might advantageously be introduced without prejudice to the paramount importance of simplicity in the assessment map under a system of fluctuating assessments. We proceed to make suggestions for introducing into this province a permanent record of classification, and explain the method in which it should be used. We examine, but deprecate, the introduction of the soil unit system. We then touch on a technical point relating to the double classification of rice land.

Next we consider classification in its wider aspect. We show that the modern geographical tract has lost the flexibility of the earlier system, and make suggestions for restoring this feature by the grouping of kwins, and by recognition of the provisional character of tracts during the earlier stages of settlement. Reasons are then given for regarding the differentiation of rates by individual holdings as unnecessary. The procedure with regard to the distinction of main kinds of cultivation is then examined. We notice also how the adjustment of rates for different main kinds may be utilised to increase the elasticity of the assessment. Finally, we summarise certain principles of classification which seem to deserve formal recognition. An Appendix is added to illustrate the manner in which a record of classification may be prepared.

121. The Instructions now in force regarding the objects and methods of internal classification within the tract date from the earliest directions of 1880. But they are inconsistent and have received diverse interpretations. They lay down that two objects of assessment to be kept in view during classification are:—

(a) that each cultivator shall pay approximately an equal proportion of the produce of his holding;

(b) that each cultivator may enjoy approximately an equal rate of profit from his cultivation.

The method of classification "should take accounts of all matters which affect the value of land" and be in harmony with the ideas of the people.

The object of classification is "to exhibit clearly" the inequalities in the amount of produce and the value of produce, which are "the main factors in the productive value of land."

If each cultivator pay an equal proportion of his produce the assessment must be on gross produce; similarly a classification which exhibits inequalities in productive value will result in assessments on gross produce, unless the result of classification be corrected by an allowance for cost of cultivation. On the other hand, a classification

which takes account of all matters affecting the value of the land must allow for the different cost of cultivating various soils, and will suit an assessment on net produce or net profit rather than an assessment on gross produce. This instruction, strictly applied, especially if read with the instruction requiring that the classification shall harmonize with the opinion of the people, would suit an assessment on net profit, as this has been hitherto defined. Further, if each cultivator is to be left with an equal rate of profit, the assessment will absorb all the rent. Thus there has been ample scope in the Instructions for different interpretations by different officers. Some have attempted to grade the land into classes according to its fertility, that is to say, according to gross produce. Others have insisted on net produce as the standard of classification. Some have considered rental and land values as matters affecting the value of the land. In most cases, probably, the grading has been according to fertility with a reduction of class for land exceptionally expensive to cultivate, thus treating this character as a defect in the quality of the soil.

122. The procedure of classification has already been explained.

Procedure of classification. For each tract, after a preliminary examination, the settlement officer prescribes the number of classes to be recognized, usually not more than three or perhaps four. The land within the tract is distributed among these classes according to its soil, its position with regard to water, the crops habitually cultivated, the appearance of the land and crops, outturns as evidenced by crop measurement, the statement of the assessors or cultivators and other considerations bearing on the value of the land. No systematic attempt is made, however, to record the soil or any of the data for classification, but the classifier sums them up more or less consciously and assigns the land to the class which he considers most appropriate. The class which he assigns, corrected where necessary by superior officers, is the actual assessment class, R₂ or Y₃ and so on, as the case may be, and the map contains no information regarding the considerations which carried weight with him; it shows the opinion which he formed but fails to show the grounds on which he formed it. In assigning the land to classes he is guided very largely by the opinion of the assessors or cultivators. Having fixed on certain lands as typifying the prescribed standards he grades the remainder in accordance with local opinion. Thus the classification is empirical, it is not based on any theory regarding the relative value of soils, but within any kwin or village the formation of assessment classes depends very largely on local opinion. The maintenance of uniformity in the assessment standards over the tract depends on the skill with which classifiers can maintain uniform lines. On rice lands the standards prescribed by the settlement officer often lay down provisional assumptions for the outturn. Thus the standard for three classes may be 40, 30 and 20 baskets. If land clearly yields 40 or upwards it will be placed in the first class; if it yields more than 30 but less than 40 it will be placed in the second class and so on. Some officers however regard the maintenance of uniform lines as beyond the skill of the classifiers, and prefer to accept a classification according to local opinion, treating each kwin or village as a unit, and endeavour to obtain uniformity by gradually building up the tract.

123. In view of the weight allowed to local opinion it is important to examine somewhat carefully the limits within which it can be utilized. Unquestionably, the people know what land as ordinarily cultivated can yield; no settlement officer can know so much about it, and as regards the subordinate establishment it must often happen, especially where there is so wide a range of variation as in Burma, that, moving from district to district and meeting new crops and new conditions for the first time, the classifiers will lack any practical experience of soil values in relation to the crops they find; their experience is a positive handicap. Again, fertility depends largely on the conditions with regard to water, and for information in this respect classifiers must largely, and sometimes wholly, depend on information given by the people. On the level rice plains of Lower Burma classification without the assistance of the cultivators would be almost impossible. But there are limits to the dependence on local valuation. In almost every village the people wish to classify their land in three classes, although a larger or smaller number may be required. They know the land but do not understand the principles of assessment and may value highly land which for assessment purposes should be placed in a comparatively low class. And although they know the land in their own village they frequently know little or nothing about land elsewhere. In the following paragraphs we consider in some detail the defects to which a classification based on local opinion is liable.

124. In the classification of land within a tract it is important that throughout the tract the standards of classification should be uniform. Accuracy of relative classification within the village is desirable but, if the result is that land of equal fertility is placed in the first class in one village and in the second class in another village, the classification does not give an equitable assessment. In almost any village it is easy to classify the land in the three classes which, as a rule, the cultivators wish to recognize. But the soil does not remain uniform over any considerable area. In one village there may be a large stretch of alluvial soil and the people will want three classes, with their alluvial soil in the first class, their better uplands in the second class and their poor soils in the third class. In an adjacent village with no alluvial soil the lines of classification locally recognized will be quite different. It not infrequently occurs that all the land of one village may be alluvial; another village may contain no alluvial soil but little poor soil; in a third village poor soil may predominate. In each village the people will probably recognize three classes, but the poorest land in the first village may be better than the most fertile land in the second, and hardly any land in the second village may be so poor as the best land in the third village. Even if there are no such sudden variations the quality of soil and water gradually changes. Particularly is this the case with water-supply. A chain of tanks will catch the water between a range of hills and the river into which it drains, and ordinarily both soil and water will be better near the hills; within such a tract any classification which divides the land of each village into three classes according to the local valuation will result in the comparative over-assessment of the poorer villages. Within

each village the classification will be accurate and refined, possibly even too minute, but over the tract as a whole the classification will be inaccurate and the range of each class unduly broad.

Excessive refinement of the classification is most likely to be found on the poorer rice lands. Where there are pronounced differences of quality there will be three classes with a wide interval between each class; the deduced outturns may be 40, 30 and 20 baskets. But with little difference the intervals will become narrow, and a range of 5 baskets may cover all three classes. In most cases the uniformity of level is due to the absence of the higher classes and the result is that classification tends to be unnecessarily refined, and assessment consequently most expensive, in poor areas. Whether the classification is broad or refined, standards which depend on local opinion must inevitably be uncertain, but the uncertainty is most pronounced when the refinement is carried to excess. On rice land, if the margin between each class is about 10 baskets, it is improbable that much land will be assigned to the wrong class. If a difference of 5 or 10 baskets covers three or more classes, accurate classification becomes almost impossible.

On dry land however, with a variety of crops grown on widely different soils, such a classification, based on local values, must be very broad. If one soil is primarily suitable for millet and another for cotton, another for nut and another for sesamum, their relative value cannot possibly be known at the time of classification. In Lower Burma this difficulty hardly exists and in the earlier settlements of Upper Burma it attracted little notice. At that time the country had not been opened to the export market, the same staples had long been under cultivation and their relative value had fluctuated little. During the last few years however the problem has compelled attention and it finds notice in recent settlement reports. With new crops and fluctuating prices the customary valuation of land has been disturbed, and it is quite possible, and not unusual, to find the relative estimate of two soils reversed in two adjacent villages, or even in the same village after an interval of a year or two. If soils differing in constitution and texture, suitable for different crops, are graded in one series, the classification must be very broad and entail much over assessment or under assessment. Even with a single crop similar considerations arise; if the same assessment class contains land liable to fail through drought and also land liable to flooding, the assessable capacity of the class must be doubtful.

We have already noticed that some officers classify land on the basis of gross produce and others on the basis of net produce. But the people value land, neither according to its gross produce nor according to its net produce, but according to its net profit over a long period. This discrepancy between the standard by which the people value land and the standard appropriate to classification for assessment purposes can be illustrated in many ways. There are numerous factors entering into local valuation which do not require consideration or should not carry the same weight in a classification to be applied

for the assessment of cultivated or matured areas. One of the more important is lasting power, the number of years for which land can be cultivated continuously. Land which gives a small yield annually may be more valuable to the cultivator than land which yields well for two years and is then left fallow for three, but it should not be assessed more highly. Similar considerations lead cultivators to prefer poor but secure land to land which is fertile but insecure. They tend to class land near the village more highly and remote land more leniently than is necessary for the purpose of assessment. They prefer land which is scarce locally; in a black soil village inferior red soil will be valued, and in red soil villages there will be a premium on small areas of black soil. They over value land capable of producing food crops, especially if it is scarce. Thus in many respects a classification based on local opinion is unsuitable for assessment purposes.

125 We have explained that an attempt is made to co-ordinate local opinion by laying down standards for each tract. The settlement officer makes a brief preliminary examination of the tract and decides what main kinds and assessment classes are required. But he cannot easily acquire sufficient knowledge of the area before laying down his scheme of classification to be certain that it is suitable and can be readily applied to all the varieties of soils and conditions which the classifiers will meet. These however must be fitted in with it, as there are practical difficulties in modifying the scheme. Again the classifiers frequently lack the knowledge and experience which are required to apply a standard scheme; for classification within the village they depend on and can obtain the assistance of the cultivators, but the chief difficulty of classification lies in maintaining uniformity over a wide area; here local assistance fails them just where it is most necessary. If the classifiers could maintain a uniform line over a wide area they would need little assistance within a single village; and if they need assistance within the village they stand in greater need of assistance over the tract as a whole.

One device for maintaining uniformity in the classification of rice land is to lay down at the beginning of classification provisional assumptions regarding the outturns of each class. Instructions for classification according to soil or position must be indefinite, and, in proportion as any standard other than fertility is precisely defined and consistently applied, there will be a risk of inequitable results. On the other hand, the assumed outturns of previous settlements as tested by crop measurement during the current settlement do provide material for making provisional assumptions. But it has repeatedly been found that the system of making such provisional assumptions leads to an undue reliance on crop measurement. Moreover, it requires classifiers to make summary estimates regarding the fertility of land which they have never seen before. This is a most difficult task. Examination of the land and discussion with the cultivators enables an experienced classifier to compare different plots of land, and, with less certainty, to estimate the degree of difference. But an estimate of absolute fertility can only be built up gradually, and any system of classification which depends on the framing of such estimates at the

time of classification is defective. The procedure of furnishing classifiers with provisional assumptions for the outturns of each class must therefore be regarded as unsound.

Attempts have been made to meet the difficulty by the multiplication of tracts and main kinds. With small tracts it is easier to preserve a consistent line of classification and, if only a few classes are recognized, small tracts become essential. But numerous tracts complicate assessment proposals and render it impossible to justify them without an excess of detail. This difficulty also arises if the settlement officer recognizes a distinct main kind of cultivation wherever he finds it difficult to grade different kinds of land in a single series. Where this expedient has been adopted, the event has shown, what the settlement officer could not have foreseen, that corresponding classes of the different main kinds showed no appreciable difference in the value of their produce. In such cases, not only has the settlement officer done work which has proved unnecessary, but extra work is given to the land records department in applying the assessments.

Some officers have evaded the difficulty by postponing the formation of tracts and even of main kinds, and by postponement of tracing, this practice, although it conflicts with the present instructions, has sometimes been recognized as necessary. In its most extreme form each kwin is treated as a unit which is classified according to local opinion and the tract is built up on the basis of these units. Although we do not regard the procedure in this form as satisfactory, it will appear below that we look in this direction for solving the chief problem of classification, which is to reconcile the recognition of small differences between unknown quantities with a broad treatment for assessment purposes.

126. A further defect in an empirical classification based on local opinion is the lack of finality. So far as classification is a distribution of the soil according to its physical constitution and position it should be as permanent as the facts with which it deals. The relative value of different soils will vary with new markets and new crops or new methods of cultivation, but, unless there has been actual physical deterioration or improvement, the soil does not change; neither, with a sound procedure, should the classification. Permanence has always been regarded as an ideal but it has also been regarded as beyond attainment. It should be possible however for settlement officers to lay down a permanent basis on which at successive revisions additional refinements could be applied in proportion as enhancement of the demand rendered greater differentiation necessary. This principle has often been entirely disregarded and at revision settlements the new classification with uniform standards throughout the tract has recognized fewer grades than the classification of the previous settlement when each kwin was treated individually. For example, in one district the outturns assumed at a former settlement for different classes of land which was all included within the same tract at re-settlement were 50, 45, 40, 35, 30, and 25 baskets of paddy per acre, although there were no more than two classes in any one kwin. On revision these six classes were reduced to three with assumptions.

of 46, 32, and 16 baskets per acre. Thus, although there may have been greater differentiation within any particular kwin, over the tract as a whole this was not the case. This is no isolated instance. At present the lines separating assessment classes are arbitrary, and every settlement officer draws new lines just as arbitrary. This tendency seems to be increasing. Until ten years ago estimates of outturns were framed in multiples of 5 or 10 baskets. During the last ten years settlement officers have attempted estimates to the nearest basket. This practice not only tends to exaggerate the precision attaching to such estimates, but encourages unnecessary reclassification, and on both grounds it seems preferable to revert to the former custom of estimating outturns in multiples of five baskets.

The present system of summarily grading the land in assessment classes without preliminary distribution of the soil is objectionable on other grounds. No one knows exactly what is being done. The extent to which the classification is explained to the people differs from party to party and from time to time. Most officers find that in proportion as the people are associated with and interested in the work of settlement they give assistance. But the cultivator who learns that his land has been placed in R₂ or Y₃ is very little wiser, and proportionately apathetic.

The section officer, who inspects the classification, and the settlement officer, when examining the classification map, are also greatly hindered by the absence of indications as to the reasoning on which the assessment classes were assigned. Without such assistance the accuracy of the classification can only be ascertained by a re-examination of every plot. It is not sufficient merely to revisit the land. Its appearance may be misleading and the opinion of the cultivators has to be obtained anew. They may not give the inspecting officer the same information as they gave the classifier. A good classifier will usually draw attention by pencilled remarks to any unusual features and doubtful points, and to cases where his opinion differs from that of the cultivators, but in the absence of any provision for systematically recording the reasons for classification it is often difficult to tell what the classifier had in mind.

127. One great difficulty of classification in Burma however does not arise so much from its empirical character as before from the stage at which it is undertaken. At the time of classification the classifiers, and even the settlement officer, cannot foresee the result, or the effect, of what is being done. Land yielding 40 baskets of groundnut may be graded in Y₁ with land yielding 5 baskets of sesamum. The result of the operations may show that the produce of the land yielding groundnut is twice as valuable as that of the land yielding sesamum. We have touched on this difficulty above with reference to the multiplication of main kinds and the postponement of tracting. But there is another reason for deferring classification until a later stage of the operations. At present the settlement officer at the time of classing land R₁ may anticipate a rate of Rs. 4. When the assessment proposals are worked out in office, possibly two or even three years later, he may decide that Rs. 3 or Rs. 5 would be more suitable.

Probably the class will contain land which he would not have placed in the first class if he had anticipated so high a rate as Rs. 5 and will exclude land which might have been included at a rate of Rs. 3. Again, consider a plot of land, say $2\frac{1}{2}$ acres, on the border line between two classes; if it be placed in the higher class the difference in the total assessment during the period of settlement may be anything from less than Rs. 20 to upwards of Rs. 100. It must often happen, particularly with a broad classification, that most of the land in a village is on the border line, and the rates, framed subsequently in office, may involve a difference of several thousands of rupees between villages with land of almost equal value. It is quite possible also that the number of assessment classes which should be recognized will depend on the total amount of the demand. If the total demand be Rs. 1,000, three rates of Rs. 6, Rs. 4 and Rs. 2 may be appropriate. But some of the first class land will only just be able to pay Rs. 6 and some of the second class only just be able to pay Rs. 4. If the total demand be raised to Rs. 1,500, five classes paying Rs. 7, Rs. 6, Rs. 5, Rs. 4, Rs. 2 may be required. It is desirable therefore that at the time of classification the settlement officer should know approximately the assessment to be levied.

128. In India, as in Burma, the categories of tract, main kind and soil class are recognized in some form or other; the chief distinction between classification in India and Burma is that in India it is systematic, and based on theories about the value of soil and water regarded as generally applicable, in Burma it is empiric, with no basis of general theory. In Madras the whole district (or settlement area, if less than a district) constitutes one primary tract; this is usually divided into two or three assessment tracts called groups which are not necessarily continuous. There are two principal main kinds: wet land, land receiving Government irrigation, and dry land, comprising the remainder; dry land includes both embanked land (*manavari*) and unembanked land. The soil is divided into five series according as it is alluvial, black (or regar), red (or ferruginous), calcareous, or sandy. Each series is divided into three classes, clay, loam and sand; each class is again subdivided into three to five sorts according to its quality. These different sorts are grouped into seven, or eight assessment classes (*tarams*) for wet and dry land respectively. On wet land the classification of water is also systematised according to the source and duration of the supply. The first class of source consists of large perennial rivers and tanks connected with them; the second class consists of river fed sources giving a supply for not less than eight months; the third class consists of river and rainfed sources giving a supply for not less than five months; the fourth class consists of all sources giving a supply for not less than three months; and the fifth class consists of all sources giving a supply for less than three months.

In Bombay the settlement area is divided into several assessment tracts called circles, which ordinarily are not continuous. There are three main kinds; dry land, rice land and garden land. The soil is classified under three orders, black soil, red soil and light soil. In each of the two former orders there are seven classes, in the third

order there are five classes; the black order comprises classes 1 to 7, the red order classes 2 to 8 and the light order classes 6 to 10. The classification depends on depth and composition of soil, situation and other relevant factors. There are five water classes based on the duration of the supply and the position of the land. The first class is restricted to low lands fed from a source which lasts till March or April and the grading shades off into the fourth class comprising high or distant lands fed from a source which dries up in November or December. The fifth class includes still higher high or more distant land watered from such a source, and all land watered from small tanks.

In the Central Provinces the settlement area is divided into groups, corresponding to primary tracts, but there is no assessment tract as each village receives separate consideration and the rate on the same quality of land varies from village to village. There are three or more main kinds according to crop capacity; for example, wheat land, rice land, garden land and minor crop land. Within the main kind, soils are divided into classes according to composition, situation, etc. On irrigated lands the water supply is classified according to the source and duration of the supply.

Classification in the Punjab is a very different matter. There are assessment circles which resemble the assessment tracts of Upper Burma, but, as in the Central Provinces, the actual rates vary from village to village. There is also a division into main kinds, which follow the nature of the water-supply, according as the land receives its irrigation from canals, wells, floods or by lift from tanks, etc., or is dry land, which includes rainfed rice. But these main kinds are termed soil classes and within the main kind there is ordinarily no differentiation.

Thus everywhere but in the Punjab the classification is much more systematic and elaborate than in Burma. In Madras particularly, and to some extent in Bombay, the classification tended to follow standard lines throughout the province. In the Central Provinces the scheme of classification is uniform throughout the district and for each settlement, but different schemes are adopted in different districts and at successive settlements, and even in the course of operations in the same district the relative valuation of soils in the scheme may vary from tract to tract. Although in all these provinces the standard schemes of classification have in the first instance been constructed on the basis of practical experience rather than on agricultural theory, and although in their application local opinion is consulted and followed in various degrees, the classification of soil has consisted in a systematic examination of its composition, situation and defects, with a view to assigning it its proper place in the standard scheme. That is the characteristic feature of classification in India which distinguishes it from the same process in Burma. Consequent on this there is a difference in the procedure which is of great practical importance. In Burma the classifiers before assigning land to its assessment class are expected to take into account the type and texture of the soil, its situation with regard to water, the crops habitually cultivated, any material defect and the opinion of the local cultivators. More or less consciously they do this and summarise the result in the assessment class, R-2, Y-3, as the case may be, which they allot. The

symbol denoting the classification is shown on the map and until the recess season the classification is shown nowhere else. In India the actual characters determining the classification are recorded in more or less detail in the register in the field and, except in the Punjab and until the last few years in the Central Provinces, they are not shown on the map at all. They are however placed on record and, although the introduction of a more systematic classification in Burma would carry advantages, this record of the characters determining classification suggests more immediately fruitful developments of the procedure now adopted in this province.

129. A systematic classification along standard lines would remove some of the defects inherent in the present system. A standard scheme, so far as it is useful, is sound, and, while simple enough for application by the ordinary classifier, sufficiently elastic to provide for all the different kinds and qualities of soil met with in practical field work, would reduce the risk that assessment standards may vary from place to place, which is one of the chief dangers resulting from over-reliance on the opinion of cultivators who are only acquainted with their local soils. That is not the sole advantage. In Madras and Bombay, where there is a permanent or almost permanent classification, it is possible for Government to pass final orders sanctioning the new demand after the settlement officer has made an enquiry into the economic conditions of the settlement area. It only remains then for the new assessment to be introduced, and in Bombay this is done by the land records department. So long as assessment proposals are liable to be modified by reclassification this is impossible. Thus a permanently standardised classification would enable Government to control settlement operations more closely, relieve the settlement officer of much work, and greatly reduce the cost of re-settlement. Landowners would also benefit by their comparative certainty as to the assessment on their land and would be able to anticipate re-settlement with less apprehension.

It must be recognized however that any standard scheme of classification will contain an element of convention. If it is planned on simple lines with few kinds and classes it will be proportionally artificial. If it is elaborate it will be expensive, and if expensive there will be a tendency to refrain from revising it to correct mistakes or bring it up to date. An unsuccessful attempt to standardise classification is described in the report on the Myingyan Settlement. In classifying dry land the best silt soil was placed in the first class, the best black soil in the second class and the best red soil in the third class; inferior soils of the better type were balanced against superior soils of the poorer type. Thus the third class would contain inferior silts, ordinary black soils and the best red soils; the fourth class would contain still poorer silts, inferior black soils and ordinary red soils. This standard scheme was in accordance with local opinion and based on the classification of the previous settlement. But it could not be applied in practice. In different places people gave the same name to different qualities of the same soil; what they considered good red

loam in a village where red soil was scarce might be called inferior red clay in a village where good red soil was plentiful. The rigid application of the scheme would have tended to over classification in the poorer villages, and the classifiers had not the skill to counteract this tendency. The scheme was also defective in being insufficiently elaborate and permitting the summary amalgamation of red and black soils, clays, loams and sands in the same class. How far the standard schemes of classification in India are open to similar criticism it is impossible for us to say, but in all three provinces where the classification is systematic, Madras, Bombay and the Central Provinces it has been recognized that an adjustment of the standards is sometimes necessary. Both in Madras and the Central Provinces instances came to our notice of red soils being classified as black for convenience of assessment. The element of convention is emphasized when, as on wet land, the water-supply is an important feature. In Madras and the Central Provinces and to a certain extent in Bombay all the land watered from the same source will ordinarily be in the same water class. This is quite opposed to the practice in Burma, where, on a combined consideration of soil and water with reference to the relative productivity of the land, two or perhaps three classes may be recognized under a tank which only commands a few acres in years of good rainfall. An illustration may be useful. A small tank in the Central Provinces may command 50 acres of land. Owing to the inferiority of the water-supply it will probably be placed in the lowest water class. If the soil near the source be inferior and that more remote be better, the land further from the source of water will be in the higher class. Probably the classification in Bombay would be similar. In Madras a strict application of the standards would have the same effect but the classification of the soil would be adjusted to allow for the inferior water-supply of the more remote land. In Burma the classifier would not class his soil and water separately according to their place in a standard scheme, but, on a consideration of the average produce, would set off the superior water-supply of the land near the tank against its inferiority of soil, and would probably, with the support of local opinion, place the poor soil near the tank in a higher class than better soil further off. On the method adopted in this province it is quite easy to ensure that within the limits of a kwin or village the relative classification of land is accurate, but the standard may vary from place to place; where classification depends on the application of a standard scheme a higher degree of general accuracy over a large area may probably result, but the conventions on which the standard scheme is framed require adjustment to exceptional cases if relative accuracy within a limited area is to be ensured. It is quite possible, moreover, that conventions which are suitable at the time of classification may subsequently become inappropriate. For example, when the existing classification was carried out in Madras and Bombay food grains were of far greater relative importance than at present and the soil was classified accordingly; now that cotton and groundnut have become important the relative value of many soils must have largely changed. In the Central Provinces a similar change has occurred in the

relative value of soils suitable for wheat and cotton, but as the classification there has never been treated as final it was possible to make the necessary adjustment at re-settlement. All these provinces have this in common, that soil once classed as black clay is not liable at re-settlement to be classified as red sand. They differ in this, that in Bombay not only has the distribution of the soil according to its physical constitution and position been permanently defined but the grading of the soils in assessment classes has also been standardised. In Madras the relative valuation of assessment classes is not so rigid; it is still possible for a settlement officer to propose a larger enhancement for the black soils than the red and *vice versa*, and also to propose a lower enhancement, or no enhancement at all, on the poorer lands. In the Central Provinces the arrangement of the soils into assessment classes can at any time be readjusted as freely as may be necessary. It does not follow that a classification so rigidly standardised as in Bombay results in any appreciable hardship. If land is over or under assessed, either by mistake or owing to changes in the value of the crops for which it is especially adapted, the result is discounted in the price whenever it changes hands, and more injustice may result from correcting than from continuing the erroneous classification. But such a system has the disadvantage that the assessment tends gradually to become a land tax fixed on the land with small relation to the profits and to lose the character of land revenue. It appears therefore that not only would lack of skill on the part of classifiers make it difficult at present to standardise classification, but that the results might not be wholly beneficial. The advantages however are considerable and it seems desirable to take such steps in that direction as may be found practicable.

130. In India, as we have seen, the characters determining the classification are placed on record. Thus in Madras the register shows that land has been classified as good black clay receiving water from a second class irrigation source. In the Central Provinces such information is now recorded on the classification map and can be shown in even greater detail. To prepare such a record of the data for classification would seem to be a useful step in the direction of evolving a standard scheme. If classifiers are required to place on record the considerations which they are expected to take into account when classifying land, they would gradually acquire a higher standard of skill and one obstacle to a standard classification would be removed. Quite apart, however, from its utility in facilitating the introduction of systematic standards, a record of this nature would have advantages in itself. Between the various data for classification such as the nature of the soil, water, crops, etc., there is a harmony which classifiers cannot invent. If they are made to record such features on a map it would often become possible merely by examining the map to detect careless or dishonest work. We were informed in the Central Provinces that this procedure had been found in practice to facilitate inspection and supervision. A record of such particulars renders it possible, moreover, to explain to each cultivator many of the facts on which the classification of his land is based. So long as he learns only that his land is Y₂ or R₃ he regards the whole process

as a mystery. But if he is told that his land has been placed in the first class because it is a rich silt, annually watered, growing every kind of valuable crop, he has facts on which he can appeal to the section officer and settlement officer. If one man's land has been reduced a class, because weeds are troublesome or trees throw shadows on the crops, his neighbour will be quick to urge the same causes for reduction if there is any prospect of success. In Madras cultivators have been found to take full advantage of the opportunity given them by the nature of the record to protest against the facts recorded. To give such opportunities may seem to be asking for trouble. But in the last resort accurate classification depends on the co-operation of the people and the more closely they are associated with the work the more accurate will the results be found. Such a record would render the classification permanent without rigidity and this would be its primary object. The classification of the soil according to its physical constitution and position would not ordinarily need revision, the record would be as permanent as the facts which it recorded. So long as the relative value of different crops remained unaltered the arrangement of the soils in assessment classes would probably need little change. If, however, the introduction of new crops, or the appreciation of one or deterioration of another, produced a change in the relative value of the soils it would only be necessary to grade them differently. The distribution of the soils would be independent of their arrangement in assessment classes. Both in Madras and Bombay this distinction between the two processes of classification was a preliminary step towards the introduction of a standard scheme and we are of opinion that experiments in this direction should now be made in Burma. We recommend therefore that in future a record of the data for classification should be prepared.

131. The preparation of such a record would conflict however with the tradition of Burma settlement procedure that classification should be as simple as possible. It has always been the view in Burma that refinement of classification was unnecessary and undesirable; simplicity has been insisted of as a criterion of sound procedure. In Lower Burma in the early days, when rates were low and there was only one crop, simplicity was possible. Even in Upper Burma the numerous varieties and qualities of land tend to be evenly distributed; one family holds land in several scattered plots and at any division the heirs are jealous for equality. In the Punjab, where similar conditions obtain, the detailed distribution of the demand is left to the villagers themselves and it is often found that no adjustment of rates within the main kind is wanted; a flat rate on the cultivated area or even on the total area is not uncommon. Again, where the assessment is on cultivated areas classification may be less refined than where the need for fallow requires consideration, and with an assessment on matured areas refinement is even less necessary. Thus simplicity is possible. Again, if the assessment fluctuate with the area cultivated or the area matured, it is convenient to depict the classification on the annual assessment map, and this renders it more difficult to show on the annual map a classification so refined as in the Central Provinces, Bombay and Madras; so that simplicity is not only possible but

desirable. The tradition that classification should be on broad lines has therefore survived.

But the conditions making for simplicity are disappearing. Rates are continually rising and with every enhancement a more refined classification, especially on the more highly assessed soils, is required; the wide interval between rates on assessment classes in Lower Burma cannot easily be defended. Again, the equal division of land diminishes as property changes hands more freely and wealthy men build up estates, so that a rough classification becomes continuously more inequitable. These changes have been recognized and on much of the rice land in Upper Burma the adjustment of rates to small differences of outturns and the distribution of land into classes according to its productivity are at least as minute as will ordinarily be found in India except perhaps in Bombay; sometimes on the less secure rice land it is open to the criticism of being excessively minute from any practical point of view. Although in such cases the degree of refinement now observed may be excessive it must be admitted that the degree of simplification in earlier Upper Burma settlements was very artificial. The conditions are not simple and any summary classification made on the assumption that they are cannot be entirely satisfactory even as a temporary measure. In various recent settlements it has been found necessary to recognize new distinctions according to the nature of the irrigation, the kind of soil, or its capacity for producing certain crops. There have already been tentative experiments in the preparation of a record of the data for classification. The earliest attempt was made during the settlement of Meiktila and the procedure was elaborated in Myingyan. It is significant, however, that both of these are dry zone districts and that Myingyan contains a smaller proportion of rice land than any other district in the province. In both settlement parties in which the practice was started it died out on their transfer to rice-growing areas. Experiments in the preparation of a record have been made in connection with the objects of this committee and all the present settlement officers have expressed the opinion that it was not worth the time or trouble. All of them however are working in districts where rice is the chief crop and the preparation of a useful record presents greater difficulty with rice land than with dry land. Where the proportion of land under rice is so large as it is in Burma, an improvement in settlement procedure which can only be applied to dry land would be of small importance. In Lower Burma, moreover, the difficulty of preparing a record would be greater than in Upper Burma, for in Lower Burma the level of the country is always changing gradually, and sometimes rapidly. But even there a record of the conditions at the time of settlement would still be valuable at re-settlement in furnishing information as to the extent of the changes which had taken place since the record was first prepared. The experiments which have been made have shown that the preparation of a record is feasible. To a settlement officer working on the present lines with the present staff of classifiers the advantages of such a record may not seem to compensate for the labour of preparing it. With this we are unable to agree. It is a serious defect of settlement procedure in Lower Burma that classes are few and the intervals between assessment rates are wide. The introduction of a record

should help to solve one problem which now confronts a settlement officer, the difficulty of combining a minute classification with simplicity in the annual maps, and thereby ensuring that the number of assessment classes is neither greater nor less than is required for equitable distribution. A record therefore should assist the settlement officer in framing his assessment proposals, and, as we have explained, should facilitate supervision and make for accuracy by stimulating the interest of the cultivators. Although, therefore, the chief benefit will be derived at the revision of a settlement, a record should also be found of immediate practical utility, and we turn to consider the lines on which it might be prepared.

132. The chief materials for classification are physical data regarding the nature of the soil, its situation with regard to water, the crops habitually cultivated, advantages or defects such as proximity to or remoteness from the villages, alkaline deposits, weeds, etc., and, most important of all, the opinion of local cultivators. In India, as we have seen above, the basis of the classification record is the soil. Land is classified as black or red; clay, loam or sand. In the Central Provinces types of qualities of soil are distinguished by the local names, and it has been suggested that an attempt might be made to frame a standard classification for each district in Burma on the basis of local nomenclature. For dry land this would not be very difficult. The people do recognize soils according to differences of type, texture and position by names which might be standardised. Silt is *non*, black soil is *myenet*, red soil *myeni*, clay is *myesi*, loam *myetha*, sand *myebwa* or *thè*. These names are combined as *myeni myesi* for red clay, *myeni myetha* for red loam, *myeni bwa* or *thè myeni* for red sand. The admixture of different types of soil may be indicated by a combination or modification of the names, and position be indicated by a distinctive prefix or affix. The nomenclature has a natural basis. Most old soils in Burma consist of red earth or sandstone, sometimes they contain lime; these old soils are red, yellow or white. The new soils are derived from these. New soils may have been formed from soils in the immediate neighbourhood and show resemblances to adjacent old soils; or they may have been carried a long way, lost their original colour and been deposited as silt or black soil. They may be yellowish soils, due either to the admixture of sandstone with black or red soil, or of black or red soil with silt. Sometimes the soil will consist of gravel (*kyauksarit*) or a stiff clay (*kyat*). The Settlement Manual contains a list of soils, and in almost every case the names indicate the type, texture or position. Between the various types there is no rigid difference, but despite intermediate gradations there is a very real distinction between them in respect of lasting power, response to cultivation, crop capacity and reaction to different seasonal conditions and in the dry zone it has been found that a knowledgeable cultivator will ordinarily distribute the soils of his village accordingly, and that, even where he gives some soil a fancy local name, he will recognize as applicable the name which would be given it in a standard scheme. In working out such a scheme the assistance of the Agricultural Department would be valuable. Agricultural surveys have already been carried out in three districts, but

have been suspended. We consider that, when an enlargement of the staff of the department permits them to be resumed, it would be advantageous if the districts taken up were those which would shortly come under settlement, and if the Commissioner of Settlements were consulted before the work was taken in hand. It is quite possible to prepare a record of the soils indicating such distinctions of type, texture and quality and to incorporate in the same record much of the other material on which classification rests. A draft scheme showing the lines on which such a record might be prepared is given as an appendix to this chapter. It is not suggested that this will be suited for general application, or that the first will succeed but we recommend that experiments in this direction should be made.

133. It might eventually be possible to introduce among the features of this record a systematised valuation of the soil along the lines adopted in the soil unit system of the Central Provinces. This deserves detailed examination, not only because it was particularly recommended to our attention by His Honour the Lieutenant-Governor, but also because in itself it is an ingenious and very flexible system of assigning soils their relative values, and still more perhaps because in some ways the classification of rice land in Lower Burma is essentially similar. A detailed account of the system will be found in the Appendix and in Volume II; here a brief summary will suffice. The value of land in the Central Provinces is defined as depending on the average net profits obtained from its cultivation, *i.e.*, the average price obtained for the crops produced over a term of years less the cost of production. The soil unit is the unit of relative value of different classes of land. It is a measure of soil values just as a foot is a measure of length. Within the main kind as defined above different soils are assigned factors according to local opinion regarding their relative fertility. Thus good black soil may be assigned a factor of 50. If the land is exceptionally good the factor may be raised to 55. If it is in any way defective the factor may be reduced to 40. The factor of land near the village may be raised 25 per cent. and for land distant from the village reduced 25 per cent. If the land actually forms part of the village site an addition, say of 20, may be made. In like manner inferior loam may be allotted a factor of 30 which will be raised and reduced on the same principles. In the Central Provinces the soil factor is only used to express a relation and does not carry any absolute value of its own. In Lower Burma and to some extent with rice land in Upper Burma, lands are valued according to their estimated productivity under rice and the soil unit is the basket of paddy. For the classes of land found in a kwin there may be provisional assumptions of 40, 30 and 20 baskets an acre; the greater part of the land may be estimated to yield 30 baskets. If for any reason, *e.g.*, proximity to the village, the fertility may be estimated at 40, it will be allotted to the class for which 40 has been provisionally assumed as the outturn. If owing to a defective supply of water or any other unfavourable circumstances the outturn can be estimated only at 20 the land will be reduced to that class. The record of classification which we propose to

introduce provides for estimates of the fertility in the case of rice and it may in time be found to afford a basis for valuing dry lands on the soil unit system. We consider it inadvisable however to introduce unnecessary complications at the outset. The preparation of the record must for the present be regarded as experimental and it will probably be found that classifiers require time and practice before they use it intelligently. Further developments must be postponed until they have learned to do so.

134. In view of the necessity for restricting so far as possible the number of assessment classes so that land records work will be facilitated it follows that the elaborate classification of the soil recorded on the classification map must be simplified by the formation of assessment classes before preparing the assessment map. This is the practice in Madras where best red sand VIII-1, good red loam, VII-2, best red clay VI-1, best black sand V-1, ordinary black loam IV-3, and good black clay III-2, may be in the same *taram* or assessment class. The procedure in forming assessment classes will be somewhat as follows. On dry land, for example, there might be valuable red sandy loam (*Myeni-th-when*) cultivated in rotation with late sesamum, cotton and millet but distinguished by its high and secure yields of cotton, and a red silty loam cultivated with early sesamum followed by beans and perhaps growing plantains. In Madras these would probably be classed as best red sand (VIII-1), and best red loam (VII-1) respectively. On the system we propose these would be provisionally distinguished; but at some stage in the course of field work the settlement officer might decide that it was unnecessary to separate them for assessment purposes and would group them both in the same assessment class. But there might in the same tract be black soil which the people valued more highly than the red soil because of its greater lasting power and productivity under food crops. The settlement officer might be unable to decide until he had completed the tract whether the black soil should in practice be assessed more highly. He would continue the differentiation so long as necessary. If in the end he found the distinction unnecessary for assessment purposes he would, before making the maps over to the land records department, amalgamate the two in one assessment class. Similarly on rice land there might be land which on account of a deficient water-supply could only be estimated to yield 25 baskets per acre and other land which on account of flooding could not be estimated to give a higher yield. Probably in Lower Burma the people would esteem the land with a deficient supply of water more highly than the flooded land, and this would be reflected in rents and values. The defect in either case would be placed on record and the lands would be treated in separate classes until the settlement officer was satisfied that the distinction could safely be discarded. Thus assessment classes would gradually be built up and at the end of the settlement there would be left only so many main kinds and assessment classes as were required by the land records department for fiscal or statistical purposes. We have pointed out that one defect in the present settlement procedure is the practice of classification before assessment; we propose to remedy this by obtain-

ing the provisional sanction of Government to the demand before the land is classified. Thus, at the time of classification, the settlement officer will know what the demand will be and can form his assessment classes accordingly. This process of amalgamation would render possible a useful step in the direction of a standard classification. At present the classification of land as R-3 indicates that for assessment purposes it may be taken to yield the outturn assumed for that class in that tract but the assumed outturn may vary according to the tract from 15 to 40 baskets. In the Harthawaddy settlement R-3 carried a uniform significance throughout the district and meant that the outturn assumed for that land was 30 baskets. It would be convenient to extend this practice. Experience in Lower Burma shows that 7 grades of rice land would suffice for the whole area; the present assumptions regarding outturns could be grouped in 7 classes, R-1 to R-7; R-1 signifying an assumed outturn of 45 and upwards, R-2 one of 45 to 40, and so on down the scale, R-7 signifying a standard outturn of less than 20 baskets. These classes would be marked on the maps before they were made over to the land records department.

135. In Burma it has sometimes been the practice to classify embanked land in a double aspect as rice land and as dry land. Thus land yielding fairly good crops of rice six years out of ten and poor dry crops in the other four years may be classed as second class rice land, R-2, assessed at, say, Rs 2-8-0, when under rice, and as third class dry embanked land, L.Y.-3, assessed at, say, As. 12, when under dry crops. Where the assessment is fixed on a consideration of the general capacity of the land this practice is unnecessary. It is followed to a limited extent in Madras; in those districts in which the differential water-rate system has been introduced, land which only occasionally receives irrigation from a Government source is classified both in its wet and dry aspects, and when it grows a wet crop pays the difference between the wet and dry assessments as water-rate. In Madras also embanked land dependent upon rainfall is placed one class higher than unembanked land with the same soil, but the rate does not vary with the crop. Double classification is not required in Lower Burma but in Upper Burma may be useful. Although rice cultivation and dry cultivation are two recognized main kinds, it is often difficult to decide to which main kind embanked land should be allotted. Ordinarily land which is cultivated with rice whenever possible is placed in a rice land main kind. It becomes necessary therefore to provide for its assessment in the years when rice cannot be cultivated. Soil which is good for rice with ample water may be good or poor for dry crops, and it is necessary to differentiate the assessment accordingly. But the double classification complicates the work of assessment and facilitates corruption; unless necessary it is undesirable. It also adds to the difficulty of classification. The people value land as it would be valued for a fixed assessment, according to its general productivity, and if they be required to consider land in the abstract, first as rice land and then as dry land, their judgment is confused. It would seem possible, however, to restrict the practice of double classification. Some embanked land is never used for dry cultivation even when rice cannot be cultivated; such land need only be classed as rice land.

Land which is ordinarily under dry crops but may occasionally be cultivated with rice, say not more than 3 years in 10, should only be classed as dry land, leaving to the cultivator the profits of his enterprise and good fortune in years when he ventures to grow rice. Land which is ordinarily under rice, but may occasionally be cultivated with dry crops, say not more than 3 years in 10, will presumably receive lenient classification and assessment as rice land, which can be adjusted to allow for diminished profits in the years when it is cultivated with dry crops. There will remain only land which is cultivated with rice about as often as with dry crops. For this, double classification may be needed. Take, for example, two plots of land; one can only grow poor dry crops and is therefore put in the fourth class of dry land, Y-4, but can grow fairly good crops of rice and is therefore classed as second class rice land, R-2; the other plot is fairly good black soil and can be placed in the second class as dry land, Y2, but owing to inferior water facilities cannot be put in a higher class of rice land than R-3. Then if the rates for R-2 and R-3 were Rs. 2.50 and Re. 1.50 and the rates for Y2 and Y4 were Re. 1.25 and Re. 0.75 the first plot would pay Re. 0.75 in poor years and Rs. 2.50 in good years, and the other plot would pay Rs. 1.25 in poor years and Rs. 1.50 in good years. It is doubtful however whether this refinement is necessary. In the example taken, supposing that over a period of ten years each plot was under rice five times and under dry crops five times, the average assessment on the former plot would be Rs. 1.62 per acre and on the latter plot Re. 1.37 per acre; an assessment of Rs. 1.50 would be well within settlement limits of error and both might be classed as dry land and placed in an assessment class bearing this rate. Another alternative to double classification would be to assess a crop rate on the lands when under rice. On the system of classification now proposed it will be easier than hitherto to differentiate the crop rate according to soil, but whether this would be worth doing must be left to the settlement officer; ordinarily a flat rate would be preferable unless the result was clearly less equitable or showed an appreciable loss of revenue. After considering these alternatives in the light of our remarks on the principle of fluctuating assessments, the settlement officer might still wish to adopt a double classification, but we are of opinion that he should only do so with the previous sanction of the Settlement Commissioner. In any case, care should be taken to avoid the anomaly of the dry rate exceeding the wet rate.

136. We may now turn to consider classification in its wider sense, the formation of tracts and main kinds. In Chapter V we have described the gradual development of the present conception of a tract, and have explained how originally assessment tracts were formed by the superposition of price tracts upon soil tracts and how, first in Upper Burma and then in Lower Burma, the importance of attending to local circumstances in framing rates led to the introduction of continuous geographical tracts. This was undoubtedly an advance. It enabled the settlement officer, when adjusting theoretical rates in accordance with practical requirements, to utilize with much greater effect his experience in the field. During frequent tours within a given area, observing general conditions, and in particular the current incidence of the assessment on

different soils and in different villages, the settlement officer absorbs, consciously and subconsciously, a general impression of the assessable capacity of the country, so that it may be much easier to say what should be the proper rates than to give reasons for them. Geographical tracts rendered this possible. But the new procedure sacrificed much of the flexibility of the old. Under the old system if the land in two adjacent villages or *kwins* was markedly dissimilar in fertility it would fall in different tracts. Again, the former system allowed for a progressive increase or decrease of fertility. One or two *kwins* might be classified on the basis of assumed outturns of 35 and 25 baskets per acre for each class, in the next *kwin* the basis of classification might be 30, 25 if the first class was becoming poorer, or 30, 20 if both classes deteriorated, or, on the other hand, if the soil became more fertile the assumed outturns might rise to 40, 25 or 40, 30, 20 or 35, 30, 25. Under the present system, directions for classification are laid down at the outset and uniform standards with a limited number of classes are applied throughout the tract, so that areas of exceptional fertility or exceptional poverty tend to be disregarded, and differences of fertility which would have been recognized under the former system may be overlooked. Once the standards of classification within a tract have been laid down, variations from these standards cannot be conveniently distinguished except by the formation of a new tract. This accounts for the multiplication of tracts noticeable in many settlements and has led to some confusion between the terms primary tract and assessment tract. In the Settlement Instructions, as mentioned already, the latter term is not defined. Formerly an assessment tract was a subdivision of a soil tract; and the same classes of the soil tract bore different rates according to the assessment tract in which they fell. In current practice assessment tracts may be subdivisions of a primary tract in which, despite a general similarity over the whole primary tract, different standards of classification have been applied; in such cases an assessment tract is merely a small primary tract. Thus although the introduction of geographical tracts represented an improvement in settlement procedure the rigidity with which the conception was applied introduced new difficulties. It is desirable to retain the geographical tract, but to restore the flexibility which marked the former system.

137. This distinction between primary tracts and assessment tracts is confusing and serves no useful purpose. We are of opinion that, if adequate weight is to be allowed to local circumstances in proposing assessments, it is necessary to subdivide the settlement area into smaller geographically continuous areas within which the general conditions of agricultural economy are similar; these may suitably be termed tracts. A tract would thus "consist of a number of contiguous *kwins* having certain characteristics in common and distinguished from other tracts by certain conditions." This is the present definition of a primary tract; the validity of the definition however depends on the conditions which are regarded as common but distinctive. Among the conditions suggested in the present Settlement Instructions are features such as homogeneity of soil and density of population which must almost of necessity under ordinary circumstances vary

largely from place to place. The essential condition would ordinarily be similarity in the crops generally cultivated. Thus over a large stretch of country rice might be the sole or most important crop; in another area cotton might be important, in another early sesamum and nut, in another millet and gram or wheat. Attention solely to these considerations might however result in unduly large tracts, within which the villages and kwins might differ greatly, and it would be difficult to obtain and present an impression of the tract as a whole. Take, for example, a stretch of country within which cotton is the predominant crop. In scattered groups of villages broken hills with white soil may predominate; in other scattered groups there may be undulating downs of red soil; in some parts there may be wide valleys under rice with cotton on the slopes. Or again, some villages may be near markets, in others palm trees may be numerous, in others there may be great difficulty in obtaining water. Again, it may be found that, with every endeavour to maintain uniformity of classification, the level has varied; even although the level of classification has remained the same, land and rental values may be markedly above the general pitch in some villages, indicating a comparatively high assessable capacity, and in other villages be conspicuously low. Such differences within the tract can be recognized by the formation of assessment groups which need not, and ordinarily would not, be continuous, but would gather together all the villages and kwins scattered throughout the tract that could bear the same assessment rates. It may be found that this procedure gives an inconveniently large number of groups; should this happen the settlement officer can break up the tract into sub-tracts of a size convenient to handle. In Lower Burma, where over large areas there is only one crop, other considerations would have greater force in the formation of tracts, and the division of tracts into sub-tracts would seldom be necessary. The object of tracting is to frame rates, generally applicable to the whole tract, which can be justified by general considerations; the object of grouping is to adjust the tract rates to individual villages or kwins within the tract. If tracts are too large groups will tend to be artificial or too numerous. If tracts are too small the conclusion to be drawn regarding their assessable capability is liable to bias from accidental or temporary aberrations. Within each tract three groups, or even no more than two should ordinarily suffice. If the groups became inconveniently numerous, or if for any other reason the tract were inconveniently large, it should be divided into sub-tracts. The settlement officer would work out tract rates but vary the tract rate according to the group. Thus, in a tract of fifty villages, five or ten might be in the neighbourhood of markets, seven or eight might be remote and handicapped by poor facilities for water. The tract rate for third class rice land might be Rs. 3, rising in the richer group to Rs. 3-8 or even Rs. 4, and falling in the poorer group to Rs. 2-8 or even Rs. 2.

138. Another difficulty is now experienced in connection with tracting. Settlement officers are expected to form their tracts at the beginning of their operations. Where, as in the dry zone of Upper Burma, differences are immediately indicated by the nature of the crops habitually cultivated it is quite possible to lay

and by postponement of tracting if necessary.

nature of the crops

down tract limits with approximate accuracy. But in the rice plains of Lower Burma the problem is not so simple and in Myaungmya it was found necessary to build up tracts in the field kwin by kwin, so that, instead of tracting being the first operation, the assignment of the last kwin to its proper tract was the last item of field work. It does not seem possible to say that either method is the better; the choice between them must depend upon circumstances. It is convenient however for the settlement officer when starting field work to have some definite conception of the broad divisions of the country; this encourages wider views and places details in a more accurate perspective, but although the formation of assessment groups will add flexibility to tracting and should facilitate the formation of provisional tracts, it must be recognized that tracts laid down near the beginning of operations are provisional and their boundaries subject to amendment.

139. It has been suggested that the distribution according to local and individual circumstances should be carried much further than we propose. In the Central Provinces, when the settlement officer has arrived at a deduced rent for each tenant, he adjusts the proposed rent according to the rent already paid and the circumstances of the tenant. Thus a wealthy tenant whose own rent is Rs. 20 may sublet the land for Rs. 80. His deduced rent is, let us say, Rs. 16. In the Central Provinces the rent of Rs. 20 would be allowed to stand. Similarly, if a prosperous cultivator with means independent of his land, and a widow who is little better than a labourer, each holds land of equal rental capacity, the rent of the former will ordinarily be enhanced more than that of the latter. In the Central Provinces this procedure is found to work satisfactorily. But the conditions of occupancy in the Central Provinces, as is explained in our description of them in the Appendix, are exceptional. In no other provinces that we visited do individual circumstances receive attention so minute. In Lower Burma the conditions of occupancy are at the other extreme from those of the Central Provinces. If settlement operations last four years in Lower Burma half the land may have been alienated by sale or mortgage during the time covered by them, and 80 per cent. of the tenants may have changed. Under circumstances like these attention to individual circumstances becomes almost impossible and would serve no useful purpose. It should be remembered also that the provisions in Burma relating to the fallow rate and to exemption, reduction and remission of individual assessments temper the annual demand on cultivators and allow a greater degree of attention to individual circumstances than do the systems of other provinces. We are of opinion therefore that the degree of flexibility now proposed, which represents a great advance on that obtaining now, will be sufficient.

140. The introduction of a specific term to distinguish main kinds of cultivation from assessment or soil classes has freed settlement literature from an element of no little confusion; it has brought to light a difficulty which had previously existed but not been clearly recognized. But the use of the term has not yet been standardised. The instructions still refer

to main kinds of land instead of to main kinds of cultivation. In practice settlement officers recognize main kinds of cultivation with increasing freedom; but each settlement officer uses his own names and symbols to specify his main kinds. Thus rainfall rice may be placed in a main kind P (Paddy), R (Rice), G (*Kaukgyi*), M (*Mogaung*); tank-irrigated rice may be K (*Kan*), S (*Sinyetha*); rice irrigated from a Government source may be I (Irrigated), G (Government), K (*Kan*), A (*Asoya*), S (*Se*) and so on. It may as yet be impossible to prescribe that all settlement officers shall use the same terms, but there should be as much uniformity as possible, and in any case the terms and symbols should be standardised when the maps are made over to the land records department. This is contemplated in the draft Land Records Manual which lays down that only the following main kinds shall be recognized and that these shall be indicated in every district by uniform symbols:—

- R = paddy
- RG = irrigated paddy
- Y = *ya*, garden and permanent alluvial cultivation.
- YG = *ya* when irrigated.
- G = impermanent alluvial cultivation and main kinds (such as *dhant*) which are assessed at crop rates.

We approve the principle of uniformity underlying these instructions that the land records department should only recognize distinctions needed for fiscal or statistical purposes, but we regard the degree of differentiation suggested as insufficient.

(i) Statistics have to be compiled annually showing the nature and source of irrigation, and accurate compilation will present least difficulty if each kind of irrigation is distinguished as a separate main kind. The following main kinds therefore appear necessary:—

- K = *kain*, impermanent cultivation on riverine land.
- G = garden cultivation.
- Y = *ya* or dry land cultivation.
- P = rain-fed rice.
- C = canal-irrigated rice.
- T = tank-irrigated rice.
- W = rice and other crops irrigated from wells and other sources.

Government irrigation might be denoted by adding the symbol A (*Asoya*) to the irrigation symbol. It may also be found necessary to provide a main kind for permanent alluvial land (*tassè*).

(ii) A minor defect is the use of the symbol R both for the main kind and the crop. This is liable to cause confusion; the use of the symbol P (paddy) for rain-fed rice, and the symbols suggested above for irrigated rice, seem preferable.

(iii) The instructions in the draft Manual appear to suggest that the conversion of settlement main kinds into those recognized for annual assessment should be performed by the land records department. We are unable to approve this; any changes in the settlement main kinds for reproduction in the annual map should be effected in the settlement office.

141. Hitherto we have only considered the distribution of assessment among individuals in any given year. But it is also possible to adjust rates so as to mitigate the rigidity of an assessment fixed on the areas cultivated, or to increase the elasticity of an assessment based on matured areas. The theory of a fluctuating assessment is that the demand should be proportioned to ability to pay; in a precarious area almost any demand however high can be paid with ease in a good year, and any demand however lenient is oppressive in a poor year. Crops, generally, do well in a year of good rainfall; the rice harvest in particular responds to variations in the rainfall. In proportion as the assessment on rice is high and that on dry cultivation low, the revenue varies with the rainfall. Take, for example, a village which has 500 acres of dry land with an average incidence of Re. 1 per acre, and 150 acres of rice land with an average incidence of Rs. 2 per acre. In a normal year 400 acres of dry land and 100 acres of rice land will be assessed, and the revenue demand will be Rs. 600. In a good year probably not more than 450 acres of dry land will be assessable but there will be 150 acres under rice and the assessment will be Rs. 750. In a poor year only 300 acres of dry land may be assessable and none of the rice land; then the assessment will be Rs. 300. If the incidence on dry land be lower and on rice land higher the fluctuations will be greater. This tendency is exaggerated by the common practice of assessing failures severely for dry crops, because the rates are low, and leniently for rice, because the rates are high. In framing assessments therefore it seems desirable in precarious areas to fix lenient rates for dry land in comparison with those for rice land so that over a period of years the demand will be higher in good years without any loss of revenue over the whole period.

142. The above considerations may be summarised in the following:

Principles of classification. principles of classification:—

(a) (i) That the settlement area should be divided into geographically continuous areas or tracts within which the conditions of agricultural economy as indicated above are similar and distinctive, and that tracts, where inconveniently large, should be divided into sub-tracts on similar principles;

(ii) That the object of tracting is to frame rates generally applicable to the whole tract which can be justified by general considerations;

(iii) That so far as conveniently possible tracts should be formed at an early stage of the operations, but that such tracts can only be regarded as provisional and may at any stage require division into sub-tracts or changes in their boundaries;

(iv) That variations within the tract should be recognized by the grouping of khwans and villages, irrespective of contiguity, into assessment groups within which the same assessment classes should bear the same rates;

(b) That cultivation should be distinguished by main kinds for which uniform names and symbols should be observed.

(c) (i) That the distribution of soils according to their physical constitution and position should be independent of their grading in assessment classes;

(ii) That all differences in soil, water, or otherwise, which may probably be required for fiscal or statistical purposes, should be distinguished as they come to notice ;

(iii) That all the factors of classification should be placed on record so far as is conveniently possible ;

(iv) That an attempt should be made to standardize the factors and to work gradually towards uniformity and permanence ;

(v) That distinctions found not to be required for fiscal and statistical purpose or for the information of the revision settlement officer should be amalgamated as soon as they are found unnecessary, thus building up the assessment classes ; and that in the maps made over to the land records department no symbols other than those required by that department for fiscal or statistical purposes should be retained.

APPENDIX TO CHAPTER XIII.

Draft Instructions for Preparing the Record of Classification.

Note:—

- The Classification must be shown in green lines ;
- The Local Valuation must be shown in green dashes ;
- The Crop Symbols and Crop Boundaries in brown lines ;
- The Water Supply Symbols in blue and Irrigation Boundaries in blue dashes ;
- The Defect Symbols in red and the Boundaries in red dashes or dots.

Names or numbers of typical holdings, and indications of soils or yield must be entered on the map in ink.

I.—CLASSIFICATION.

The assessment classes will be indicated as usual in accordance with such instructions as the settlement officer may issue from time to time.

II.—LOCAL VALUATION.

(a) Ascertain from the *thamadis* (or cultivators) into how many classes they wish to divide the land in the village (or *kwin*).

(b) If in any Main Kind they are content with two classes these two classes will be ဝ (ဝောင်း good) ဗ (ညံ့ poor).

If they want three classes they will be ဝ ; ဝ (ဝေဝေ average), ဗ.

If they want four classes they will be ဝ (အလှူဝောင်း) ဝ ဝ, ဗ.

If they want five classes they will be ဝ, ဝ, ဝ, ဗ, ဝ (ရှင်း)

(c) Ascertain which land or holdings they consider typical of these classes. Where the holdings are known by name enter the name on the *kwin* map in ink, and in other cases indicate the holding by some appropriate symbol. On a marginal table enter a list of these typical holdings (*see* Table I).

(d) Ascertain and record on the map the local valuation of the land by assigning every holding in the *kwin*, or parts of holdings if necessary, to its appropriate class *exactly* in accordance with valuation by the *thamadis* (or cultivators). It does not matter if you think differently, you will show that by your classification; the settlement officer wants to know exactly what the people think.

(e) Divide up the *kwin* by green dashes to show the local valuation, entering the appropriate symbols.

III.—CROP RECORD.

(a) At least once in every kwin indicate on the map in brown pencil the nature of the crops habitually grown.

(b) Wherever the people or yourself (after an examination of old land records maps if convenient) consider that the crops habitually grown differ from those recorded under clause (a) indicate the change.

(c) On uplands (*ya*) indicate also the period of fallow if any. Thus land annually under early sesamum and *pebyu* (or *pegya*) will be shown $\text{S/P}\alpha$; land fallowed for a year and then cultivated with a rotation of late sesamum, cotton and white millet after early sesamum will be shown $\times \text{SC S/J}$; land fallowed for two years and then cultivated with early sesamum followed by *bisat* and then for two years under nut will be shown $\times \text{S/P NN}$.

(d) For embanked land (*le*) habitually cultivated with rice but with no other crop no symbol need be entered.

(e) Where embanked land, either through floods or drought, has often to be left uncultivated, or cultivated with some other crop than rice, indicate the number of years in ten in which according to your judgment (not the statement of *thamadis*) it yields an assessable crop (see below under Yields).

IV.—SOIL RECORD.

(a) Examine the nature of the soil and sub-soil by actual digging at least once in each kwin.

(b) Also examine the soil of every selected field, if any.

(c) Also examine the soil wherever the people or yourself consider it so different from that already examined as to affect the kind of crop grown or the yield; and also where there is marked difference in the colour or texture.

(d) Wherever the sub-soil is so near the surface as to affect the kind of crops grown or the yield note also the nature of the sub-soil.

(e) Indicate the places where you dig by an appropriate symbol in red ink, e.g., \times referring to a table in the margin (see Table II).

(f) Classify the varieties of soil found according to the opinion of the *thamadis*. (Note.—They may place 1st class soil in a 3rd class holding and *vice versa*; their classification of the soil has no necessary connection with their valuation of the holding.)

(g) Enter in the marginal table the name given to the soil by the *thamadis* and the symbol which you consider appropriate.

(h) On the map beside the symbol referring to the marginal table enter the symbol indicating your name for the soil. Thus Rc. (Red Clay) N1 (silt loam).

(i) If the sub-soil affects the kind of crop grown or the yield enter also the symbol for the sub-soil. Thus red clay on sand stone (*Kabba*) would be shown $\frac{\text{Rc.}}{\infty}$


V.—WATER RECORD.

(a) In every kwin show the direction of the flow of water by arrows.


(b) Arrows and all information regarding water supply must be shown in blue.

(c) Enter no more arrows than are necessary to show the direction of the flow and never place a single arrow on the map except where you have personally satisfied yourself by actual examination of the land that at the place where you mark the arrow the water does actually flow in the direction indicated by the arrow.

(d) Where the water flows towards a narrow opening or

channel indicate it thus,  ; where it spreads out indicate

it thus,  ; where it flows along a narrow channel place

two or more arrows side by side, thus  see Plan 1.

(e) Where the water supply is regulated by a tank or weir indicate the tank or weir in blue and the catchment area in blue dots.

(f) Indicate the limits of irrigation from each system, distributary or watercourse by blue dashes along the boundary of the land irrigated from that source. Enter a list of irrigation systems in a marginal table (see Table III) and indicate each system on the map by name or an appropriate symbol.

VI.—DEFECT RECORD.

(a) Indicate by symbols in red pencil any defects which affect the nature of the crops grown or the yield and surround the area thus affected by small red dashes (see Table IV). [Sub-soil may be treated as a defect instead of as in IV (i).]

VII.—ESTIMATE OF YIELD.

(a) On rice land indicate in Burmese figures the number of village baskets per acre at which you (not the *thamadis*, but you on your experience, on such information as you can obtain, and after discussion with the *thamadis*) estimate the yield. The estimates should be in round figures, 50, 45, 40, 35, 30, 25, 20, and less than 20 which may be shown as 15.

(b) Wherever you consider that there is a difference of 5 baskets note down another estimate.

(c) Divide off the estimates by light lines in black pencil.

(d) Where the land cannot annually be cultivated with rice [see III(e)] indicate in English figures the number of years in ten that rice can be grown.

Thus, land estimated to yield 25 baskets in a year of normally good rainfall but only assessable under rice three times in ten years would be shown thus $2\frac{3}{4}$.

(e) No estimate need be made of fertility for crops other than rice.

VIII.—MISCELLANEOUS.

(a) The margin of the map should also contain a table showing the name and residence of each *thamadi*, and a table showing the history of each selected field throughout the settlement in the form of Table V:—

Table I.—Typical Holdings.

သမာဓိအဘဏ်းစားသည့်အထိုင်းဥပမာစာရင်း။

တ=ထောင်း။		ထ=ထပ်။		ည=ညှိ။	
အကွက် နံပါတ်။	ထောခေါ်အမည်။	အကွက် နံပါတ်။	ထောခေါ်အမည်။	အကွက် နံပါတ်။	ထောခေါ် အမည်။
182	ထံထားထင်း။	72	ဝင်းထမ်း။	542	နတ်ဝင်း။
379	ရေတွင်းယာ။	572	ကိုဝယ်။	38	ရှားထော
443	တုမ္ပကြီး။			322	ကျောက်စာ ထော။
438	ရွာယောင်းတုန်း။				

Table II.—List of Soils.

မြေမျိုးစာရင်း။

သမာဓိစာရင်းအရ။

တ=ထောင်း။			ထ=ထပ်။			ည=ညှိ။		
အကွက် နံပါတ်။	အရေပြား ထပ်ထော။	အရပ်ခေါ်အ မည်။	အကွက် နံပါတ်။	အရေပြား ထပ်ထော။	အရပ်ခေါ်အ မည်။	အကွက် နံပါတ်။	အရေပြား ထပ်ထော။	အရပ်ခေါ်အ မည်။
28	Ni	နန်းဘွာထ ထပ်။	532	Rs	ထဲမြေနီ။	571	Rs	ထုတ်ထော
73	Bc	မြေနက်မြေ စေ။	482	Ri	မြေနီမြေထော။	460	Rc	မြေနီချောက်
542	Ri	မြေနီထပ်ရှင်။	590	Ri	အင်ထိုင်း။	500	Rc	မြေနီထိပ်ပေါက်။
472	Wl	နန်းမြေဖြူ။	52	Bc	စာနတ်ဖွတ် ချေ။			

Table III.—List of Irrigation works.

ဆယ်ကန်စာရင်း။

အကွက်နံပါတ်။	ထယ်၊ သို့မဟုတ် ထန် အမည်။	အကြောင်းအရာ။
၁၇	ကြာကန်။	

Table IV.—List of Defects.

အကျိုးပျက်စာရင်း။

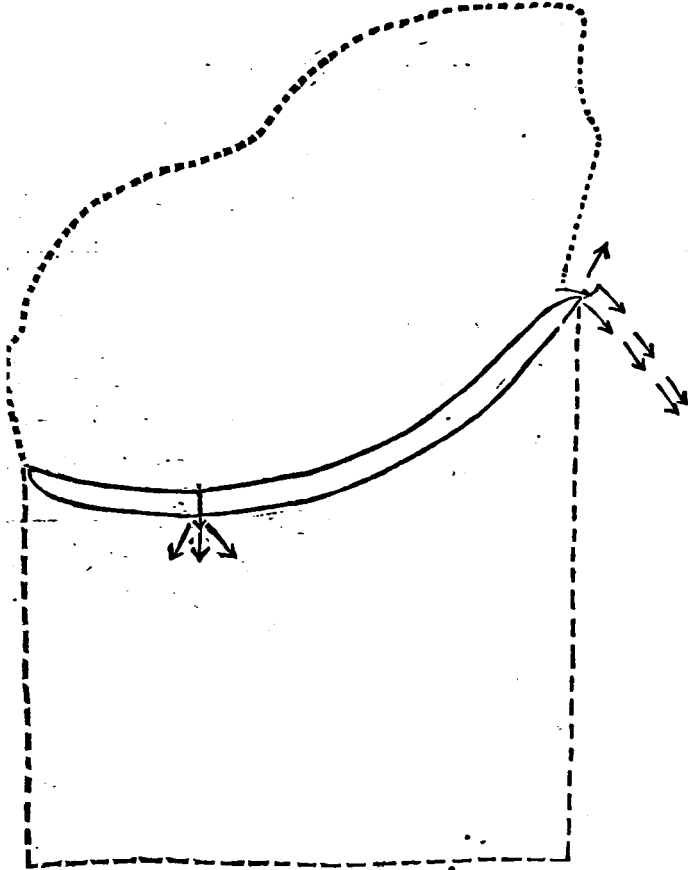
ထက္ကဏာ။	အဓိပ္ပာယ်။	အကွက်နံပါတ်။
၄ +	ရေများ၍ ပျက်ထက်ထည်။	၂၂, ၄၈၃
၄ -	ရေမရှိ၍ ပျက်ထက်ထည်။	၅၉, ၈၄, ၃၂၂
၀	ရွာနှင့်ဝေး၍ ညံ့သည်။	၄၈၃
ထ	ဆင်ပျာပေါက်၍ ညံ့သည်။ ထားပေါက်၍ ညံ့သည်။	၅၀၀
ထ	လှိုင်းသမန်ကပ်၍ ပေါက်သည်။	၄၈၃

Table V.—List of fields selected for crop measurement.

Plot No	Year 1279		Year 1280		Year 1281	
	Kaukyin.	Kaungyi.	Kaukyin.	Kaungyi.	Kaukyin.	Kaungyi.
၃၈	S 2'03	R 37	...	R 15	S 5'25	R
၃၄	...	N 32	...	+	S 1'07	53
၄၈	...	...	...	S 2'15	S 1'10	Jk 2'10 300

Plan I.

Water flowing into a tank bed and then spreading over rice land would be shown thus:—



Catchment area

Area commanded — — — — —

EXPLANATIONS.

This record should be made on a blank map of the kwin or else on an outline tracing of the kwin or tracing cloth. It is now the practice in some parties to use blank kwin maps for classification and such a map is preferable to tracing cloth because the tracing does not always register correctly when applied subsequently to kwin maps.

I. Classification.—Mistakes in the record will often be apparent without even going to the land because there is a symmetry between local valuation, crops, nature of soils, nature of irrigation and defects which make it difficult for an uneducated man to guess accurately all or any of them.

II. Local Valuation.—No explanation is required in connection with this paragraph except that in most cases the villagers will probably be found to want three classes.

III. Record of Crops.—The record of crops will probably be found to present the greatest difficulties. While it ought to be easy to determine with the *kwin* map for the past year or two and information by the *thamadis* or cultivators what crops are habitually grown, this may not be quite simple at first for an uneducated man or one who does not understand anything about the significance of crops. For example, during the recent high prices of *pebyugale*, this crop was attempted on several soils unsuitable for it, but discontinued after a year's experience. In such cases the mere fact that land has been under a crop once or twice does not indicate that the land is habitually cultivated with it. It will probably be found necessary for the settlement officer, prior to soil classification, in the course of his preliminary enquiries for the tract to lay down standard combinations as likely to be characteristic of different soils. With a little experience however it should be found that the soil classifiers require little assistance in determining the crop habitually grown. To ascertain the crops habitually grown and also to get an idea of the frequency of rice cultivation under [III (e)] one or two old *kwin* maps will be found useful, not to be followed implicitly but for assistance in obtaining information from the people.

IV, V and VI.—There should be no difficulties with regard to paragraphs IV, V and VI but it will be necessary to insist that classifiers should put no symbol on the map unless they have actually visited the spot to which the symbol relates.

VII. Estimate of the Yield.—These instructions are perhaps the most open to discussion. It is difficult to estimate yields in any area until after working there for a month or so, considering numerous crop measurements and absorbing consciously and subconsciously, a very considerable amount of information over the whole neighbourhood. It may probably be found desirable for the classifiers to distinguish merely the relative values, differences of 5 baskets under VII-b without making any estimate under VII-a, leaving the estimate under VII-a to be made by the settlement officer at his leisure.

VIII. Miscellaneous.—The important thing to notice in Table V is that selected fields are not arranged by crops but that the table forms a record of cultivation in the selected field throughout the course of operations. Even if a field be not actually reaped the crop grown should be noted and the column for yield left blank.

CHAPTER XIV.

MISCELLANEOUS ITEMS OF THE DEMAND.

143. Hitherto we have been examining the procedure relating to the assessment of the land when cultivated with field crops. This forms the main item of the demand, but the settlement officer is also required to frame assessment proposals regarding certain miscellaneous items such as gardens, trees, and special crops not ordinarily cultivated. As the procedure relating to these items is essentially the same as for field crops, except that crop measurements are not often conducted, it is unnecessary to examine it in detail. There is however one aspect of the assessment proposals under these miscellaneous heads which deserves attention. At present the proposals regarding gardens, trees, and special crops are treated quite separately from one another and from the general assessment proposals. Similarly the proposals for the tax on households, the thathameda-tax, are treated separately. This separate treatment of each head of revenue obscures the total effect of the demand on any village or individual. If the same man owns rice land, garden land and palm trees and is also liable to pay thathameda, the proposals for assessing him are dealt with in four separate parts of the settlement report. It is not the practice to consider the total effect of the combined demand either by individuals or villages, and, although the total effect by tracts is calculated, the assessment proposals under the several heads are not ordinarily considered as a whole, of which the parts act and react on one another. The revenue from these various sources is often of co-ordinate importance and all items require consideration before a change is made in any; for example, if a high revenue is taken from palm trees it may be advisable to moderate the demand on field crops. Hitherto settlement procedure has not allowed for the individual consideration of the total demand under all heads by kwins and villages, but under the procedure which we recommend in the next chapter this will become possible.

144. It is now the practice in certain cases to fix rates on the crop instead of on the land. Crop rates often form a tax on industry and enterprise, and we are altogether opposed to them, except where, as on some alluvial land, the nature of the soil is liable to frequent change and classification is impossible; such land must, as now, be classified as *kain* (alluvial). We recognize however that financial considerations need attention. The crops which at present are often assessed at crop rates are shown in the following list together with the acreage under each in 1918-19:—

Spring rice (<i>mayin</i>)	...	95,000
Onions	...	18,195
Sugar-cane	...	20,379
Tobacco	...	106,995
Betel-vine	...	5,583
Plantains	...	112,309
<i>Dhani</i> (<i>Nipa fruticans</i>)	...	63,946

Of the area under these crops part is assessed at a soil class rate, including probably most of the spring rice, plantains, *dhani* and

much of the tobacco; part is alluvial, including some of the spring rice and much of the tobacco. After deducting the area which is now assessed at soil class rates and that which, as alluvial land, must continue to be assessed at crop rates, it seems very doubtful whether the area that remains is sufficient to justify assessments at crop rates on financial grounds, and we recommend that crop rates should be abolished except where, as on alluvial or submerged land, the surface is impermanent. Whether the abolition should take effect at once or be postponed until the next resettlement must depend upon the circumstances of the individual district.

The assessment of double cropped lands constitutes a special case of crop rates. The circumstances vary greatly and the present practice in assessment varies accordingly. We are of opinion that so far as possible a single assessment should be imposed on land according to its capacity for production as evidenced by current practice. Where land may be cultivated with two crops of very different value, as, for example, rice land which can grow sessamum; the less valuable, sessamum, may properly be assessed at a reduced rate if the more valuable, rice, should fail. On dry land, if two crops may be grown and one of them is of little importance, the settlement officer when framing the assessment should only take into consideration the more important, defining this as the main crop; no reduction of assessment will then be needed for failure of the minor crop. If however two crops are taken into consideration in fixing rates a reduction should be granted if one crop fails. The range of possible combinations is so large that it seems unnecessary to go beyond these general recommendations, which will need adaptation to particular circumstances. Mr. Noyce dissents from this recommendation except in regard to rice lands. He holds that land other than rice land should be assessed on the assumption that it grows one crop only and that if any crop is successfully raised on such land, the full settlement rate should be imposed. The introduction of a distinction between major and minor crops seems to him an unnecessary complication. Any reduction in the settlement rates due to working on the assumption that the land only yields one crop would probably be balanced by a decrease in the remission granted.

Another variety of crop rate is the rate per tree on palms and other trees. Solitary fruit trees other than toddy trees. Solitary fruit trees other than toddy palms tapped for juice are now ordinarily exempted, and we recommend that where the tax on such trees still exists it should be abolished. In Upper Burma the present procedure of assessing the tax on palmyra or toddy palms in a lump sum on the village appears to work smoothly and on the whole to give satisfaction. This system appears to be legally inadmissible in Lower Burma and it is doubtful how far it would prove suitable; we have no reason to recommend any change in the system now in force there by which a tax is imposed on each tree and collected individually.

The assessment of palm trees. 145. Certain features in the settlement of the revenue on palmyra trees also deserve notice. Every tree has to be counted and classified as mature or non-mature, male or female, tapped or untapped. The number of trees tapped varies from year to year according to the season,

and in some degree according to the other opportunities for employment. In Pakökkü District the number of trees counted was over one and a half millions. The accurate counting of so many trees is a matter of much difficulty and where the number tapped varies from year to year the possibility of serious errors in the calculation of the demand must be recognized. Villages which are thus prejudiced may demand a recount, but this is not in itself a sufficient precaution. It has ordinarily been the practice to exempt from assessment villages where the number of assessable trees does not exceed 50. This limit is too low. The incidence would be more equitable, the distribution facilitated and the likelihood of error reduced if the limit for exemption were raised from 50 to 500.

The settlement establishment is expected to record the owner, mortgagee, and tenant of each tree. Frequently, the trees belong to people other than the owner of the land on which they stand; property in trees may remain undivided for several generations and they are freely mortgaged; the trees owned by one family, and even the trees climbed by the same man, may be widely scattered. It is quite impossible therefore to comply with the instructions for recording ownership and mortgage and, unless it is considered advisable to prepare a record of rights for palm trees, which would probably involve more detailed enquiry and elaborate maps, the attempt to record these particulars might suitably be abandoned. Enquiries into rents however present less difficulty and may be useful.

The determination of the net produce of palm trees is even less practical than for field crops. The palm sugar is obtained day by day over a period of several months, some of it is eaten by the cultivator and his family, much of it is exchanged in small quantities to meet petty expenses, and any figures for the gross produce must be largely guess work. On the other hand, much if not most of the expenditure incurred is in the nature of capital and the figures for cost of production have even less meaning than for field crops. For palm trees therefore calculations of the net produce are exceptionally fictitious and the assessment can only be based on general considerations defined and verified by rents.

146. Under the Burmese régime the thathameda-tax was a tax on property. Villages were ordinarily assessed at the rate of ten rupees a household and this was distributed according to the opinion of local assessors (*thamadis*) selected by the village as to what each household should pay. The poorer villages sometimes paid less than Rs. 10 a household and the term household was often leniently construed as comprising a large family with married sons and daughters who had not yet set up separate establishments. The main objection to it was that the poorer classes were assessed too highly. The rate could not be enhanced in a village containing wealthy landowners because they passed on an undue proportion of the tax to the poorer classes. The original intention was that the thathameda-tax should be known as the capitation tax without any change in the customary rate and method of assessment; the Government of India in their earliest communication on the subject of revenue in Upper Burma

S.M. II, 35.

1. At one time some Karens distributed Capitation Tax similarly selected correspondence of Commissioner, Tenasserim, page 186.

even contemplated the abolition of thathameda and the substitution of a tax on the lines of the capitation-tax of Lower Burma. Since then, this course has frequently been advocated. But the problem of assessing wealthy non-agriculturists presents difficulties and the thathameda tax has been retained. One great objection to it has been diminished by the introduction of land revenue. It has become possible to enhance revenue without at the same time enhancing the rates on the poorer classes, as the assessment of all land to land revenue has in theory converted the thathameda tax into a tax on income from all sources other than the ownership or occupation of land, and agricultural and non-agricultural income can now be assessed separately. But this changes the nature of the tax; it becomes, in theory, no longer a tax on property, but a tax on income. Whether a man has property or not is usually self-evident; his income can only be ascertained by enquiry. In practice thathameda often remains a tax on property; the lowest rate is the highest which the poorest man can pay and in the assessment of the wealthier people the assessors take into consideration the fact that they pay land revenue. In many cases however it is assessed at a flat rate, and all classes down to the agricultural labourer pay the same rate per household. Thus it is difficult to defend the thathameda tax on the modern canon of taxation that the poor should be taxed leniently or exempted from direct taxation. The same objection applies to the capitation tax of Lower Burma. It operates without discrimination; the man with an income of nine hundred rupees pays no more than the labourer with ninety. Similarly, the incidence as between different localities is unequal; in parts of Kyaukpyu where a ploughman is paid a daily wage of five annas it takes sixteen days' work to pay the tax, whereas in Hanthawaddy five days are sufficient. Again the collection of capitation tax in August at a time when beyond all others the cultivator is in need of working expenses, affects agriculture prejudicially. Not only are forty to fifty lakhs taken from the cultivator himself, but the payment of twenty to thirty lakhs which non-agriculturists have to meet raises the rate of interests on loan against the cultivator. Where the cultivator has small resources, collection in August leads to a reduction in the outturn of land as it lessens his available cash for the payment of labour at a time when it is specially required for transplanting and the prevention or repair of damage by floods. These taxes, which are peculiar to this province, can only be justified on the ground that the people are accustomed to them and that they bring in a useful amount of revenue which cannot conveniently be foregone. We have considered a suggestion that they might be assessed at rates on buildings. In some settlements the distribution of buildings has been examined as an indication of prosperity, and the classification of buildings formed a regular feature of the earliest censuses. We understand that the question of transferring the proceeds of these taxes to local bodies is under consideration. In 1874 the land rate in lieu of capitation tax was made over to certain municipal towns and the capitation tax collected in Henzada was made over for the benefit of that place. We regard with approval the proposal to convert these taxes into local rates and are of opinion that the opportunity of doing this might be taken to assess them as house taxes according to the quality of the

building and the covered area, with possibly an exemption for dwellings of the poorer classes.

147. In the enquiry with a view to the adjustment of thathameda the rate for each village in which an enquiry is held is worked out by ascertaining separately the agricultural income of the village, *i.e.* the income derived from owning or occupying land, and the non-agricultural income. The proportion of the non-agricultural income to the total income is then taken as representing approximately the fraction of ten rupees which should be the thathameda rate. The Settlement Instructions also contain another, and inconsistent, method for arriving at the rate, by calculating the proportion of thathameda as actually assessed which is debitable to non-agricultural income. The latter method can only be applied in original settlements, the former method is equally applicable to original and revision settlements. The Instructions prescribe that 80 per cent. of the heads of households in agricultural villages should be required to supply a budget of their annual income, state their expenditure and explain any discrepancy. People have no inducement to state the facts correctly even if they could remember them, which in itself is quite impossible. The thathameda rate deduced by the method first described above should bear to Rs. 10 the same proportion that the non-agricultural income bears to the total income. A high deduced rate may therefore represent non-agricultural wealth or agricultural poverty, and the same rate would be applicable to a village of produce brokers and money lenders as to a village of field labourers. Again, the proportion of non-agricultural income varies largely from year to year according to the fortunes of the harvest. Thus the assumptions on which the enquiry rests are false, the instructions are inconsistent, the information required cannot be obtained with even approximate accuracy and the results are useless. Until some expedient, such as that suggested above for basing assessments on dwelling houses can be devised, it is only possible to frame thathameda rates on general considerations, having regard to the current incidence, the incidence in the adjacent districts and the incidence of capitation tax in Lower Burma.

148. The assessment of land irrigated from a Government source is one of the most difficult problems of settlement. Water rates. It is necessary to find out not only the total amount at which the land may properly be assessed, but also to determine what the assessment would have been if the land had been left unirrigated; having discovered this the settlement officer has further to apportion the increase between the two heads of irrigation and land revenue. The present instructions are difficult to understand and to apply; they encourage, and in fact have led to, undesirably high rates on irrigated land.

Irrigation works are of two kinds, productive or protective. The former return something more than the cost of construction and maintenance. In the latter profit is not considered; questions of cost are subordinated to the necessity of mitigating the consequences of famine. Such works are exceptional, at least in Burma, and it is therefore the assessment of land under productive works that we discuss, though we recognize that the line of distinction is not stable,

since productive works may fail to give the expected return, or even a return sufficient to cover expenditure on construction and maintenance. The charge for water has sometimes been fixed by the irrigation department with regard to the value of the water and the cost of the work. It has sometimes been determined by the settlement officer as a fraction of the increased outturn, the fraction being determined by similar considerations. An alternative method is to allow the settlement officer to determine the aggregate demand on the ordinary principles of settlement as applied in unirrigated tracts. It would be permissible however to take a higher proportion of the net produce than he does in unirrigated parts of the settlement area, considering that the security of cultivation and other advantages arising from a Government system of irrigation make a higher assessment equitable; in areas where the irrigation is so secure, elaborated and well controlled as to justify him the settlement officer may take even the full half net produce.

In our opinion the second is the better method. If the water rate is determined empirically, the cultivator is left unprotected against charges for water which may be so high as to impair his standard of living. Thus if the actual cost of constructing or maintaining a canal or tank should largely exceed the estimate of cost on which the work was undertaken as a productive enterprise, the increase necessary in the estimated charge for water, if the work is to remain productive, may be so great as to make the condition of the cultivator after irrigation inferior to what it was before, even although the fraction of the rental produce taken by the settlement officer as land revenue may appear moderate. In this connection the reduction which had to be made in 1917 in the water rate on first class land in the Shwebo District is not without significance. A settlement usually follows close on the introduction of irrigation and even during the currency of a settlement the remodelling of a canal necessitates a reclassification of land and a readjustment of rates. The introduction of irrigation, accompanied as it sometimes is, by a dangerous and widespread epidemic of fever, modifies very largely the agricultural economy of the countryside, as for example, by the destruction of cattle breeding as a local industry. So serious are the changes which it involves, that irrigation, in the beginning at least, is anything but an unmixed blessing to those already settled on the land. In these circumstances a method of assessment which fixes an empirical charge for water rate and finds out by trial and error whether the charge can be paid or not may entail an unnecessary aggravation of the temporary hardships of the cultivator. On the method which we advocate it would be clear, what the other method obscures, exactly what proportion of the cultivator's outturn Government purports to take; should this approach or reach half the rental produce, it would clearly indicate the need for mitigating the initial hardships by a more gradual enhancement of the demand than has often been the practice when water rate has been fixed empirically.

149. On the method advocated in this report the settlement officer

The elements of fixes the total amount of the assessment; it still demand on irrigated remains to distribute this amount between the land.

account heads of land revenue and irrigation. Two elements at least must be recognized. It is generally admitted

that a sum equal to the amount collected prior to irrigation should be credited to land revenue, and, further, that the head of land revenue should also be credited with the amount which would have been obtained without irrigation as cultivation gradually expanded with the increase of population. There are difficulties in calculating this amount, and, when secure irrigation renders the cultivation of dry crops unlikely, it is not worth while to classify the soil in its dry aspect and make detailed calculations; a rough estimate is sufficient. The total amount as thus estimated by the settlement officer can be applied as a flat rate and the credit to land revenue on this account will be given by multiplying the acreage under cultivation by this flat rate. This credit would grow year by year as the cultivated area increased.

The land revenue as thus defined and calculated is however only a small portion of the aggregate assessment; the main difficulty lies in determining to what extent the enhancement consequent on irrigation should be assigned to the irrigation department. There are two opinions, each widely held; some would credit the department with what they estimate a reasonable remuneration on commercial lines, others would credit the department with the whole enhancement. The officers with settlement experience who have dealt with this matter in replying to the questionnaire are equally divided between these opinions and the committee has also been unable to arrive at an unanimous finding on the subject. In these circumstances it seems well to state the arguments on either side.

150. Those who would assign the department only a commercial credit recognize three elements of the demand, corresponding to what have been termed the Dry rate, the Water rate and the Wet rate. The Dry rate is the rate on land in its unirrigated aspect, which by general agreement should be levied as a flat rate and credited to land revenue. The Water rate is a direct payment to the Irrigation Department for the use of water, corresponding to the payment known in the Punjab on the occupier's rate; this should represent the commercial value of the water. The Wet rate, which corresponds to the payment known in the Punjab as the owner's rate, represents the land revenue due on the enhanced produce resulting from the supply of water. These terms are in themselves ambiguous and have in fact been used at different times with different meanings, so that the uncertainty attaching to them has confused issues which in themselves contain sufficient difficulty. It appears convenient therefore to obviate confusion by adopting the terms Land share, Water share and Soil share. The Land share is the share of revenue due to the land alone, quite apart from irrigation and corresponds to the Dry rate. The Water share is the share of the revenue which represents the commercial value of the water and corresponds to the Water rate. The Soil share, as explained more fully below, represents the superiority of certain soils and corresponds to the Wet rate. Hitherto, on major works in Burma, as in some Indian provinces, it has been found desirable to distinguish between the share collected as water rate which is credited directly to the Irrigation Department, and the share collected as land revenue which is credited, at least in the first

instance, to general revenues. It seems unlikely that this distinction would be so general if it were merely artificial and served no useful purpose. There is, in fact, a real difference in the nature of the two payments, and there is a practical advantage in distinguishing between them. Suppose that each of two plots of land, one irrigated from a Government source, and the other unirrigated, yields 50 baskets of paddy. In the one case Government has contributed nothing to the yield, in the other case public money has been spent; the state has thus become a partner in the work and would seem entitled to a larger share than the land revenue alone. The payments to Government by occupants of irrigated land clearly contain two elements; a payment on account of land revenue and a payment for the service rendered. Confusion of these elements in practice encourages a confusion of principle which, in the long run, is prejudicial to the interests both of the community and of the individual cultivator.

If both lands are assessed at the same rate, the cultivator of the irrigated land is being subsidised out of the public revenues; although there may be sufficient justification for this as a temporary measure, or even permanently, the procedure requires justification and at first glance does not seem equitable.

At any time it may be desirable to assess the two charges on different principles; even at the same time on different irrigation systems it may be convenient to assess them differently. On one system restriction of the area irrigated may be needed, in order to provide a more efficient supply; on another system it may be desirable to extend irrigation. Unless the element of water rate be distinguished from the element of land revenue it becomes difficult to vary the charge appropriately on different systems.

Again, land revenue is periodically revised and settled for a period of years. At any time during the interim, if maintenance charges rise or fall, Government may wish to vary the charge for supplying water, which is impossible if it forms part of the land revenue. On the other hand, when a settlement expires, land revenue will be revised; but, if there has been no alteration in the charge for maintenance of the irrigation system, cultivators may legitimately object to paying more for water.

In Lower Burma, as in many Indian Provinces, there is a cess on land revenue which is appropriated to local purposes; if the whole of any enhancement taken by Government as the result of an improvement be termed water rate and credited to the irrigation department, the imposition of a cess becomes illegal. Even were it legal, landowners might reasonably object to supplementing by a cess for local funds a payment which nominally represents, and does in fact include, a charge for services. But the areas where large improvements are made, and population in consequence increases, are precisely the areas where ample local funds are necessary. Moreover no long view of land revenue can neglect the prospect that in future it may become more elastic than it has been hitherto. It is at lowest not impossible that with increasing popular control the rate of land revenue will be adjusted more closely to financial needs, rising and falling like the income-tax. Service payments cannot suitably be varied on these lines, and failure to distinguish them

may prejudice the introduction of a reform with far reaching financial and political possibilities.

Some of these considerations may appear remote, but the immediately practical task of the settlement officer in framing rates is complicated if land revenue is confused with service payments. The officers of the irrigation department naturally and properly take pride in the efficiency of irrigation and wish to justify their work by large returns. It is admitted that cultivators who benefit by Government irrigation should, apart from special considerations, pay a larger proportion of their produce than those who obtain an equal amount without irrigation. But the principles of assessment only indicate broad limits within which the rate should fall; the actual adjustment of the rate depends largely on the judgment of the settlement officer. The maximum limit of assessment is half the rental produce; ordinarily the settlement officer will take less, although on land irrigated by Government he will approach the standard more nearly than on other land. If the irrigation department, however, be credited with the whole enhancement which accrues from the improvement, the organized influence of the department will tend to urge the pushing up of rates. When the irrigation department, as representing the community at large, enquires why the charge for irrigation should be no higher, and the cultivator within an irrigated area enquires why he should pay so much, the position of the settlement officer will be strengthened if some principle is enunciated and some criterion laid down by which he can test their claims; with no such guide it may well happen that he may allow too much weight to the views of the irrigation department, and be led to fix rates higher than in his unbiassed judgment the circumstances of the cultivators warrant.

From another aspect also the policy of giving unnecessarily large credits to the irrigation department is open to objection. Easy profits encourage extravagance, and if the department, as a branch of Government, receive under cover of the water rate a grant from land revenue in addition to the commercial charge for water, there is some danger that economy may be little heeded. Superfluous inspection bungalows, expensive construction, extravagant establishments will be passed with insufficient scrutiny because the work can pay for them, and thus the standard of efficiency will tend to fall.

On the other hand, that the irrigation department should be credited with the total enhancement due to irrigation, seems to us to place Government too nearly in the position of a private landlord, a proprietor developing his farm. As has been pointed out the theory that Government is the owner of the land in Burma has never been accepted, and any measure therefore which supports or rests on such a theory is in so far objectionable. Even however if it were permissible to regard the whole province as one large farm, the owner would still find it advisable to keep accounts, and if his tenants could claim that rents were limited by custom, as in Burma the occupants of land can allege customary limits to the land revenue, it would not be difficult to convince him that it was expedient to separate the charge for water from the rent. He would impose a charge for water on a commercial basis. In any business, private or public, good accountancy is essential to good administration, and it appears as important to

distinguish between land revenue and payments for services rendered in the supply of water, as to separate land revenue from local cesses, and as to distribute administrative charges between the heads of revenue and law and justice. Those who would allow only a commercial credit are of opinion, therefore, that to credit the whole proceeds of irrigation to the irrigation department, however inviting as a short-cut to the solution of the problem, not only fails to solve it but multiplies the difficulties.

151. Those who uphold the opposite opinion however consider that the controversy is in some degree academic; the Local Government now receives the whole revenue for its own uses and that it should call a part of it irrigation-revenue and the rest land revenue they deem immaterial, holding that the question is to be settled on considerations of accounting convenience and financial control which are outside the scope of the conventionaire and this report. They recall the fact that the distinction in Burma at least, was in its origin financial; until the recent revision of the provincial settlement with the Government of India, water rate was credited exclusively to provincial revenues, whereas a share of the land revenue was an imperial contribution and settlement officers were therefore expected to pitch the water rate high at the expense of the land revenue. Now that the Local Government controls the whole it is a matter of indifference in what part of its budget the figures appear; at the worst irrigation engineers may have a sentimental grievance if they do not get the credit to which they consider their work entitles them. We have seen that those who would allow only a commercial credit maintain that the enhancement which follows irrigation can be attributed, in part to the water supplied and in part to qualities of the soil independent of water. They hold that the assessment which the cultivator of irrigated land pays to Government comprises two corresponding elements distinct in their nature and that it is important to distinguish the payment for water from the land revenue which may properly be assessed on the increased outturn from the soil. They point out that the distinction is found in India as well as in Burma. They deprecate the assignment of the whole enhancement to the Irrigation Department, thinking that so large a credit is likely to encourage extravagance both in construction and maintenance. They are of opinion also that such a credit will result in the department using its organized influence to push revenue as well as water rate to an unduly high pitch. They consider that if water rate and land revenue are not separated the cultivator will consider himself unfairly treated on the expiry of a settlement when his assessment is raised, although the cost of constructing the canal or tank has been paid off and the charges for maintenance have not risen. They note that under the existing law cess cannot be levied on water rate and that the cultivator in irrigated areas will be unfairly if not illegally taxed if the cess is collected on the aggregate assessment without allowance for water rate. The advocates of the full credit consider these arguments fallacious.

The argument for the commercial credit rests almost entirely on the conception of the irrigation department as a commercial firm.

making a charge for supplying water. Carried to its logical conclusions this conception would lead to treating water rate as part of the cost of production which is inherent in the method of determining water rate empirically, that as explained above, appears open to objection. If the view that the irrigation department and the cultivator are in partnership and not higgling buyers and sellers, which seems the logical outcome of granting the full credit, is a valid view, then the cultivator would have no good grounds for resisting the raising of his assessment at resettlement although the cost of construction had been recouped and maintenance charges had fallen. On any method of taxation the influence of the irrigation department will naturally be exerted in favour of high rates. Professional extravagance must be met by professional control; no check on extravagant expenditure is afforded by the present method of assigning a water rate inadequate to meet construction and maintenance and supplementing this by so much of the land revenue as will make up the deficit. The circumstances in which the distinction arose in zamindari provinces between owner's rate and occupier's rate are in no way similar to the circumstances in which the distinction between wet rate and water rate originated, as already described. If the levy of cess is illegal, the existing law can be altered. Such an alteration would have the support of the practice in Madras where cess is levied not only on the consolidated wet assessment but also on the water rate charged on dry land which occasionally receives irrigation.

The basis of the commercial credit, namely, that parts of the enhancement may definitely be attributed to the water and the soil respectively, seems to some of us unsound. It may be argued that the greater yield which one soil gives under water over another must be a consequence of properties present in the one and absent in the other. It may on the contrary be argued that since the greater yield cannot be got without water, it is the consequence of the water. This question recalls to mind an older controversy about the hen and the egg. The one argument is physical, the other economic. No need exists for separating into theoretical component parts an enhancement which is in fact the outcome of two factors chemically associated. If Government is a partner with the cultivator in the development of his land, it cannot at the same time be a company supplying water. So long as canal systems are inadequately equipped with water courses and are destitute of field channels, and so long as custom, recognized by law, permits the cultivator of the higher land to dump his surplus water by any channel he pleases on the lower land, so that a few men working paddy on the higher levels may make it compulsory on the whole country side to grow paddy or nothing at all, it appears to some of us idle to talk about the commercial valuation of water. What Government possesses in such circumstances is a monopoly of water which it is compulsory on everyone to use, and no comparison can be made with conditions in those parts of India where the cultivator is free to take or refuse water as he pleases. In Burma the Government does not even bear the full cost of providing the monopoly; the cultivator has himself to remove silt from water-courses and may even be called away, as in Salin, at the height of the cultivating season to labour on irrigation headworks. In these circum-

stances arguments which contemplate the irrigation department as a public supply company carefully regulated by private act of the legislature, serving only those who ask for its services and measuring the volume of its supplies to each customer appear altogether invalid. A truer analogy is that of a proprietor developing his farm. Such a man treats the capital which he puts into the land as the cause of the increasing return and credits the return to the capital. If he is a landlord who lets his farm, he stipulates to be given a much higher rent in return for the expenditure and does not ask for merely the current rate of interest, leaving to the tenant all the enhancement which results from sinking capital in the land.

152. However desirable it may be to allow a credit to the irrigation department on commercial lines, it is incumbent on those who hold this view to show, firstly, that a share of the enhanced produce resulting from irrigation can be separately attributed to the water; and secondly, that this share does in some

The commercial
credit in application:
Calculation of the
water share.

useful degree approximate to the commercial value of the water. We have explained that the land share can be estimated roughly and applied as a flat rate. The balance of the revenue represents the enhancement due to irrigation; it is due partly to the water and partly to the land. If the assessment classes be formed on principles generally accepted in Burma and in this report, there will be somewhere in the series an assessment class which contains land with a secure and timely supply of water but poor soil. Such land may for example be placed in the third class, estimated to yield 30 baskets of rice per acre, and denoted by the symbol C₃, third class canal irrigated land. Land with better soil, estimated to yield 40 baskets per acre, will be second class canal irrigated land, C₂; land with the best soil estimated to yield 50 baskets per acre will be first class canal irrigated land, C₁. The settlement officer will ascertain the rental produce of the land and, taking into consideration all relevant facts, may decide that the assessment rate on C₃ under rice should be Rs. 4 per acre. This assessment rate comprises the flat rate, say annas 8, representing the share due to the land. Then the charge for water on this land when under rice cannot exceed Rs. 3-8, the balance of the assessment; this is the full commercial value of the water on that land, the share due to water, and may be taken as the water rate when rice is cultivated. The higher classes can pay higher rates; but these are placed in a higher class because they consist of better soil, the difference in the assessment represents superiority of soil, in other words it is due to the soil and not to the water. If second class land C₂ can be assessed at Rs. 6 per acre and first class land C₁ at Rs. 8 per acre then these assessment rates contain three elements: the flat rate representing the land share of annas 8 per acre; the water rate also a flat rate representing the share due to water of Rs. 3-8 per acre; and the share due to superiority of soil, the soil share, which on second class land will be Rs. 2 and on first class land will be Rs. 4. On some lands, however, the supply of water will be insecure. Some of this land, despite the insecurity of yield, will be so fertile that it can be placed in one of the three higher classes; thus although soil with secure water would yield 50 baskets, a deficiency of water may render

it necessary to estimate an average outturn of 40 baskets, and it would be placed in the second class; some insecure land might also be placed in the third class. Some insecure land however, will be unable to pay the third class rate. This will be placed in a fourth or fifth class. Then, just as the rate on third class land represents the land share and water share alone, so the rate on the fourth and fifth classes will contain only these two elements; while the rate on the first and second classes will contain an additional element representing the superiority of their soil, the soil share. Suppose that the settlement officer proposes Rs. 8, Rs. 6, Rs. 4, Rs. 2, Re. 1, for the five classes, and that the land share calculated, as explained above, is As. 8 per acre. Then, if there are 2,000 acres of each class, the total assessment and its apportionment will be given by the following calculation:—

Class.	Area.	Assessment			Total.
		Land share.	Water share.	Soil share.	
		Rs.	Rs.	Rs.	Rs.
C 1	2,000	1,000	7,000	8,000	16,000
C 2	2,000	1,000	7,000	4,000	12,000
C 3	2,000	1,000	7,000	...	8,000
C 4	2,000	1,000	3,000	...	4,000
C 5	2,000	1,000	1,000	...	2,000
	10,000	5,000	25,000	12,000	42,000

This procedure does distinguish between the share of the enhanced proceeds which can be attributed to the water, and the share which can be attributed to the soil. That the amount which would be credited to the irrigation department is entirely due to the water seems hardly questionable. It may be too low; less, that is, than the sum commercially due to the department, because the settlement officer has taken less than the commercial value of the water on third class land, or because part of the soil share on the higher classes might be claimed as due to water; but it cannot be too high or more than is due to the department, because the full land share and full soil share have been deducted from the increased revenue. It remains to examine however whether the result does in any useful degree approximate to the full commercial value of the water and can be used to indicate the proper water rate. If the water rate as thus calculated allows a fair commercial return on the cost of irrigation the problem has been solved. But the rate may be too low, either because the higher classes are only contributing at the flat rate, or because third class land could bear a higher rate. It remains to examine these two objections.

153. Indian practice throws some light on the question. Every-justification of a flat rate where the revenue which could be levied if the rate for water. land were unirrigated is credited as land revenue; with respect to the enhancement of the demand rendered possible by irrigation the practice differs in different provinces. In Madras, land regularly irrigated from Government sources is classified as Wet, the

Land revenue is assessed on the usual principles of settlement and this is apportioned between land revenue and irrigation by calculations in the office of the Board of Revenue. Land where the irrigation is doubtful is classed as Dry land and if water is taken a water rate is charged which may be assessed at a flat rate or may vary with the soil. In the remaining provinces all water rates with unimportant exceptions are fixed by the irrigation department at a flat rate varying with the crop grown; originally they were empirical, being adjusted according to the rate which the crop would bear and they have now become largely conventional. The rate which the crop can bear does not necessarily mean the full rental produce under irrigation; often a crop can only bear much less than this because the people will not pay more. In the Central Provinces water rates are designedly framed low "to encourage the irrigation habit." Nowhere has the settlement officer any say in the fixing of water rate (as distinct from a consolidated assessment on irrigated land) but in provinces where the land revenue demand is based on the net assets the water rate is one of the items which is deducted in calculating these. A share of the land revenue also may be credited to irrigation; this can be justified in certain circumstances but is not invariably the practice. Thus in those provinces of India where a distinction is observed between the water rate and land revenue due to irrigation, and the water rate has been fixed by the irrigation department, it is assessed as a flat rate, varying with the crop.

The imposition of a flat rate for water is not arbitrary. If an irrigation work be constructed by a private company to supply water to a numerous body of cultivators the company will look for the largest profit on their expenditure. They could sell water individually to each man but this would entail so much supervision and so large an expenditure on management that it would probably be unremunerative. The company will have to deal with the land in blocks, the size of the block being determined by the ratio between the cost of management and supervision and the return which extra management and supervision would yield. Within this block the charge cannot be more than the poorest land can pay, and that will be the uniform water rate over the whole block. If the supply of water to that block be a sound business proposition the water rate will give a high return, if construction or maintenance be inefficient the returns will probably be low. All land of better quality will yield a larger rental produce and be able to pay a higher rent and therefore an enhanced land revenue in addition to the water rate. This is exactly the position where Government supplies water from a distributary; water is given out to irrigate the whole area which it commands and it does not pay to regulate the individual supply. The water rate must be such as the poorest land can pay and the better land can in addition pay higher rent and land revenue. Again a company dealing with such a proposition would require legal powers, and since they would be receiving a monopoly it would be proper to impose some limit on their charges. A suitable and probably the most convenient way would be to empower it to charge a flat rate on all the irrigated land, varying with the crop. Then people who could not afford to pay the flat rate would not take water, and the water rate would be the amount which could

be paid by the poorest land receiving irrigation. It might pay the company best to irrigate 4,000 acres at Rs. 5 per acre or 5,500 acres at Rs. 4 per acre; in either case there would be a flat rate and land which could not afford to pay it would receive no water.

To charge for water at a flat rate on all soils and to demand land revenue in addition on the better soils is, therefore, not only consonant with Indian practice, but would be found necessary if the water were supplied on a commercial basis by a private company.

154. The other objection to the proposed method of calculating water rate is that the rate actually assessed on third class land represents less than the land could bear. The highest theoretical assessment on the poorest land, including water rate, will only be half the rental produce; a cultivator might be willing to pay much more than this for water and as a matter of business might be required to pay more. The settlement officer however will usually be reluctant to take so high a rate on the poorer land as theory would justify. In Madras there would be a practical test of the proper rate. Insecure land would be classed as dry land and a water rate would be charged when it grew an irrigated crop. This procedure would be suitable on systems where it was deemed advisable to restrict the area irrigated with a view to rendering irrigation more efficient. If under this system insecure land took water freely without adequate prospect of a paying yield, the water rate would seem too low; if cultivators were deterred from taking water when they might have done so, the water rate would seem too high. The imposition of high rates on insecure land is contrary however to the practice of Burma settlements, on which the lower classes pay a smaller proportion of their yield. The choice between these two methods could properly be left to the irrigation department. It might pay equally well to irrigate 4,000 acres at Rs. 5 per acre or Rs. 5,500 at Rs. 4 per acre, but, if irrigation would be prejudiced by an attempt to irrigate the larger area, they might decide, quite rightly, to irrigate the smaller area and discourage the use of water on insecure land by imposing a high rate. In general it seems preferable to adopt the other alternative and take a low proportion of the yield on the lower classes. Where this course is adopted the water rate cannot be used to measure the value of water. The settlement officer on the ordinary processes of settlement would be able however to determine approximately the maximum limit, which would probably not exceed half the enhancement of rental produce due to the supply of water. That the water rate cannot represent the full enhancement is recognized even where rates are fixed by the irrigation department; in the Central Provinces, as already explained, water rates are designedly framed low. A private company supplying water would be in the same position; however large the enhanced value of the produce they could not charge more than the cultivator would pay and the settlement officer in the course of field work should be able to frame an estimate for this.

Let us apply these considerations to the illustration given in paragraph 152 above. Suppose that a fair return is $6\frac{1}{2}$ per cent., and that the work cost two lakhs to carry out, and for simplicity omit all reference to maintenance charges. The water rate in the illustration

returns Rs. 25,000 or 12½ per cent. and is obviously remunerative. If the work cost 4 lakhs the water share would yield 6¼ per cent; at 5 lakhs the water share would yield 5 per cent. Suppose however that the rental produce of third class soil was Rs. 12 an acre and the settlement officer has taken Rs. 4 instead of taking Rs. 6. If he had taken half the rental produce the water share would have been Rs. 33,000 and the return would be 6·8 per cent. He could then allow Rs. 5·8·0 as the water-rate. The whole enhancement on second class soil would then be charged as water-rate, and on first class soil the water rate would be Rs. 5·8·0 and the soil share would be Rs. 2 per acre, reducing to Rs. 4 000 the total amount to be credited to be land revenue in addition to the land share of Rs. 5,000. It would be apparent that the land revenue was being leniently assessed because the people were not prepared to pay full value for their water; at resettlement, when the people had become used to taking Government water, the land revenue could be raised to a suitable figure. If on the other hand the full credit be allowed, including both water share and soil share, and the work cost two lakhs, it will apparently be returning 18½ per cent. and even at a cost of 5 lakhs the apparent return will be 7·4 per cent. These apparent profits will include an element of land revenue; the fact that the work is being subsidised out of land revenue and also the low pitch of land revenue will be disguised; while the apparently high rate of profit will tend to encourage extravagant maintenance. It seems then that the differentiation between the water share and the soil share does serve a useful purpose and that the flat rate for water calculated on this system should roughly indicate the commercial value of the water.

A logical application of the system for arriving at the water rate which has been described above would involve an allowance for the water rate as a cost of cultivation on the better soils. But the process does not claim to be more than a rough guide towards determining the commercial value of the water, and to apply the water rate as a cost of cultivation would introduce an unnecessary refinement. Similarly when the water rate has once been determined there is no necessity to repeat the process of recalculating the water rate in the above manner at resettlement. There are however advantages in a re-examination of the whole position by the settlement officer, and, as the calculation of water rate on the lines suggested introduces no additional complications into settlement procedure, there seems little objection to the readjustment of the rate at resettlement on the same principle, if thought necessary.

155. So far we have dealt solely with land irrigated for rice. But other crops may be grown. Some of these are more valuable than rice, but this does not seem in itself a sufficient reason for differential treatment. Some of them consume more water, or require water for a longer time, or at inconvenient seasons; this is a valid reason for differentiation where the area is considerable. In Burma however no irrigated crop other than rice occupies any large area and at present no differentiation for more valuable crops seems necessary. Other crops are less valuable, and cannot pay the rate for rice. The soil share in the above discussion does not represent the rate which

Water rate on crops
other than rice.

could be assessed on dry crops; it indicates the superiority of the soil, when irrigated, under rice. If a dry crop is grown without irrigation the land should not pay the full rate less the water rate; it should be assessed on the principles indicated when discussing the system of double classification. But land receiving seepage from an irrigation work, or benefiting from the overflow of an irrigation work, may properly be required to pay a water rate. This would require an amendment of the present law. If a charge in such circumstances is made legal, the settlement officer should define the limits within which the charge for dry crops should be made. He should also recommend which crops should be assessed as wet crops; all other crops, subject to the orders of the Government from time to time, should be assessed as dry crops. Where rice is grown without irrigation owing to some temporary or local failure it would ordinarily suffice to assess it at a uniform rate over the whole system, as the area would not be sufficiently large to justify classification to meet these circumstances.

156. The construction of a new canal renders useless many small private tanks in the area which it commands. Even private tanks outside the canal system may be rendered useless by order of the irrigation engineer if the storage of water in them menaces the safety of the canal or its distributaries. Chapter II of the Burma Canal Act provides for compensation to the owners of such tanks. But these provisions are little known and in any case the payment of a lump sum down is a less desirable form of compensation than a continuing reduction of rates on the lands formerly irrigated from the private works. It is the practice in the Central Provinces to recognize the destruction of private works by a reduction of the water rate on the lands which they command. We recommend that a similar practice should be introduced in Burma, and that settlement officers should consider whether the destruction or deterioration of private system, which is incidental to the provision of irrigation on a large scale, should not be compensated by lower assessment rates. If such compensation seems unsuitable, they should report how the proprietors of tanks detrimentally affected may suitably be reimbursed.

157. The problem of drainage rates resembles the problem of water rates. The officers of the irrigation department whom we examined represented that the department does not receive an adequate credit on account of improvements made by embankments and drainage, and claimed that it is justly entitled to the whole land-revenue of 22 lakhs raised from land protected by embankments along the Irrawaddy, for which it receives no credit at all. Again, between the railway and the Sittang river, large areas are flooded and rendered uncultivable by streams draining the Pegu Yoma range. These are being reclaimed by large bunds which confine the streams to narrow channels emptying in the Sittang. On the land under these a drainage rate is now charged. There seems no essential difference between draining water off by works of this kind and supplying water by canals. We are of opinion therefore that drainage rates should be determined on the same principles as water rates.

CHAPTER XV.

SETTLEMENT PROCEDURE.

158. We have now reviewed one by one the principal operations of settlement so far as it relates to the assessment of land. The nature of our recommendations will indicate that we contemplate certain changes in settlement procedure. Briefly our view is that settlement procedure has been dominated by the traditions which grew up under the exceptional conditions of Lower Burma during the period of economic transition between 1870 and 1905, and although these traditions have been modified, by experience in Upper Burma from 1890 onwards, and later, by the development of more stable conditions in Lower Burma, they have remained sufficiently effective to hamper the development of procedure along lines more suited to the present day. On the conception of settlement indicated in the original draft directions of 1879 and the correspondence leading up to them, the procedure would have closely resembled the general lines of settlement in India. Both public lands and private holdings were to be demarcated, a record of rights prepared, the country to be divided into large homogeneous tracts, characterised by distinctive physical or economic features, and then, working from larger areas to smaller within the tract, the settlement officer was to classify the kwins, and within the kwins the holdings, which were to be assessed at a fixed rate including an allowance for fallow land. But under the unstable conditions resulting from the rapid development of the country the procedure took quite a different form. Demarcation was abandoned, the record became a register of possession and the practice arose of grouping for assessment scattered blocks and single kwins which might not have anything in common but similar standards of fertility and value. With this practice originated the mathematical conception of settlement procedure. When the earliest original settlements in Lower Burma expired and revision became necessary, it was originally contemplated that the revision settlement officer should take up a whole district at the same time and consider the general grounds for a change of rates over the whole area and in each tract. The rates were to be raised or lowered by the same percentage as the change in the value of the produce but an extra enhancement might be taken where the rates under the original settlement had been low. Each tract was to be dealt with separately; as the settlement officer completed it he was to publish in the villages the rates which he contemplated and, after hearing objections, to modify the rates if necessary. The Government of India objected to the publication of provisional rates, but advocated publication of the maps, and suggested that settlement proposals might be submitted in a full and detailed forecast, which would obviate the necessity for submitting detailed proposals before publication. The Local Government replied that the proposal to publish maps was impracticable and that no

materials existed for an elaborate forecast. In the event the procedure of the original settlements was retained. Rates were low, prices rising, cultivation was still rapidly extending over new country, and during the period covering the first revision of the original settlements the mathematical conception of settlement reached its fullest development. The settlement officer dealt with a fresh area each year, in many cases he never saw the portions dealt with by his assistants, except possibly for a hurried visit to a few places while inspecting crop measurement, the groups of kwins became increasingly more scattered and all possibility of adjusting rates to local circumstances disappeared. Meanwhile the inception of settlement operations in Upper Burma had presented settlement problems in a new aspect. There was an attempt to introduce the procedure sanctioned by use in Lower Burma, but the diversity of cultivation, variety of crops, and clear marked soil distinctions demonstrated its unsuitability. In place of the scattered groups of kwins which formed the Lower Burma tract, continuous stretches of country were adopted; and instead of annual operations over small areas the whole district was dealt with simultaneously over a period of three or more years. In 1906 the Government of India suggested that even in Lower Burma settlements were unduly hurried. It was recognized that settlement officers experienced difficulty in acquainting themselves with local conditions in a single season, that revision settlements tended to become more elaborate, and that greater refinement was needed in soil classification. It was decided therefore, when the second revision or the third round of settlements began, to enlarge the area of settlement operations in Lower Burma and allow longer time. Since then a reaction against the preponderant influence of statistics has gradually been gathering weight. In Lower Burma tracts are now continuous "ring fence" areas instead of the scattered groups of early days, enquiries have been reduced in number, and have become less summary and more circumstantial; these changes combined with the longer period allowed for settlement have enabled settlement officers to pay regard to local circumstance in framing rates. But the traditions of the earliest period have survived, detailed enquiries have led to more elaborate statistics, and settlement officers still devote much time and space to the mathematical analysis of theoretical rates, purporting to justify proposals by figures which are obviously worthless; but tend to dismiss in a few words such material evidence regarding economic circumstances as they have been able to collect. This formal subordination of facts to figures is inevitably accompanied by a tendency to neglect the analysis of economic conditions in the field and leads to a distrust of facts and figures equally; there is a disposition to regard material as something merely to be compiled in office and tabulated in a form, and to depend largely on intuition for arriving at a suitable assessment, so that in passing orders on proposals Government is thrown back on theoretical rates as indicated by statistics. Other features of settlement procedure which have met with criticism may also be traced to the general course of its development under the influence of the traditions of Lower Burma. The complexity of detail in the Instructions is without parallel in India. Bombay and the Punjab have Settlement Manuals describing the history of settlement

and inculcating principles; in Madras there are two very short volumes of general directions, for original and revision settlements respectively; the Code in the Central Provinces occupies an intermediate position between these. But the complexity of detail in the Burma Settlement Instructions illustrates at once the conception that settlement can be reduced to rule of thumb and the fact that it cannot; the proof of the latter fact contained in their complexity is reinforced in many cases by their inconsistency and unsuitability. They derive from the assumption that settlement is a simple operation which can be controlled in detail by instructions, but this, especially in Upper Burma, it is, emphatically, not. To relieve settlement officers, especially in Upper Burma, of the immense burden of useless work now laid on them must be a prime object in any reform of settlement procedure. Other features of settlement which distinguish the procedure of this Province from that general in India are the omission to make adequate use of material compiled by the land records department, the omission of any general review of assessable capacity in a forecast by the settlement officer and the consequent difficulty of exercising control over his proposals, the omission to consult public opinion before imposing rates, the omission of any procedure by which the settlement officer announces the demand and hears objections to it, and the omission of procedure for revising the record of ownership and occupation. These must be admitted as defects and, with the growing reaction against the earlier conception of settlement, they have increasingly been recognized. In 1917 when the Government of India raised the question of giving publicity to proposals for the resettlement of land revenue, Mr. Arbuthnot, then Commissioner of Settlements, took advantage of the opportunity to frame proposals for a revision of settlement procedure on lines designed to remedy the above defects. The main principles underlying his proposals we accept. Before framing recommendations however we proceed to examine Indian procedure.

159. In India, settlements are ordinarily conducted in three stages.

Procedure in India. In the Punjab the settlement officer during the first stage makes a close personal study of the area for settlement, collecting, compiling and analysing the material which will form the statistical framework of his proposals and on the more important points obtains preliminary orders. At the end of this stage he submits an assessment report in which he proposes a total demand and assessment rates for each main kind; an abstract of his proposals with a brief statement of their basis is published for information and criticism. The Local Government after considering any objections passes orders on the assessment report. The settlement officer then distributes the demand as sanctioned by the Government over individual villages and holdings. He is allowed to vary the total assessment of the circle to a limit of three per cent. above or below the sanctioned aggregate. As regards the assessment on individual villages, he has a free hand in putting any village as much above or below the assessment calculated at the sanctioned rates as he pleases, but where the assessment of a village differs from this by more than 20 per cent., or where the existing demand is lowered, he is required to state the reasons in the detailed village assessment statements which he submits to the Financial

Commissioner for sanction. He then announces the demand and signs a statement certifying the amount. There are rights of appeal against the sum he fixes. The revenue on the village is distributed over individual holdings by the people themselves, with the assistance or under the supervision of the settlement officer if necessary, who may classify the land on the lines desired by them. In the Central Provinces the settlement officer-designate submits a rather elaborate forecast after spending about six months studying the district, arranging his plan of operations and supervising the compilation of statistics. This report is published for unofficial criticism and submitted for orders. In the second stage, after the receipt of orders on the forecast, the settlement officer works out his detailed proposals for assessment by holdings and villages. He submits for approval proposals for the formation of groups, for classification of the soil and for fixing the relative value of the soil classes and obtains the orders of the Settlement Commissioner on these points as he proceeds. He then submits detailed proposals for orders as he completes each group, and, after receiving them, announced the new rental demand and assessment. At the end of the settlement he compiles an elaborate report explaining and justifying the settlement. He is not in any way bound by the orders on his forecast report and if, on further enquiry, he considers that the proposals in that report would give too high or too low an assessment in any group he submits revised proposals. In Madras the first stage of settlement is to collect statistics and submit a scheme report. Here the conduct of settlement is simplified because the classification is practically permanent, but before classification had become permanent, the procedure was essentially the same and the settlement officer was given an entirely free hand to vary the proposals in the scheme report.

160. The procedure in the Punjab does not seem applicable as the conditions are so different. But a system on the lines adopted in Madras and the Central Provinces might suitably be introduced. We are of opinion the first operation should be the collection of material relevant to the assessment, and the submission of proposals for assessment, and also for the further conduct of operations regarding distribution and other matters. Opportunity should then be given to the general public for the representation of their views. Government after considering this material would pass orders on the proposals of the settlement officer who would then proceed to carry out the settlement in accordance with these orders.

161. The preparations for settlement fall into two stages, provisional and final. The provisional stage lasts until it has finally been decided that settlement shall be undertaken. A settlement roster is maintained showing the date for each district when re-settlement is due. A settlement officer makes abnormal demands on the stock of maps in the district office record-room and precautions must be taken that this is adequate. Before maps are reprinted the survey requires scrutiny; extensive resurvey may be required or the correction of a few *kasins* may suffice. Any resurvey which involves traverse work should be conducted in two separate stages in successive seasons. Time must be allowed therefore for resurvey, and the printing of maps. If the

resurvey is extensive the assistance of a special party may be needed. The programme of work for the special party is prepared annually during the rains. It may not be possible to comply immediately with applications for assistance. The first stage of the provisional arrangements should consist of a special scrutiny of the stock of maps and requirements for resurvey. The Settlement Commissioner should call for a report on these points five years before the date fixed in the roster for settlement operations to begin, and also should enquire whether there is any sufficient reason not to revise the settlement. Other preliminary arrangements are required, but these need not be undertaken until it has been finally decided that the current settlement shall be revised. In order to allow ample time for these the Settlement Commissioner, two years before the date provisionally assigned, should ask the Divisional Commissioner to ascertain whether there is any ground for postponing re-settlement. The Deputy Commissioner would submit a report on the subject through the Commissioner. The report however should be nothing like so elaborate as the forecast prescribed under paragraphs 58 to 64 of the present Settlement Instructions. It cannot be expected that a Deputy Commissioner, unless he has settlement experience, will be able to give any valuable analysis of physical changes, communications, agricultural conditions, prices, wages, rents, population, and so on. But he can bring to notice any important facts which would render revision of the existing settlement inopportune; for example, the recent or impending construction of a protective bund, or new irrigation work, or drainage scheme, which would materially affect agricultural resources over a large part of the area for settlement. The Settlement Commissioner should then obtain the orders of Government as to whether re-settlement is to proceed, and at the same time suggest the probable duration of operations, and the staff likely to be necessary. He should also examine the arrangements for the training of settlement officers and make certain that a sufficient number of trained officers is available. The present instructions lay down that the forecast shall be called for one year before the date provisionally fixed and reach the Local Government not less than three months before that date. The time allowed is quite inadequate if a departure from the sanctioned programme should become necessary. The brief note, which is now contemplated, should reach the Local Government at least eighteen months before the date provisionally fixed.

162. When re-settlement has been sanctioned the local land records department, in addition to the arrangements already in progress, will put in hand the preparation of any maps and records which may be wanted, including topographical maps, on which kwin boundaries should be shown, and index maps. At present the department is expected to prepare spare copies of the current kwin maps and area statements embodying all corrections up to date. Where a copy of the current map is required, it is now the practice in some parties to borrow the land records map, but this may occasion inconvenience. It is uncertain how far new area statements are useful and the balance of opinion seems to be that they should not be prepared. It is the practice however, at any rate in Upper Burma, for the land records department to prepare kwin by kwin a statement showing the area cultivated with each crop for the

past five years. Sometimes a statement showing also the area matured under each crop has been prepared. Both these statements are useful in Upper Burma, and even in Lower Burma would sometimes convey valuable information to the settlement officer. It would be useful for the land records department to prepare a statement showing kwin by kwin the value of the normal gross and net produce per area on the assumptions of the former settlement regarding prices and cost of cultivation, the incidence of revenue per acre, and the rental sale and mortgage value per acre. Most of these statistics would be available in the latest Season and Crop and Land Revenue Administration Reports. Another statement should also be prepared showing the rental and sale and mortgage values in the year of last settlement and in every fifth succeeding year. In the volumes containing the detailed crop measurement statistics of the previous settlement should be noted the field numbers corresponding on the current maps to the fields then reaped. The preparation of these records should definitely be prescribed as part of the preliminary arrangements for settlement. If the lands records staff could not find time to complete them an advance detachment of the settlement party might be sent to do so. The only remaining step is the publication of a notice warning landholders and others that settlement will be revised. The present form (Pre-settlement No. 2) is not quite suitable as it contains much that can be published with greater effect at a later date; a brief notice in general terms will suffice. It should announce in simple language that the settlement is about to be revised and warn the people to watch for further notices. A copy might suitably be printed on the face of the tax receipts for the previous year.

163. The settlement officer on arriving in the district will be furnished with—

The First Stage of settlement; for the subordinate staff. (1) a topographical map of the settlement area showing kwin boundaries;

(2) a supply of index maps;

(3) a report showing the progress of resurvey;

(4) statements showing kwin by kwin—

(a) the area cultivated with each crop for the last five years;

(b) the area matured under each crop for the last five years;

(c) the value of the gross and net produce per acre on the assumptions regarding prices and cost of cultivation of the former settlement, the incidence of the revenue per acre, and of rental, sale and mortgage values per acre;

(d) the rental, sale and mortgage values per acre in the year of last settlement and in every fifth succeeding year.

(5) the detailed crop measurement statistics of the previous settlement showing every field reaped and the results, and the corresponding field on the current map;

(6) blank kwin maps and also copies of the current map and copies of the area statements, if required.

The first task of the settlement officer will be to complete any of these statements which are not yet ready. This will be allotted to an office section. On completion of these statements the men of this section, supplemented with others as available, will undertake

the preparation of statements corresponding to the following now prescribed for settlement reports:—

I. Occupied and other areas at last settlement and at present settlement.

II. Land Revenue and *Thathameda* or Capitation Tax Demand and Collections for 18 years.

III. Areas under various crops from last settlement to present settlement.

VIII. Rainfall recorded from last settlement to present settlement.

IX. Areas irrigated from Government works and Irrigation Revenue for 18 years.

Some of these forms might be modified; for example, statement II shows the recovery by process without distinguishing between land revenue proper and capitation or *thathameda*-tax; without this distinction the information may be misleading. This office section would also prepare records of prices and take up such other compilation as might from time to time be needed. Simultaneously the settlement officer will make arrangements for crop measurement. These would be urgent or not according to the time at which he reached the district. He would usually arrive about October and preparation for measurements of the main winter crop would require immediate attention. Crop experiments would be conducted on as large a scale as would allow adequate supervision of the reaping or gathering. So far as possible the fields selected at former settlements would be chosen, but in this matter we do not wish to limit the discretion of the settlement officer more closely than is recommended in Chapter XI. The services of the land records department might be utilized so far as the Deputy Commissioner agreed. By the end of the crop measurement season the settlement officer will have been able to tour over the greater part of the district and with the aid of the above statistics could provisionally block out his tracts.

On the completion of crop measurement the settlement establishment will check in the field, kwin by kwin, all the land records figures relating to tenancies, mortgages and sales for the current year. They will not collect them anew and will disregard any apparently erroneous entry in the record of ownership, mortgages or tenancies unless it affects the statistics of sale or mortgage values. Where, for example, A had mortgaged land to B, redeemed it and re-mortgaged it at a higher price to C, but the new mortgage did not appear in the land records register it would be necessary for the settlement department to take note of this, and for such cases an errata statement would be prepared for the kwin. But if the re-mortgage to C were at the same price no errata statement would be necessary. It will also be unnecessary to prepare an errata statement for the correction of erroneous particulars regarding tenancy or rent. Where entries in the record appear erroneous but do not affect the statistics, no alteration will be necessary; where figures are incorrect but do not affect interests in land the correct figures will be entered in the remarks column of the register. The figures, as corrected, will be totalled and tabulated in the field.

164. Meanwhile the superior staff will be checking the work of these clerks and also examining village by village the equity of the current assessment by comparison and for officers. They will examine the classification and with neighbouring villages. They will examine the classification and on the basis of general information, verified in the field, and of rental and land values, will note where it appears erroneous, or to require greater refinement or less. For example, if one of two villages assessed class for class at the same rates is reported more fertile than the other, or if two villages assessed at different rates are reported equally fertile, the fact will be noted. Similarly they will make a note if a large area of flooded land appears highly assessed, or if certain villages show abnormally high rental and land values compared with others assessed at the same rate or if the assessment classes appear insufficient with an excessive range in each class, or too numerous and indefinite. They will also be making enquiries into the cost of cultivation on the lines recommended in Chapter XI and enquiries into prices. For each village visited they will note whether it would bear the general tract enhancement or should be raised more than or less than others. By selecting the villages they would be able during the field season to carry out these local enquiries in a number of villages sufficient to give a fair representation of general conditions. An illustration may serve to make this proposal clear. Take a district in Lower Burma with 5 townships and 750 villages and 2,000 kwins. The townships would be distributed among the assistant settlement officers and senior inspectors, one to each. Each officer would therefore be in charge of about 150 villages and 400 kwins. The settlement officer would supply him with a list of kwins with figures compiled from the land records registers, showing the outturn per acre for each class assumed at the expiring settlement, the total outturn and the average outturn per acre, the assessment rate per acre for each class, the total assessment and the incidence per acre, and the rental, sale and mortgage values per acre. The settlement officer on a study of the former settlement and the statistics just mentioned would have blocked out the township provisionally into tracts. The section officer with such assistance and advice as the settlement officer could give from time to time, would begin his study of the township at the commencement of the crop selection season. The inspectors and surveyors of the land records staff would be able to give him information regarding the relative fertility of land in different villages, their relative wealth and assessable capacity and the suitability of the current assessment. In every village which he visited he would compare the outturn and incidence of assessment with those in neighbouring villages. Selected villages he would study in detail. He would have five independent methods of estimating the outturns—

(a) In the list given him he would find the total outturn on the assumptions of the former settlement.

(b) He would consider what modification, if any, was indicated by the results of crop measurement at the present settlement and could frame an estimate of the outturn on this basis.

(c) The outturn from rented lands as recorded by the land records department would supply another basis for an estimate.

(d) He would ascertain what proportion of the gross produce was ordinarily paid as rent and this proportion, combined with the fixed produce rents as recorded by the land records department, would furnish the basis for another estimate.

(e) Enquiries in the village from brokers and landowners would provide material for a fifth estimate.

This material should enable him to compare the normal outturn of the village at the time of his enquiry with that assumed at the expiring settlement, and the gross value of the produce at the former and present settlements. He would consider rental, sale and mortgage values and on these considerations frame an estimate of the percentage by which the current assessment should be raised or lowered. During the seven months from the beginning of November to the end of May he should be able to visit all the villages within the township and inspect more than one-quarter of the kwins. During this period he will continually be comparing one village with another, frequently discussing with the settlement officer his figures and estimates and notes on the existing classification and proposed changes, and revising his estimates where necessary in the light of further information or under the settlement officer's advice. Even as regards the kwins which he does not actually visit he will have all the material mentioned above and thus be able to estimate their assessable capacity by comparison with those visited. For the villages inspected during the last half of the field season the figures for the current year would also be available. The settlement officer would himself be able to inspect about twenty per cent. of the villages in each township.

This outline of the duties of an assistant settlement officer during the first stage of settlement may appear formidable. It may be objected that officers of that standing would be unable to utilise the material at their disposal in the manner suggested. We have however been concerned rather to point out the wealth of material available than to prescribe the exact method in which it shall be used. The essential point is that the assistant settlement officer will be expected to give the settlement officer an indication of the relative pressure of the current assessment in different villages and their relative potential assessable capacity. This is a question of common sense. It will be found easier in some ways in Upper than in Lower Burma because of the wider differences of soils and crops; but in Lower Burma the pitch of rental and land value will not only help the assistant settlement officers in framing estimates but will facilitate the task of the settlement officer in criticising and correcting them. Meeting his assistants once a month, touring with them and seeing a proportion of the villages himself, he will be able to set them right when they have gone wrong, and to make use of their estimates even when these are injudicious or incorrect. It should be remembered that these estimates by the assistants merely provide material on which the settlement officer frames his own village estimates, and that the village estimates framed by the settlement officer will only be used to test and bring closer to reality the conclusions arrived at by calculating the rental produce and analysing the general conditions of the tract.

165. Thus, at the end of the field season, the settlement officer will have for each kwin and village the following figures in addition to those mentioned in paragraph 163;

The first recess.

(i) the area rented, net rent per acre, the outturn in the current year and its value, the area mortgaged and rate per acre, and the area sold and rate per acre. These will all have been verified in the field and can be tabulated by soil classes, if required;

(ii) the results of crop measurement during the current year, often with the results on the same field at the last settlement;

(iii) the material for estimating produce values and the cost of cultivation;

(iv) the notes on classification and current and proposed incidence.

With these figures and reports before him he will be in a position by the end of the field season to frame his tracts. He will also be able to make provisional arrangements for their distribution into sub-tracts (where necessary) and groups, but the final allotment of villages or kwins to sub-tracts and groups would probably require more intimate study than had yet been possible.

For each tract he will be able to calculate the gross produce on the classification and outturn assumptions of the former settlement, and to value this at the prices formerly assumed and at those which he proposes to assume. He will also be able to estimate the cost of production per acre in the manner recommended in Chapter XI, and by applying this to the area cultivated will estimate the cost of production for the total of the tract. By subtracting this from the gross value of the outturn he will arrive at an estimate for the rental produce of the tract. Half the rental produce will form the maximum limit of the new demand. The minimum will ordinarily be the current demand. The settlement officer will then consider rental and land values and other similar data for determining the demand and, on these general considerations, including a consideration of the incidence in similar adjacent districts, he will frame one estimate of the assessable capacity of the settlement area as a whole and for each tract; he will check this by an independent estimate representing the total of detailed estimates, village by village and kwin by kwin, based on the enquiries in representative villages during the field season, directed to ascertain their assessable capacity. These two estimates will serve as mutual checks and will be adjusted until they combine to give an assessment which the settlement officer regards as suitable for the tract as a whole and for each village and kwin; the process will be one of working simultaneously up from the kwin figures and down from the district figures.

166. The settlement officer will then submit a report containing his proposals for assessment and for the further conduct of the settlement. It will be divided into two parts. The first part will embody the material facts relating to the settlement area and the expiring settlement which are now given in Chapters I to V, and in Parts 1 and 2 of

The report on assessment proposals.

Chapter VI of the Settlement Report. But it should strictly exclude the superfluous material now sometimes given. It should only contain material useful to the authorities who would pass orders on the proposal, the district officers who would administer the settlement, and the settlement officer who would revise it; all material (such as the statistics of crop measurement, cost of cultivation and the detailed analysis of such statistics showing how the settlement officer utilised them in framing his estimates) which can be dealt with more conveniently otherwise should be omitted. This part will be similar to the corresponding portions of the present form of report and no further description seems necessary.

The second part will contain his proposals for each of the new tracts separately, showing the rental produce obtained by applying the proposed assumptions regarding prices and cost of cultivation to the classification and outturns of the former settlement. After considering the various data for assessment mentioned in Chapter XII he will frame an estimate for a suitable assessment in the manner already explained, by working down from general considerations relating to the district and the tract and up from detailed estimates by kwns and villages. He will summarise the data for assessment in a table in the form given below. This contains the following information.

(a) The gross value of the produce at the former and present settlement. In secure single crop areas, such as Lower Burma, this will be simple. He will use the method prescribed in the Land Records Manual, paragraphs 982, 983 and multiply the area cultivated during the year in each assessment class by the outturns assumed at the former settlement. The gross outturn is thus ascertained and its value at the prices assumed at the former settlement can be determined. An estimate of the gross outturn at the present time will be framed in the manner recommended in Chapter XI and its value will be calculated at the price which he proposes to assume. For insecure areas it will be necessary to ascertain the normal matured area, and for dry cultivation with a variety of crops it will be necessary to ascertain the normal area under each crop. The area in each assessment class under each crop at the last settlement cannot ordinarily be ascertained, and it would therefore be necessary in such cases to estimate the outturns per acre under each important crop at the previous settlement for the tract as a whole without calculating it by soil classes. The outturn per acre at the present time will be estimated in the manner recommended in Chapter XI. These calculations, when required, can be shown conveniently in a subsidiary table for arriving at the gross value.

(b) The cost of cultivation formerly allowed, and the cost of production which the settlement officer proposes to assume. These will be obtained by multiplying the figures showing the area cultivated by those for the rates per acre respectively assumed.

(c) The net produce as estimated at the former settlement, and the rental produce according to the proposed assumptions.

(d) The rental value at the former and present settlements. These figures will be obtained by multiplying the area cultivated by the rent per acre.

(e) The sale and mortgage value per acre.

(f) The present and proposed assessment.

(g) The percentage of the gross value, net or rental produce and rental value at the former and present settlements represented by the present and proposed assessment.

(h) The incidence of the present and proposed assessment per acre cultivated.

After tabulating these data the settlement officer will briefly explain and justify his proposals for assessment, and state what further enquiries he proposes to make regarding outturns, cost of cultivation, the conditions of land alienation and tenancy, rates of rental and land values, the condition of agricultural labourers, and other relevant matters, the probable sub-tracts and groups, and the lines on which he proposes to form main kinds, soil classes and assessment classes.

167. Take for example a tract in Upper Burma with mixed cropping. The report on such a tract might run as follows.

(a) Upper Burma.

"A comparative valuation of the produce is given in the subjoined table:—

Gross Value of Produce.

Crop.	At former settlement.					At present settlement.				
	Area under each crop in acres.	Outturn per acre in baskets or viss.	Total Produce	Price per 100 baskets or (for cotton) viss.	Value.	Normal area under each crop.	Provisionally assumed outturn per acre.	Total Produce	Price per 100 baskets.	Value.
				Rs.	Rs.				Rs.	Rs.
Rice	1,000	30	30,000	80	18,000	1,000	15	15,000	100	15,000
Sesamum	8,000	8	9,000	300	27,000	3,000	8	6,000	450	39,500
Cotton	2,000	70	14,000	20	28,000	4,000	70	280,000	40	1,12,000
Millet	4,000	6	24,000	80	19,200	2,000	8	6,600	100	6,600
Total	10,000	...	...	...	80,200	10,000	...	...	...	1,78,500

The outturn assumed for rice is reduced because the crop measurements of the present settlement and general indications suggest that the outturns previously assumed for the lower classes were too high; the deterioration of millet is generally recognized; cotton has spread over the less suitable soils and the average outturn may be less than at last settlement but it receives the manure and attention formerly bestowed on millet, and the former assumptions appear to have been low, they are supported by statements relating to holding outturns and by figures obtained from cotton mills and may provisionally be retained; the assumption for sesamum requires no change.

The data for assessment can be summarised in the following table:—

Table showing Data for Assessment.

Heads of Comparison.	Gross value.	Cost of cultivation or production.	Net or rental produce.	Rental value.	Land values per acre.		Assessment present and proposed	Percentage of assessment to			Incidence per acre.
					Sale.	Mortgage.		Gross value.	Rental produce.	Rental value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.				Rs.
Former settlement.	90,500	55,000	55,200	90,500	37	28	7,500	5.4	13.6	37.5	75
Present settlement.	1,78,500	90,000	82,500	68,000	69	44	18,250	7.7	16.1	26	1.39

The cost of production which it is now proposed to assume shows a large rise over the cost of cultivation formerly assumed, partly because of a rise in wages, but chiefly because of the allowance now made for home labour; the rental produce, though proportionately reduced by the same cause, is still larger than the former net produce. The rents were mostly one-fourth and one-fifth share at the former settlement and the fractions have now risen to one-third and one-fourth. The assessment proposed represents one-quarter of the rental value and gives as high an enhancement as can reasonably be taken. It is obvious that no assessment approaching half the rental produce can be taken and no more detailed enquiry into the cost of cultivation is necessary. Similarly the assessment cannot approach the rental value; rent, mortgage and sale values are rising normally, but are still low and present no features of special interest; no further enquiry therefore is needed under these heads. The present assumptions for the lower classes of rice land need further examination as does the deterioration of millet land; cotton is an important commercial crop and the outturn should be determined as accurately as possible. It is necessary therefore to conduct crop measurement generally. The proportion which the proposed assessment bears to the assessable capacity indicates that the distribution need not be minute. There are now three classes of rice land with assumed yields of 23, 19 and 14. Lines of classification cannot be consistently applied where the range of each class is so narrow; all the land is very insecure and whether one plot yields more than another, or succeeds when another fails, depends greatly upon chance. The three classes can therefore be reduced to two classes, with yields of 20 and less than 20 baskets per acre; this will considerably simplify the present maps. The unembanked land needs re-classification to obtain a better distribution of the assessment. In some villages there are silt valleys, with high cash rents and sale values, which are comparatively under assessed; some villages, where millet soils predominate, have benefited little or not at all by the rise in cotton and are comparatively highly assessed. I propose to form two main kinds of unembanked land for classification: a black soil main kind containing four classes with the silt valleys in the first class and a red soil main kind with three classes. Within the main kind the present relative valuation will in general be maintained.

For assessment purposes five assessment classes will probably accommodate the seven soil classes and, as the distinctions between main kinds are not required for statistical or fiscal purposes, the classes will be amalgamated into one main kind (Y) with five classes before the maps are made over to the land records department. As the main object of classification is redistribution within the tract the classification within the kwin will be little and often not at all more complicated than at present. The rates on rice land are Rs. 2'00, Rs. 1'25 and Rs. '75; probably the new tract rates will be Rs. 2'50 and Rs. 1'25. The rates on unembanked land are Rs. 1'50, Rs. 1'00 and Re. '50; probably the new tract rates will be Rs. 2'00, Rs. 1'50, Rs. 1'00, Rs. '75 and Re. '50. The actual rates will depend on the classification and the orders relating to enhancement. It will be unnecessary to form sub-tracts as the area is small and fairly homogeneous. Two groups will be necessary, one to accommodate about five villages round a small local market, and a larger group for the remaining villages. In four villages palm trees are numerous and it may be found desirable to place these in a separate group. The tract rates will be adjusted for the various assessment groups according to their circumstances."

Another example applying the proposals to the conditions of Lower Burma may be useful. In Lower Burma, where there is only one crop, it is unnecessary to tabulate the comparative gross value of produce for assessment. The report might run as follows.

"The present tract comprises portions of former Tract A with assumptions 50 and 40 and Tract B with assumptions 45 and 30 and Tract C with assumptions 37 and 28 and 22, and covers 16,000 acres of occupied land. The gross produce on the assumptions of the former settlement would be 530,000 baskets. But at former settlement the land was new and it has since deteriorated; crop measurement and general enquiries indicate that the assumptions in Tract A were rather high and a large area of flooded land has since come under cultivation; railway returns of paddy exported and admissions for holdings indicate that the assumptions were excessive; it would be unsafe to make a provisional estimate higher than 400,000 baskets. The price formerly assumed was Rs. 100, that now taken is Rs. 125 per 100 baskets. The data for assessment can be summarised in the following table:—

Table showing Data for Assessment.

Heads of comparison.	Gross value.	Cost of cultivation or production.	Net or rental produce.	Rental value.	Land values per acre.		Assessment present and proposed	Percentage of Assessment to			Incidence per acre.
					Sale	Mortgage.		Gross value.	Rental produce.	Rental value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Former settlement.	Rs. 5,30,000	Rs. 1,92,700	Rs. 3,38,000	Rs. 1,60,000	Rs. 62	Rs. 34	58,000	10'0	15'8	33'2	3'81
Present settlement.	5,00,000	3,30,700	3,70,000	2,40,000	91	73	66,000	13'2	24'4	27'5	4'01

The estimate for cost of cultivation at the last settlement did not purport to include labour, unless actually hired, but much labour was hired and the estimate was liberal. The present estimate for the cost of production has been obtained, in accordance with the instructions, by detailed enquiries into the cost per acre of each agricultural operation and by checking the results by comparison with the balance left to tenants after payment of rent. If the assumptions for outturn and cost of cultivation are correct, the rents, which have risen during the period of settlement from 10 to 15 baskets per acre, are generally at an economic level. It is impossible to take half the rental value and still less half the rental produce; an enhancement of 25 per cent., which is proportional to the rise in prices, is recommended. No more detailed enquiry into the cost of cultivation is required, but an endeavour to ascertain rental values by soil classes would seem useful to prevent any possibility of over assessment owing to the rented area belonging predominantly to the higher classes. The high pitch of rental values, the large area rented, the abnormal rise of mortgage values with reference to sale values, and the large areas transferred to non-agriculturists indicate the need for fuller enquiry into economic conditions, particularly with reference to indebtedness and rack renting. Crop measurement is necessary on all lands in former Tract A and on the poorer lands throughout the remainder of the present tract; experiments and general information corroborate the former assumptions in the higher classes in Tracts B and C and on these a few experiments in doubtful areas will suffice. It is proposed to form seven classes of rice land with outturns:—above 45, 45 to 40, 40 to 35, 35 to 30, 30 to 25, 25 to 20 and below 20. The present rates are in old Tract A Rs. 4 and Rs. 2.50, in old Tract B Rs. 4 and Rs. 2, in old Tract C Rs. 3.25 and Rs. 2 and Re. 1.25. Extensive re-classification will be required, though the present relative valuation will be in general maintained, and it is difficult to estimate suitable rates. Land yielding 45 baskets could, if necessary, pay Rs. 7.50 or even more and the poorest land could pay Rs. 1.50, the tract rates might therefore run Rs. 7.50, Rs. 6.00, Rs. 4.50, Rs. 3.50, Rs. 2.50, Rs. 2.00, Rs. 1.50. The tract lies on both sides of a main waterway navigable by cargo steamers, but most of the interior kwins are only accessible by sampan, and prices lower. Two groups will therefore be required to meet difference of prices. A large part of the interior is badly flooded and for this area of precarious crops and scanty population a third group will probably be necessary. In a few kwins rental and land values are conspicuously high and for these a fourth group may be required. The tract rates will be adjusted for the various groups."

168. A summary of the proposals will then be published. It will show for each kwin and village the total assessment and the incidence per acre under the current

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The publication of
proposals.

settlement and the total assessment and the incidence per acre proposed. The statement will be accompanied by a brief and simple explanation of the considerations justifying the proposed assessment. Time will be allowed, say one month from publication, for representations to be submitted and these will be considered, together with the general proposals of the settlement officer, by a committee consisting of the Divisional and

Settlement Commissioners and Deputy Commissioner and Settlement Officer. The District Board, if any, and any recognized Agricultural Association should also be represented on the committee. The recommendations of the committee would be submitted through the Financial Commissioner for the orders of Government.

169 On the material contained in the report, the representations of the public, and the recommendations of the committee and the Financial Commissioner, the Local Government will proceed to pass orders.

Until 1912 the sanction of the Government of India was required to the inception of settlement operations and their approval had to be obtained after completion of the settlement before the new assessment rates were brought into force. In that year, subject to certain reservation as to the maximum enhancement on the area for settlement and as to the period of settlement, these powers were delegated to the Local Government. The orders of the Local Government will therefore lay down provisionally the assessment to be imposed on the area as a whole and on each tract. They will also give such directions as may seem proper regarding the further conduct of the settlement, the tracting and grouping, the formation of main kinds and soil classes, and the holding of such special enquiries as may seem desirable into outturns, cost of cultivation, the conditions of land alienation, tenancy and agricultural labour, and so on.

In Burma there are no provisions restricting the enhancement which may be taken at re-settlement as there are in Bombay where the enhancement over the settlement area or any group is limited to 33 per cent. of the expiring assessment. For an enhancement exceeding 40 per cent. however, the sanction of the Government of India is required, and, where an enhancement on any class of land exceeds 100 per cent. at an original settlement or 50 per cent. at a revision settlement, it is tempered by deferment of a portion. We deal with the question of enhancements on particular classes below, where we recommend that rebates be substituted; the limitation of general enhancements however must be considered here. Adequate discussion of this subject involves considerations which would take us almost beyond the very wide limits of our terms of reference. But His Honour, in the preliminary note to which we have already referred, contemplates our examination of the direction in which the revenue system is developing, and draws attention to the changes in revenue procedure likely to ensue on large measures of constitutional reform. In discussing the matter of enhancement therefore we venture to anticipate the trend of settlement policy. There is much to be said in favour of restricting enhancements where, as now in many parts of Burma, holdings are large and rates are high. If a cultivator who has been required for twenty years to pay Rs. 200 annually be suddenly called on to pay Rs. 400, as happens not infrequently at present, the result may well be increased indebtedness and ultimately transfer of the land to a money-lender. But we consider it inadvisable for any Government to bind itself and its successors by the formulation of definite limits on such a matter. We have recommended that half the rental produce shall be regarded as a maximum assessment and we do not wish to

introduce any further restriction. Mr. Couper would prefer that no limit should be fixed, as he would make no distinction between wet rate and water rate and thinks that, in these circumstances, and possibly in others, Government might be compelled to take more than half. The rest of us are unable to follow him to that extent because we deem it useful to lay down a definite basis for the standardization of demands and are unable to contemplate circumstances in which Government would need to take more than half the rental produce. At present land revenue rates in Lower Burma tend to approximate to one-third of the rental value and we are of opinion that under the conditions now obtaining there the settlement officer may usefully bear this proportion in mind. But we are all agreed that the revenue demand should so far as possible be governed by financial requirements. The wide fluctuations of prices and the change in the value of money during the last few years indicate the great need for caution in imposing limits to demand. With a general rise of prices the expenditure of Government must grow and the burden of land revenue decrease. In Bombay the difficulty resulting from the restriction imposed there was represented to us very strongly. These considerations apply with less force to temporary limitations of the increase by the deferment of enhancements. On the contrary, the larger the total increase regarded as permissible, the more does it become necessary to provide against sudden large enhancements. We consider that our proposals for granting rebates should afford sufficient protection for individual interests against those of the general community, and we are unable to recommend that any positive limit be imposed on the total enhancement.

Carried to a logical extreme the principle that the demand should vary with financial needs would result in annual settlements. This is forbidden by practical convenience. It seems, however almost beyond question that the gradual increase of popular control which it is necessary to anticipate will encourage the growth of Government expenditure, both by the substitution of a more expensive mechanism for the present administration and by an enlargement of the heads of expenditure. It will thus become more than ever necessary to adjust income to expenditure, which is impossible with long periods of settlement. Two alternative policies will then present themselves. On one, land revenue will be converted into a land tax of a quasi permanent nature supplemented by increased taxation, direct and indirect. On the other, the flexibility of land revenue will be increased so that its yield may be adjusted more closely to annual requirements. There are immense practical difficulties in the latter course which it is not our place to examine. But the conversion of land revenue into a quasi permanent land tax would imply a break with all the guiding principles of past revenue policy; settlement procedure would become only a matter of historical interest and all the advantages of settlement enquiries would be abandoned. The other alternative has this advantage, that the revenue system of the future could be established on the basis of current practice and tradition. Settlement procedure is an instrument for making a roughly equitable adjustment of the revenue to local and individual circumstances, and,

just as we consider it undesirable to place restrictions on enhancements, we consider it equally undesirable to appoint any formal limit for the duration of settlements. For the present we regard twenty years, the period for which settlements are now ordinarily sanctioned, as suitable.

In this connection we would further recommend that re-settlement at the expiry of the appointed period should be regarded as the normal course, that any extensions should be justified by special or local circumstances, and that the improbability of an increased revenue should not be regarded as sufficient justification for postponing re-settlement. We would note however that in view of the generally unstable condition of markets it seems necessary to contemplate the possibility of prices at the time when rates are to be introduced being lower than those assumed for the purpose of framing rates; in such circumstances it might become necessary to postpone the introduction of the new rates.

170. While the proposals are under consideration by Government
 The Third Stage: the settlement officer will proceed with the
 Distribution. third stage of settlement. The operations will
 comprise—

- (a) The preparation of a record of rights.
- (b) The preparation of a record of classification and the revision of the former assessment classes so far as necessary for improving the distribution of the demand and simplifying assessment.
- (c) The conduct of crop measurement, where necessary, and also of such further miscellaneous enquiries as may be required.

171. For preparing or revising the record of rights, and for the classification of soil, the settlement party will, as
 The record of now, be organized in sections. The assistant
 rights and record of settlement officer in charge of each section will
 classification. be the record officer; under him there will be
 record inspectors and record clerks. A detachment of four or five
 clerks will be posted to a group of adjacent villages for the initial
 preparation of the record, their work will be supervised and checked
 by the inspector and finally passed, after further check, by the
 assistant settlement officer. The procedure for the original prepara-
 tion of a record of rights is described below in Chapter XVI. The
 procedure at settlement, whether the record was being originally
 prepared or re-attested, would be the same.

While the record of rights is being prepared and inspected the soil classifiers will be classifying the soil and preparing the record of classification for the same group of villages. As the classifier completes each kwin he will supply every land owner with a written extract from the record of classification showing for each holding the local class assigned by the village assessors and any particulars regarding soil, water, crops, defects, etc., which have been entered in the record. If the headman has an assessment roll or list of holdings it might be found sufficient to enter therein the particulars holding by holding. But we regard it as important that each cultivator should have full opportunity to become acquainted with the facts and, if individual extracts are necessary to ensure this, they should be made.

172. The section officer will then visit each village to inspect the record of rights and the classification. He will see that everyone understands what has been taking place and has had full opportunity to acquaint himself with the record and classification. Ordinarily he will inspect the record one day and the soil classification on the following morning, and will thus be able to instruct those who object to the classification of their land, or to any of the details regarding soil, water, crops, defects, or local valuation, in the classification record, to accompany him when he visits the kwin. Before visiting the kwin it will often be convenient for the mortgage values and rents to be entered on the map as a guide to the classification; the utility of recording either or both will vary from district to district, and the practice must be left to the discretion of the settlement officer. The section officer will then visit the kwin, accompanied by the assessors, those land-owners who object to the classification, and any others who like to come. He will check the classification, consider the objections and make such corrections as may be necessary, either of his own motion or on the representations of the people, and then pass the classification as correct. Land-owners, who have appealed to the section officer against either the record of rights or the classification, should be instructed that they may appeal to the settlement officer, if the section officer has not allowed their appeal. The total assessment and the incidence per acre for the village at the current rates on the existing classification, and the corresponding figures as estimated by the settlement officer when formulating his proposals, will already have been calculated during the first year of settlement. By this time the assessment sanctioned for the tract by Government should be known, and the section officer should revise the original estimates according to the sanction, and at the same time calculate the assessment and incidence at the proposed tract rates on the revised classification. These estimates and calculations will be summarised in a form, in which he will also record his final estimate as to what the village should pay and such other information as the settlement officer requires concerning the suitability of the tract rates, the grouping and the assessment classes.

The preparation of the record of rights and the classification of the land would form the routine of settlement work during the second and succeeding years of the operations. But it would be necessary partially or totally to suspend work of this nature during crop measurement. Such other enquiries as might be required in connection with cost of cultivation or tenancy or land alienation would be carried out to some extent by selected section officers but chiefly by the settlement officer himself.

173. It remains to describe the work of the settlement officer during the final stage of settlement. After explaining the lines of classification to the staff he will visit the sections in turn. He will receive from the section officer the form already described, comparing the various estimates for the total assessment, the incidence per acre, and the rates for each assessment class. He will consider these figures and notes, with reference to the tract as a whole and

to each kwin and village, will hear appeals against the classification of the section officer, inspect personally as many kwins as seems necessary, and discuss assessment proposals informally in those villages which he visits and with representatives of all villages. After such other local examination as may be required, he will finally determine the boundaries of the tract, divide it into sub-tracts and assessment groups, and allot each kwin within the tract to the appropriate sub-tract or group. He will decide on the number of main kinds and assessment classes required for the tract, and the tract rate for each assessment class, and the group rates corresponding to each tract rate. He will then calculate the total assessment and incidence per acre for the tract, and for each assessment group, village and kwin.

An illustration of the process may make it more readily comprehensible. Take the Upper Burma Tract of 20 villages described in paragraph 167 (a) above. The settlement officer proposed an assessment of Rs. 13 250, involving an enhancement of nearly 100 per cent; the Local Government might decide that no larger an enhancement than 50 per cent. should be taken, fixing the assessment provisionally at Rs. 11,300. The provisional estimates for each village would then be cut down in the proportion of Rs. 1,325 to Rs. 1,130, or, in round figures, by 15 per cent. The section officer would frame his estimate for the assessment of each village and furnish his notes on grouping, etc. The settlement officer would then take up the final assessment of the tract. His provisional rates on dry land were Rs. 2.00, Rs. 1.50, Re. 1.00, Re. 0.75 and Re. 0.50. He might decide that five assessment classes were still necessary but that the tract rates should be Rs. 1.75, Rs. 1.25, Re. 1.00, Re. .75 and Re. .50. He would then consider each village separately, working down from the village estimate and up from the classification estimate. Of the five villages provisionally in the highest assessment group he might decide that one was inferior and should be relegated to a lower group, to the remaining four he would apply his tract rates. The inferior village could be placed in a second group with the palm tree villages and in this group he might reduce the rate on each class except the lowest by four annas. This would give rates of Rs. 1.50, Re. 1.00, Re. .75 and Re. .50. In the remaining group he might decide to reduce all the rates above Re. 1 by eight annas and the remainder by four annas; the rates in this group would be Rs. 1.25, Re. 0.75, Re. 0.50 and Re. 0.25. If the multiplicity of groups were considered objectionable it would be possible to substitute a single group with seven rates for the three groups each with five rates, but there are clear advantages in retaining the groups and the objection to them does not appear substantial.

174. If the demand for the tract, as finally decided on by the settlement officer, does not differ by more than 3 per cent. from that sanctioned, he will proceed to publish in each village a statement showing the assessment and the incidence per acre, at the current rates on the existing classification, and at the new rates on the revised classification. Against this assessment there will be no further appeal to the settlement officer; he has heard what everyone

Control over assessments: Announcement of demand.

has to say, has seen the land and made up his mind. Any further appeal to him would therefore be useless. Against individual assessments there should be no appeal beyond the settlement officer. The notice should state as plainly as possible that the assessment will not become final until sanctioned by Government, and that appeals against village assessments may be submitted to the Settlement Commissioner either direct or, for convenience, through the settlement officer or deputy commissioner; and that appeals will be time barred unless presented within one month of the publication of the notice.

If the settlement officer, when he has finally decided on the assessment for each tract, or at any earlier stage, forms the opinion that the total demand for the tract should differ from that sanctioned by more than 3 per cent., he will postpone publication and submit the papers to Government fully explaining the grounds of his opinion. Although it does not seem likely that proposals to modify the assessment provisionally sanctioned will often be necessary, they should be freely permitted and even encouraged until experience has reduced the new procedure to routine. The original estimates are made by the settlement officer on the material available at the time; if fuller knowledge renders any modification desirable he should revise them without hesitation. In such cases, after the orders of Government have been obtained, he will publish the assessments in the manner described above.

As each tract is completed the settlement officer will submit to the Financial Commissioner through the Settlement Commissioner a statement (similar to that now compiled in Office Form J) showing for the whole tract and for each sub-tract, assessment group, village and kwin, the former demand and incidence per acre, the demand and incidence according to his original proposals as provisionally sanctioned by Government, and as finally proposed. In this statement, which should be submitted in print, attention should be drawn to any village where the proposed estimate differs by more than 25 per cent. from the estimate provisionally sanctioned, and the variation should be explained. The Financial Commissioner would then pass orders on the proposed assessments and any change made in the assessments already published would be communicated to the villages concerned. There would be no appeal against these orders, but the power to revise them would, as always, rest with the Local Government to be exercised either on representations made or of its own motion.

We have considered the alternative of delegating to Divisional Commissioners the powers of the Financial Commissioner. The comparative assessable capacity of villages is a matter on which the Divisional Commissioners and Deputy Commissioners could, and probably would, have an opinion. But the proposals rest on an expert study of soils and economic statistics, and, apart from all technical matters, the acquaintance of a settlement officer with local conditions regarded from the standpoint of assessment must be more intimate than that of the Deputy Commissioner. It does not appear sound therefore to give the Divisional Commissioner any degree of final control over settlement operations. We have also considered the desirability of submitting the proposals through the Deputy Commissioner, Settlement Commissioner and Divisional Commissioner to

the Financial Commissioner. But the participation of the Deputy Commissioner and Divisional Commissioner would often be a formality and sometimes causes much delay. We are of opinion therefore that the tract proposals should pass through the Settlement Commissioner only, leaving it to the Financial Commissioner to obtain such assistance from the Divisional Commissioner and Deputy Commissioner as he might require.

175. During the recess detailed assessments by holdings would be worked out and for each landholder would be prepared an extract showing the entry regarding his land in the record of rights, the assessment for the latest year at the current rates on the existing classification and the main kinds, assessment classes, and rates on the classification as revised. The record of rights would also be used to prepare the assessment register for the current year. In Lower Burma it is necessary that this work should be carried out during the recess because the field season is so short and during the rains there would be little other employment for the staff. But in those parts of Upper Burma where field work is possible throughout the year, all the work might be carried out in the field. The recess work would largely consist in the preparation of registers for the use of the land records department in the following season and it should be possible to associate the land records staff with the settlement staff in this work and in the preparation of the individual extracts from the record of rights. The land records staff would work under the supervision of the superintendent and the general control of the settlement officer. The superintendent would be gazetted an assistant settlement officer for the period of settlement and would receive an allowance as such. There would be little other office work and in particular the laborious compilation of the cropped area statement, by far the heaviest task in compilation, would no longer be necessary. We have been unable to discover any sufficient reason for the compilation of this statement in its present form, except where, as is contemplated in the Instructions and as was done in the Meiktila and Myingyan settlements, the settlement officer bases his figures for net produce by assessment classes on the proportional area of land in each class cultivated with different crops. The omission of unnecessary enquiries in the field would further diminish the burden of compilation. Thus, apart from the preparation of individual extracts from the record of rights for each land-owner, the office work would be greatly reduced.

176. When preparing the individual extracts from the record of rights the settlement officer would calculate and endorse on them any concession due under the rules relating to deferred enhancements. At present the rate applied to any class of land at a revision settlement may not exceed the rate under the expiring settlement by more than 50 per cent. The temporary rates are notified and applied in the usual manner. Where land is in the same assessment class before and after settlement the procedure is suitable, but if any land has been raised or lowered in class the resulting assessment is difficult to justify. Suppose, for example, that before re-settlement the rates on first class land and second class land respectively are Rs. 3 and Re. 1, and after

resettlement Rs. 5 and Rs. 2.50. Then 10 acres of land in the first class will be liable for Rs. 30 before settlement and for Rs. 50 temporarily reduced to Rs. 45, afterwards. Similarly 10 acres in the second class will be liable for Rs. 10 before settlement and for Rs. 25, temporarily reduced to Rs. 15, afterwards. But 10 acres of land, which has been raised from the second to the first class and was paying Rs. 10 before resettlement, will become liable to Rs. 50 after settlement, and immediately be required to pay Rs. 45. Ten acres of land reduced from the first class to the second class, however, and paying Rs. 50 before resettlement, will be liable to Rs. 30 after resettlement, but temporarily will only be required to pay Rs. 15. Cases similar, though rarely so extreme, are not infrequent, and the inequitable result has led to experiments in the direction of granting rebates by holdings. We are of opinion that this is the correct course but that the new assessment should be calculated by the settlement officer. Where the enhancement on any holding exceeds one-third of the current assessment, the rates on each assessment class in the holding should temporarily be reduced, so that the immediate enhancement does not exceed this limit; the balance should be taken at the end of every fifth year by instalments not exceeding the original enhancement. This would obviate the necessity for requiring the revenue surveyor to carry out the somewhat involved procedure for calculating rebates which has been laid down in Part F, Chapter XV of the draft new Land Records Manual. We consider however that the rule proposed there, for disregarding enhancements when the total new demand does not exceed Rs. 3, is useful and should be adopted. We have considered a suggestion that the concession should cease on the transfer of a holding. This would involve calculations on the part of the surveyor which, as explained above, we deem it expedient to avoid, and we are of opinion therefore that the concession should pass with the land irrespective of ownership.

177. We have noticed in Chapter IV that the rules for the exemption of improvements have been found so difficult to apply that they have usually been neglected. Where land has been improved to an extent that permits it to be placed in a higher assessment class, the land owner is entitled to exemption from enhancement until the increased yield has paid for the improvement with interest at 12 per cent. This entails complicated calculations. One method of evading them has been to retain the land in a lower class, but this stultifies the classification and is further open to the objection that the cultivator is not clearly made to understand that his industry has been rewarded. The simplest expedient is probably to classify the land as it stands after the improvement but, for the period of the settlement, to allow a rebate of the difference between the assessment on the land before and after the improvement, giving the land owner a certificate to this effect. This concession may appear excessive in cases where the improvement dates from the earlier years of the expiring settlement and its cost has already been recouped. But an investigation into the date when the improvement was effected would be tedious; we hold it important that the rules should be simple for the settlement officer to apply and easy for the cultivator to understand. In Madras and

Bombay improvements receive permanent exemption from enhancement; without going so far as this we are of opinion that the concession now recommended, which agrees with the practice in the Central Provinces, will afford a suitable recognition of the risk undertaken and expenditure incurred by the land owner, and should provide a reasonable stimulus to industry. We would note in this connection that paragraph 481 of the Land Records Manual may be, and sometimes has been, taken to sanction reclassification during the currency of a settlement of land which a private owner converts from dry land into rice land by embankment and irrigation. This does not seem to have been the intention and the paragraph should be amended.

178. The last stage of settlement operations will consist in the The Final Report. Financial Commissioner sanctioning the assessments for the last tract. After this the settlement officer will submit a final report which will comprise—

(a) a brief summary of the orders on the original assessment proposals and of any modifications in these orders during the course of settlement, together with a description of the manner in which the orders have been applied;

(b) a statement showing for the district as a whole and by twins, villages, assessment groups and tracts the former demand and incidence per acre, and the new demand and incidence as originally estimated by him, as provisionally sanctioned by Government, and as finally sanctioned by the Financial Commissioner;

(c) statistics of crop outturns and cost of production with a full justification of the assumptions. The crop measurement should be critically examined and the value of the experiments on different soils and in different neighbourhoods considered in much greater detail than is possible on the present procedure. From the settlement point of view these statistics and the explanation of the assumptions would chiefly be useful to the succeeding settlement officer. But they would have an independent value of their own and it would probably be worth while to print them separately for use by the Agricultural Department and distribution to others interested. In this analysis the settlement officer should estimate the normal yield of the district under each important crop with suggestions as to probable variations under different seasonal conditions;

(d) a summary of any instructions to the district officers with regard to the administration of the settlement and a list of the volumes made over to the land records department, giving against each a brief description on its contents.

179. The settlement procedure contemplated in this chapter comprises three stages. In the first the settlement officer, on a study of previous settlement reports and material compiled from the registers of the land records department, summarising the agricultural and economic position at the last settlement and its subsequent development, lays down provisional tracts. The section officers then examine village by village the equity of the current assessment, and on the basis of general information verified in the field regarding rental and land value and other matters, and of the crop experiments at the past

and present settlements, and after a somewhat close inspection of about one kwin in four, note where the classification appears erroneous, or to need greater refinement or less. At the same time they make enquiries into the cost of cultivation and supervise the verification of the annual land records statistics which the settlement establishment will undertake. Through their reports, and from his own tours, the settlement officer obtains a general conception of the conditions. He then frames, for the settlement area, and for each tract separately, an estimate of the outturn, based on his experiments and enquiries and on general information regarding the exports, output of mills, etc. He checks this with the detailed estimates, village by village or kwin by kwin, framed by his assistants under his supervision and advice. From the corrected estimate he deducts the cost of production and thus arrives at the theoretical assessment based on the rental produce. He works out the rental value for the tract and considers the theoretical assessment in the light of present and former rental sale and mortgage values, and the current incidence. He thus arrives at what would appear on general considerations to be a suitable assessment for each tract and for the whole settlement area. He then considers the detailed estimates of assessable capacity kwin by kwin or village by village framed by himself and his assistants, and in the light of these revises where necessary the assessment arrived at on general considerations. He then submits during the first recess his proposals for assessment, and for the further conduct of the settlement. In the second stage his proposals are published, and considered in conference, together with any criticisms which may be received, and are then submitted for the orders of Government. In the third stage the settlement officer classifies the soil and forms assessment classes, fixing for each assessment class in the tract a normal revenue rate. He arranges the kwins of the tract into assessment groups, ordinarily three; within each group the same assessment class carries the same rate. If at any time on further consideration he forms the opinion that the total assessment in a tract should differ by more than 3 per cent. from that provisionally sanctioned by Government he submits revised proposals for orders. In other cases, he announces the demand in each village, and submits his final proposals, tract by tract, as each is completed, to the Financial Commissioner for sanction, drawing attention to any village where the assessment finally proposed differs by 25 per cent. from that provisionally sanctioned. On receipt of orders from the Financial Commissioner the individual assessments are calculated for use by the Land Records Department in the season following that in which the enquiries were made and the village demand announced.

180. It is perhaps necessary to meet here one probable criticism on the procedure suggested; that the orders of Government sanctioning the assessment are based on an estimate framed by the settlement officer at a time when he has little acquaintance with the settlement area, and that he is given a free hand in adjusting his rates and classes to produce a demand which has been sanctioned on inadequate data. To this criticism there are three answers, that the material available to Government when passing orders will be far more adequate than at present, that the degree of control which can be exercised over the

settlement officer will be much closer, and that the resulting assessment will be more equitable.

At present the value of the gross produce per acre is calculated by assessment classes and the net produce standard is ascertained by subtracting the cost of cultivation. The theoretical rates representing half the net produce for each assessment class are compared with one-fifth the gross value, and one-half the rental value. As already explained the figure assumed for the gross value is fictitious except in areas of secure rice land, because it varies with the cropped area for the year. On the procedure now advocated fluctuations from year to year in the area under various crops will be eliminated by the calculation of a normal figure and the estimate of outturn will be verified from sources not utilised at present. It will be checked by estimates made locally village by village of the actual outturn as compared with the outturns deduced on the assumptions of the existing classification. Since in framing these estimates the figures showing the rents paid on the fixed produce system will be available over large areas in Lower Burma, the estimates should be approximately correct; even on secure rice land the estimate of gross produce should be as accurate as at present, and with insecure and mixed crops the estimates should be far more accurate than they are now. Again, the figure for cost of cultivation as now calculated, even so far as it correctly represents the arithmetical average of actual money outgoings, is meaningless; the figure for cost of production would be a reasoned estimate of the true cost. The theoretical maximum assessment based on the rental produce would therefore be more valuable as a guide to assessment than the present standard of half the net produce. Then on the present system the settlement officer tabulates the gross value and rental value for comparison, but often makes very little use of them in framing his proposals and gives very little explanation of the considerations which have carried weight with him; nor is he required to consider the effect of his proposals by kwins and villages. On the new system he will have considered the probable effect of his proposals for each kwin and village separately when framing his estimate for the tract, and will endeavour to explain how considerations regarding rent and land values, and the current incidence, require a modification of the theoretical rates for practical assessment. Government therefore, when considering the proposals, will have much more information and a more secure basis than at present.

We do not pretend that the settlement officer will know so much about a district after one year as he now does after three, nor be in a position to adjust his rates so nicely. But we are unable to discover any practical alternative free from more serious objections. It is desirable that the settlement officer should have a long time to study the district before framing his proposals and also that he should have a long time for distributing whatever assessment may be sanctioned by Government; but it is not possible to allow a long time for both. Where, as in the Punjab, agricultural conditions are comparatively uniform and the distribution is largely conducted by the people themselves, it is possible to expedite the second stage of settlement and to devote longer to the first. This would also be possible where classification was permanent, or if a permanent record of soil and water such as we

recommend was already in existence to show where reclassification was needed and to what extent. But in Burma at present distribution must be a detailed and lengthy process, as must the preparation of a record of rights. The difficulty cannot be solved by reducing the area for settlement. The only practical solution seems that which we recommend. In the past, on far less adequate material, radical changes in the assessment proposals have frequently been made by Government, not only in the total demand but in the distribution between class and class, and tract and tract, thus disturbing the balance of assessment which the settlement officer has based on intimate study in the field; after these changes have been made in the proposals the resulting assessment has been applied as a matter of course by the land records department. We have no hesitation in claiming that the assessments provisionally sanctioned by Government on the new procedure will be far more suitable than those arrived at under the old, and that in most cases the settlement officer will be able to apply them with a few minor adjustments.

Under the existing system the settlement officer frames the soil classes and assessment classes, adjusts his rates, and carries through the settlement to the end with very little guidance or control except for that exercised, for the most part informally, by the Settlement Commissioner during his tours of inspection. The new procedure without fettering the settlement officer's discretion will permit from the beginning a much closer control over the assessments and the general procedure.

That the resulting distribution would be more equitable hardly requires argument. Although as a rule we have abstained from referring to the evidence in detail, the statements of Mr. Rees, Settlement Officer, Mergui, on this matter are convincing. He explains how large local variations may be concealed within small variations over a tract taken as a whole; how assessments may look lenient and be severe, and how he tried to classify a kwin leniently but failed. These difficulties have frequently been experienced. In the report on the Myingyan settlement, the figures in Report Statement 24 compare present and proposed assessments by small assessment groups. In Tract II in Myingyan township there was a small total increase despite large enhancements in Assessment Groups IIB-3 and IID and a large reduction in Assessment Group IIC-1. The same statement contains many other illustrations of the same thing. Where the settlement officer adjusts his tract rates to local circumstances at the end of the operations with all the material before him, he can hardly fail to effect a more equitable distribution than when, as at present, he assigns two different soils to the same assessment class before he has ascertained the relative productivity of the two soils, or decided what rate the assessment class will bear.

181. We have claimed for the procedure here outlined that it will promote a juster appreciation of the data for assumptions, a closer control by Government over the demand, and a more equitable distribution of the assessment. The collection and analysis of statistics is a science, the fixing of demand is a matter of financial policy, the

Advantages of proposed system.

distribution of the assessment is an art; our procedure recognizes these distinctions. The settlement officer collects and analyses his material, then in the light of his knowledge of the settlement area, village by village and kwin by kwin, derived personally on his tours of inspection and at second hand through his assistants, he tests his assumptions and submits his recommendations. Government scrutinizes the data for assumption and the conclusions drawn from them and after considering the recommendations of the settlement officer fixes the demand. For distribution it is possible to lay down principles but (except on matters of procedure) not rules; in distributing the assessment the care and judgment of the settlement officer are all important, and to obtain an equitable distribution it is essential that when making it he shall know exactly what he is doing. On the existing procedure he cannot know this, on the procedure now proposed he can.

But the new procedure has other advantages; while making the fullest use of the material available for scientific analysis it recognizes the limit of scientific method and makes no pretence that the assessment is calculated by arithmetic, nor does it encourage settlement officers to invent devices to "comply with the fraction while still keeping the rates within the bounds of decency." It also provides a better training for assistant settlement officers, who will for the first time be given a share of responsibility in the final process to which all settlement operations lead, the fixing of the assessment. It relieves settlement officers of a great burden of useless work in connection with the enquiries into cost of living, thathameda, agricultural indebtedness, tenancy and land alienations, and such matters, while providing for full enquiry into any which is of local importance, if the settlement officer has sufficient time and interest in it to obtain useful results. It also lightens his work in connection with the compilation and tabulation of statistics.

On the other hand, the preparation of the record of rights and of the record of classification will entail extra work, and will undoubtedly be found difficult. As regards the record of classification two or three experiments may be required before a satisfactory result is achieved. In other provinces the classification of the soil according to its physical constitution and position has been gradually evolved and we cannot expect immediate success in Burma. We have given our reasons for regarding the attempt as necessary and consider that in the long run it will prove an economy. Our reasons for recommending the preparation of a record of rights are given below in Chapter XVI. We are of opinion that if a settlement officer is relieved of useless work in the manner which we advocate, the preparation of these two records should not be found to render settlement more arduous nor more costly than at present. The proposals may appear to involve a radical change in the nature of settlement operations. It must be admitted that, superficially regarded, they do. They treat settlement as a matter of facts and not of figures. But the subordination of facts to figures, except perhaps during the period covered by the first revision settlements of Lower Burma, has always been largely a matter of form. In the words of Sir Charles Crosthwaite "the Settlement

Officer erects his golden image in obedience to the rules laid down for him but he refuses to bow down to it.¹" We have noticed how the reaction against the arithmetical conception gathered force, until, in 1917, Mr. Arbuthnot developed a scheme for a new procedure. That scheme we have built on, and our proposals represent therefore a development, logical, and sooner or later inevitable, of the orthodox principles of settlement in Burma. While retaining the tradition of numerous experiments, wide spread enquiry and close association with the cultivator, which have been the strength of Burma settlements, and restoring the flexibility of the former Lower Burma system, we have recognized that the exceptional period of 1870 to 1905 has definitely closed, and that the time has come to devise a new procedure to meet the new conditions. In fact the procedure is not new. Its source may be discovered in the papers relating to the first draft of the Directions for Original Settlements in Lower Burma and the first draft of the Directions to Revision Settlement Officers.

1. Review of the Report on the Settlement of Mandalay District, 1888-89.

CHAPTER XVI.

THE LEGAL RECORD.

182. The sketch given in Chapter VI of the development of the present register of occupation and of the manner in which it is prepared has shown that the attempt to make it serve a three-fold purpose as a fiscal, statistical and legal register has not been entirely successful, and that the present Register of Holdings no longer purports to be a Record of Rights either in Upper or Lower Burma. The enquiry into tenures held at settlement was of a summary description; in Lower Burma it was simple and of little practical importance, but in Upper Burma the difficulty of ascertaining the facts necessary for arriving at a decision, and the difficulty of applying them to an unsuitable definition of state land, often resulted in broad decisions on general principles regarding large areas, without an attempt to ascertain individual rights in detail. Apart from the enquiry into tenures there was a bare enquiry into the nature of the occupation, whether the occupant claimed as owner or mortgagee, but no investigation of the origin of his title. There was no attempt to record rights other than the right to occupy for cultivation or to demarcate or record public lands otherwise than as survey details. Again, in discussing the accuracy of the present registers, it is essential to remember that a very large proportion of the land, not in Lower Burma only but also in Upper Burma, has been brought on to the registers by the revenue surveyors during the currency of a settlement and in such cases the record has not ordinarily been scrutinized at all. In Myingyan the area registered as occupied at the summary settlement was 826,000 acres and in 1910-11 it had grown to 1,189,423 acres. In Myaungmya the area in the register was 586,559 acres at the time of the second revision settlement in 1904-05 and 764,960 acres at the third revision in 1918-19. Thus the registration of at least one-third, possibly of more than half, the land in Lower Burma and of a considerable area in Upper Burma has never been verified by a settlement officer.

183. The accuracy of the registers is further prejudiced by the precautions against improper changes. The surveyor is only permitted to effect a change in the record of ownership on the report of the parties interested, or under the authority of a court; this precaution is also observed in regard to non-usufructuary mortgages. With usufructuary mortgages however the surveyor records the particulars of occupation according to the statement of the mortgagee in possession. If the original entry is correct, the transfers effected by a registered document, and the transactions correctly reported and brought on to the register, the record serves as an accurate register

of title which becomes stronger with the lapse of time. But at every stage there is a chance of error. If a transfer which requires registration is registered, no verbal report need be made and the mutation is effected on the registered deed. But if such a transfer is reported, the mutation is effected even although the transaction has not been registered. Many transactions are neither registered nor reported. In registered documents and in the orders of civil and revenue courts the land is frequently insufficiently or inaccurately described, or described with reference to the map and register of a previous year so that identification by the surveyor in the current register is difficult. There is often much delay both by courts and registration offices in communicating to the surveyors the particulars regarding transfers. In many cases, especially in Upper Burma, transfers which are registered as sales or mortgages by verbal agreement, and for this and other causes a discrepancy is always possible between the transaction reported to the surveyor and that described in the registered document. The Instructions require that effect shall be given to the registered document, and that, if any difficulty arises, the superintendent of land records shall call upon the transferee to establish the interest of the transferor. Thus, even where the original entry in the registers is correct, whenever a transfer takes place it may become inaccurate, or unsustainable at law, or both. It is alleged that the surveyor not infrequently refuses to take cognizance of mutations reported to him because the parties refuse to pay him a fee. On the other hand there are numerous cases in which the surveyor is aware of the true facts, and notes in the column provided for remarks the correct particulars which the rules forbid him to enter in the column regarding title. There is much conflict of opinion regarding the accuracy of the registers in Lower Burma and it is a subject on which the members of this Committee hold divergent views. One view is that the proportion of erroneous entries regarding ownership in Lower Burma is very low, almost certainly less than 5 per cent. possibly much lower; the other view is that the proportion is much higher. The difference of opinion may be due to experience in different districts. In Upper Burma, however, although changes are much less numerous, the proportion of error is much higher, and in many villages the collection of revenue is only possible because the headman of his private knowledge can interpret the erroneous entries in the tax receipts. This however is due less to defects in maintenance than to the summary nature of the original enquiry at settlement. Both in Upper and Lower Burma if an entry has once become incorrect, it is a difficult matter to correct it.

184. It is very doubtful how far officers of the Land Records Department are empowered to correct an erroneous entry in the registers

without the express consent of any party who would be prejudicially affected by the alteration, and there has been some question as to the powers of revenue officers in this respect. In 1901 it was definitely laid down in Maung Ba and one *versus* Maung Mo and one, 1 L.B.R. 124, that the civil court had no jurisdiction to make a decree ordering mutations of names in revenue registers, as this was a matter to be regulated entirely by revenue officers. As the name entered in the

The record in
civil courts.

register of occupation ordinarily purports to represent the owner, and the question of ownership is a matter for the civil courts. Little is gained by a separate application for the mutation of name, and in the event of a dispute as to the name which should be entered in the land records registers, the revenue officer as a rule postpones action until the orders of the civil courts have been obtained. Formerly however it was the general practice for revenue officers to deal with disputes concerning the occupation of land in respect of which neither party had acquired the status of a land holder. It has been held by the Chief Court of Lower Burma that the final decision in such cases lies with the civil court and in 1915 Land Revenue Direction 2 was amended in accordance with this ruling. The direction now reads as follows :—“ The nature of the claim made must be considered in determining whether a particular claim should be heard by a Revenue Officer or a Civil Court. When a claim is made against Government either to establish a title in land or to occupy waste land, the claim should be dealt with on the revenue side. In other cases the applicant should be referred to the Civil Court.” This has sometimes been interpreted to mean that in the event of disputed claims to the insertion of a name in the assessment registers, the parties should be referred to the civil court, and has also been held to debar the state from evicting either party even although the occupation may be objectionable. This interpretation may give rise to hardship even when land has long been occupied. For example if a surveyor finds a man cultivating land inherited from his father and, as may very well happen without any dishonest intention at the time, enters his name as sole owner in the register of holdings, co-heirs can only be entered at a later date by the express consent of the man first registered and after some years may find difficulty in enforcing their claim. Where new land is taken up over large areas, there is wide scope for malpractice and mistakes. A dishonest surveyor may register the name of the wealthiest claimant, overlooking the claims of the actual occupant, who may be required after a few years to defend his title in a civil court in the face of adverse entries in the register. The legal effect of the entries in the present registers is not free from doubt. It has been laid down in *Maung Ya Gyaw versus Ma Ngwe*, II, L.B.R. 56, that in the absence of evidence proving the contrary, it should be taken that the persons entered as holders of land on a settlement map were in possession of it at the time of settlement, and also “that, being in possession it must be presumed under section 110 of the Evidence Act that a person entered as holder was the owner of the holding at the time.” The matter has been further discussed in *Mi Sa U and 4 versus Nga Pyan*, II, U.B.R., 1904—05 Ev. 3, and in *Mi Se Baw and 2 versus Mi Min Ya and 9*, II, U.B.R., 1907—09. The present position appears to be that entries are admissible in evidence, but that their probative value must be decided by the court in each case. It not infrequently happens that subordinate courts attach more weight to entries in the land records registers than these deserve and, even in the higher courts, the degree of weight appears to the layman to vary in different cases. Where a subordinate of

the land records department, carelessly or fraudulently, in contravention of the rules, makes or changes an entry in the register of holdings, it would seem appropriate for the injured party first to petition the superintendent of land records or a revenue court for the enforcement of the rules to enable him to go before the civil court with the additional strength given by the entry of his name in the registers. The introduction of a record of rights would prevent such cases arising, but pending the introduction of a record it appears desirable that the direction which we have cited should be amended to make clear what we consider the intention of Government, namely, that revenue officers have power to alter entries in the register of holdings, and to evict those who have not acquired a right against Government when their occupation is objectionable.

185. We have mentioned that the register prepared at settlement failed to afford adequate protection for public rights. That perhaps was almost inevitable in Lower Burma when cultivation was extending and the conditions were changing so rapidly as during the period of original settlements. In most countries public rights are protected by custom, but nowhere in Burma has custom been strong enough to protect public interests against private encroachments; in the scattered hamlets of Lower Burma occupied by recent immigrants custom as an influence protecting the community did not exist. The need for preserving residential areas was recognized by Captain Fitzroy and by the Revenue Committee of 1872 and provision was made in the various sets of rules which they drew up. Provision was also made in the draft Directions of 1879, but those recognized, as the former rules had not, that the question presented practical difficulties and, on this ground, the Directions as finally issued in the following year permitted the postponement of demarcation until after survey. It does not appear that any village sites were actually demarcated under these Directions. Over the large area of new land brought on to the register by surveyors, there has been no systematic attempt to provide village sites. In not a few cases where cultivators have established a village they have been evicted by a non-resident land owner who has acquired the village site by paying land revenue on it as cultivated land. Again, where cultivators are dependent for rice cultivation on a tank, they are liable to interference with their water supply by the encroachment of cultivation on the tank bed. Many difficulties are involved in connection with such public rights which have not yet been faced. Here again it must be remembered that, even if the settlement officer had faced and disposed of them at the time of the original settlements in Lower Burma, there would still remain the large tracts of country in which the operations of settlement have been confined solely to assessment.

186. It seems clear therefore not only that, as is admitted, the present register of holdings must be regarded solely as a fiscal and statistical register, but that great difficulties will be encountered in attempting to compile a record of rights. Perhaps the chief argument for undertaking this is that, so long as there is a registration of ownership

and occupation so elaborate as the present register, it must and will, in common sense, despite all disclaimers, be treated generally as a record of rights. That, even by Government, the present register is not in fact treated solely as a fiscal and statistical register is shown by the elaborate provisions relating to mutations; in the subordinate civil courts it is often accorded weight which could only attach to a record of rights intentionally prepared and maintained as such; and among cultivators generally it is accepted as a record of rights. It must be recognized that it has, and on the whole deserves, a degree of credit, to which Government has contributed by purporting in the first instance both in Upper and Lower Burma to prepare a record of rights, and still indirectly in many ways supports. Again, it has repeatedly been proved that the protection of public rights cannot safely be left to private initiative unless custom is strengthened by a record and supplemented by positive law. Thus the present register fails as a record of rights because it has come to be regarded by Government as mainly fiscal and statistical; it fails as an assessment register because it was originally designed as a record of rights and still betrays the original intention. To treat it solely as an assessment register without devising some new form of record is not a practical solution because the large body of cultivators will continue to regard it as a record of rights. There are two alternatives; one is to convert the present register into an assessment register and at the same time to introduce some machinery which would take its place in general estimation as a means of proving title, the other is to build on the present register an adequate record of rights.

187. It has been suggested that the present register might be supplemented by legislation on the lines of the Torrens system in force in Australia. We cannot claim to have made a close study of this system, but we have read the discussions which took place when the proposal to introduce it in Burma was recently circulated for criticism. The system, as we understand it, is one of voluntary registration with a view to obtaining a clear title. Anyone may apply for a certificate that he has a clear title to certain land. After publication and such enquiries as may seem necessary to safeguard all interests which might possibly be affected, the applicant, if he is found entitled to the land, receives a certificate that he is the owner. When a certificate has once been issued the person whose name appears in it is the owner of that land beyond possibility of question he holds a clear title. If a man buys the land without obtaining the certificate and ensuring that his name is duly entered therein, he may be dispossessed at law by anyone whose name appears in the certificate. If there are two heirs to certain property and the name of only one is entered in the certificate, the other has no longer any claim to the land and has no remedy except a suit for damages. The certificate, and all transactions affecting it, are registered by a procedure similar to that employed in registering documents in Burma. The distinction is that instead of a registration of deeds there is a registration of title. Something of this nature seems to have been contemplated in the section of the Lower Burma Land and Revenue Act of 1876 relating to certificates regarding the status of a land holder. A similar

procedure might at one time have developed out of the potta system, when the man who held the potta was regarded by many as necessarily the owner of the land covered by it. It is understood that registration of title on a very similar principle has been successful in the Federated Malay States. There would however seem likely to be much difficulty in introducing it on the basis of the present register of holdings. In any case this expedient does not obviate the difficulties now arising from the defective record of public rights. The first step therefore seems to be the introduction of an adequate record. It might be expedient to supplement this by some system of voluntary or compulsory registration of title, but that question does not call for immediate solution. The difficulties of preparing a record may be great but they have been faced everywhere in India, except in Madras, and we consider it fully time that a correct record of rights should be undertaken in Burma.

188. The Record of Rights in India ordinarily comprises both Private and Public Rights; the former are recorded individually and the latter for the village rights in India; as a whole. This record serves as a basis for (a) Compilation. the annual assessment and statistical registers. The most complete record is that prepared in the Punjab. The more important documents are:—

(i) the Jamabandi or Register of the holdings of the owners and tenants showing the field numbers, the revenue due from each owner and the rent payable by each tenant;

(ii) the Shajra Nasb or Genealogical Tree of each owner for at least three generations. At re-settlement each entry is traced back to the ancestors of the existing owners who were alive at the previous settlement;

(iii) a Statement of Rights in wells and other sources of irrigation;

(iv) a Statement of Village Customs showing Rights and liabilities. This includes a record of all land used for public purposes including village sites, roads and rights of way. If a path has no distinct limit it is taken as three karams (about 16 feet) wide. If a right of way shifts from year to year, a note is made regarding each field crossed;

(v) a list of Revenue Assignments,

(vi) a Village Map, on which village sites and roads are distinctively coloured.

During the settlement operation the patwari or village surveyor prepares for each separate occupancy, corresponding to the Burma holding, a khatauri slip or extract from the previous register showing the holding number, owner, mortgagee and tenant corrected up to date. Copies are distributed to owners, mortgagees and tenants and all the entries are attested first by the field kanungo (revenue inspector) and then by the naib tahsildar (deputy mvoalk).

Page 175 (last line).—Cancel "the Assistant Settlement Officer" and substitute "an Assistant Collector (Settlement)."

an assistant collector (settlement).

patwari also prepares revised statements of irrigation rights and of village customs. The settlement officer is not required personally to verify the accuracy of the individual record of private rights; this is completed by the final attestation of the assistant settlement officer, but he is responsible that the work is properly carried out. Settlement officers are particularly enjoined to bear in mind that the record work is of even more importance to the welfare of the people than the assessment, and that its accuracy should not be sacrificed to the convenience of their assessment work. When the jamabandi has been passed by the settlement officer and included with the other necessary documents, the record of rights becomes presumptive evidence of the circumstances which it records.

In the Central Provinces the procedure in compiling the record of rights is essentially the same as in the Punjab; it is explained in the note on the revenue system given in the Appendix and it is sufficient to mention here that the entries, unless challenged within one year, become conclusive proof regarding certain matters of public interest, and presumptive evidence regarding the remainder of the contents.

The Bombay record differs in its comparative simplicity. The starting point is the Register of Lands, re-written after every settlement. This register of lands shows for each survey number the tenure, assessment classification by main kinds, water share, public rights and easements, particulars of any alteration in the area during the course of settlement, the authority for the change and the assessment after the change. This is distinct from the Record of Rights which is prepared quinquennially and shows the occupant of each subdivision of the survey number with the revenue due from him, the nature and origin of his title, any other rights and encumbrances with the names of right holders and encumbrancers, and references to the number in the mutation register showing transactions affecting the land. One feature of special interest is that the record was not in the first instance prepared by the settlement officer nor at resettlement is he concerned in any way with revising it.

In Madras there is no record of rights but a permanent register, the Diglott, is prepared at settlement. This contains much the same particulars as the Bombay Land Register and also until recently, showed the names of all persons who, in virtue of their title whatever its nature, were in actual enjoyment of the land. It has lately been decided to omit all names from the diglott register and these are now shown against each holding only in the adangal or annual assessment roll. The revision of the adangal to bring it into accordance with actual enjoyment, together with the remeasurement of land necessary to make it accurate, is a laborious task which receives minute attention at every resettlement in Madras.

In all provinces except the Central Provinces, no changes can be made in the Record of Rights unless they have been brought on to the Register of Mutations and attested by the competent authority in the manner explained below. In Berar, the copy of the record with the patwari is at once corrected in the light of the entries in the mutation register but not the copy in the taluk (township) office. The record is rewritten every five years or oftener if necessary. The

fair copy remains with the patwari, and the old congested copy goes to the taluk office. In Bombay, the record is rewritten, in other words, the changes shown in the mutation register are incorporated in it every five years. It is only in the Central Provinces that the whole record is rewritten annually. This was attempted in the Punjab but the attempt was abandoned after a long experiment and the jamabandi is rewritten once in every four years, one quarter of the villages being dealt with annually.

In the Central Provinces, however, the entries in the annual register do not carry the same weight as entries in the original record, and do not constitute presumptive evidence. In Berar, on the other hand, the new entries in the record and in the Punjab and Bombay the quadrennial or quinquennial edition of it, as well as attested entries in the mutation register, have the same value in evidence as the original records. In the Punjab the expediency of this policy has been much questioned, and some officers have held that, although the original and supplementary record have equal weight in law, the different conditions under which the two records are prepared give the original record much greater weight in fact.

In the Central Provinces a "Register of Proprietary Mutations" is maintained in the tahsil or township office in which changes in proprietary rights, *i.e.*, the rights of zamindars, are recorded as they occur. For changes in occupancy there is no mutation register; the village surveyor annually prepares a new field book or khasra in which he enters the names of all persons cultivating or occupying land and the right in which it is held, a new jamabandi or list of persons cultivating or occupying land in the village and a new field map of the village, unless directions to the contrary have been issued by the Financial Commissioner. He receives no reports from the civil courts or the registration department and is not expected to register legal rights nor are occupants of land required under penalty to notify changes. The surveyor is expected to record the facts as he finds them existing on the ground, as evidenced by occupation and the admission of the parties. In ryotwari areas however ryots are required to notify the tahsildar of any survey number newly occupied or relinquished.

In the Punjab mutations must be reported under penalty by the parties interested and are publicly notified in the village before effect is given to them. Whenever any change takes place, the particulars relating to the holding prior to the change are entered in the register of mutations and followed by those which it is proposed to substitute, with a reference to the number and date of any document of transfer, and the price of land sold or the amount of the debt for land mortgaged. The entries are made by the surveyor but all must be attested by a naib tahsildar (deputy myoók) before they take effect, except undisputed entries regarding tenants at will. The register is prepared in counterfoil; the orders are entered in full in one foil which is sent to the township office and in brief on the other foil which is kept by the surveyor. The attesting officer is required to take special precautions that no order affecting the share of any landholder is passed without his having an opportunity to appear. Every year in most districts one or two extra naib tahsildars have to be appointed to carry out this work. Besides these mutations affecting rights, *e.g.*,

sales and partitions which may or may not affect the survey, there are mutations, such as a change of classification from well irrigated to dry land (chahi to barani), which affect the survey without affecting rights. These are annually distinguished in the Harvest Inspection Book (Field Register of Crops) by a red cross.

Every fourth year when the record of rights is revised the attested mutations recorded in the foils sent to the township office are incorporated in the new jamabandi to which they are attached. At the same time a list of the fields marked with a red cross in the harvest inspection book is compiled by the revenue inspector and sent to the surveyor. At the quadrennial revision revised copies of the genealogical tree, the jamabandi and the register of assignments are prepared. Effect is given to all the mutations attested since the preceding jamabandi and the names of tenants at will, which are not entered in the mutation register, are copied from the latest harvest inspection book. All the entries are attested on the spot by the revenue inspector and 25 per cent. are reattested by the talsildar or naib-talsildar.

In Bombay the procedure in regard to mutations resembles that in the Punjab. Mutations by registered deed and decrees of civil courts are communicated to the village surveyor, and parties interested in a transaction are required under penalty to report the matter. The surveyor is required however to ascertain all changes in possession and to keep the register of mutations up to date on the basis of possession, including unreported transactions. All mutations should be publicly notified in the village but difficulty has been experienced in giving effect to the orders on this point. Any mutation has to be attested by the circle inspector and there is a supplementary register for a summary record of disputes and the orders passed. The attested entries are incorporated in the next quinquennial edition of the record of rights, and in practice a tendency has been found to let the registration slide until the time comes for preparing a new record. Under a new system, known from its originator as the "Maxwell" system, the record of rights will be kept up to date by an index and will not require to be re-written every fifth year. Experiments on these lines have been successful and the orders of Government for the introduction of the system are now awaited. The maintenance of the record in Berar is similar to that in Bombay and does not require special notice. In Madras the procedure for keeping the assessment register (adangal) up to date resembles the procedure elsewhere for maintaining the record. In the Punjab fees are charged on mutations. The charge varies according as the mutation is made under a decree or registered document, or is due to partition, or to inheritance, or under an unregistered document. Mutations due to inheritance are charged on the total value of the land inherited; the remaining charges are on the holding. The lowest fee is two annas per holding which is the charge for a mutation effected by registered document on a holding that pays revenue not exceeding Rs. 5. The surveyor receives the whole fee in certain cases and two-fifths of the fee in others. In Bombay the surveyors collect a fee of one rupee for measuring a subdivision, but the money is paid into the treasury.

189. Thus everywhere in India, except in Madras, the preparation and maintenance of a record of rights has been found practicable. In

Special difficulties
in Burma.

Bombay it was introduced in the face of much opposition from experienced revenue officers. The system in its present form has not been in operation long enough for a final estimate of its results and, admittedly, difficulties have been encountered, especially in connection with the quinquennial revision. But these are being removed, and the record, which appears to have gained general approval, is said to have materially reduced the volume of litigation. In the Punjab also there are doubts whether the revision of the record between settlements is entirely satisfactory, and the desirability of greater attention on the part of district officers to the accurate maintenance of the record finds expression in annual reports. In the Central Provinces, although difficulty is experienced in ensuring a high standard of work in the annual revision, it is claimed that the record is maintained with remarkable accuracy. Over India as a whole there appears to be no doubt that the record of rights has conferred great benefits on the land owning community and has been found a useful instrument in revenue administration. In Madras there appears to be a growing body of opinion that the introduction of a record of rights would not only be useful but is inevitable, and experiments on this directions are now being made. One lesson in particular can be learned from Madras, that if a record is to be introduced in Burma, the sooner this is done, before the subdivision of holdings has become excessive, the easier it will be. It will be difficult enough already in districts such as Prome and Kyaukse where holdings are minute, but in the rice plains of the delta, where holdings are large and the conditions of occupancy are simple, the task, although complicated by the large proportion of non-resident land owners, will still in many respects be comparatively easy. There are however special features which require consideration. The work of annual assessment is much heavier in Burma with a system of fluctuating assessments than in India with fixed assessments, while the staff is very much smaller. Again, Burma is a ryotwari province and the Punjab and the Central Provinces are zamindari, where the unit is not the individual but the estate. More important still is the unstable character of the agricultural economy. As shown in Chapter XXIV there is no room for doubt that the annual volume of land alienation in Burma is much larger than can be found in India generally, certainly much larger than in Bombay and Berar, the only ryotwari provinces with a record of rights, and the proportion of annually changing tenancies is much larger still. It does not follow therefore that a system which has worked well in India will give equal satisfaction here. The land records staff however does at present maintain an annual register of holdings and an annual assessment register. It does not seem that the introduction of a record should necessarily increase the work of the department, on the contrary it seems possible to reduce it; arguments against the introduction of a record on the ground that there is a larger staff and less work in India lose their force if it can be demonstrated that the work occasioned by the

introduction of a record of rights will not increase and may reduce the work now performed, and we regard this as possible. Indian experience shows that a record of rights while not necessarily diminishing litigation yet alters its character. Its effect is to raise a presumption against a suitor whose name is not in the record and to throw on him in the first instance the burden of proving a title. Economically, a record of rights enables a landowner to borrow money more easily and on better terms, since the lender is assured by it of the borrower's title; similarly by the greater confidence in title which it engenders it raises the sale value of land. Moreover, the introduction of a record of rights is a step in the direction of substituting registration of title for registration of deeds, a reform at which most countries are aiming. Statistically, likewise, the record should provide more accurate figures than the present fiscal register. We find therefore that the existing arrangements for registering occupancy are defective, and that a record of rights would not only tend to remedy these defects but would have merits of its own. We recommend accordingly that the compilation of a record of rights be undertaken.

190. One feature of the record in India deserves special notice.

Title and possession. In references to the introduction of a record of rights for Burma it has generally been assumed that such a record would be based on title, and would thus approximate to the system mentioned above as obtaining in the Malay States. In India, the record is not a record of title but a record of possession. There is in fact a striking contrast in this respect between the Burma Register and the Indian Record. Speaking generally, and subject to qualifications, in India the original entry in the register depends on title, and maintenance on the fact of possession; in Burma the original entry depends on the fact of possession, and maintenance on title. It is true that in India the first entry does represent possession, but there is a more or less elaborate enquiry to ensure that no one entitled to be regarded as in possession is overlooked; no similar enquiry has been prescribed in Burma. It is true also that in Burma the maintenance does ordinarily follow possession, but, in many cases, the surveyor is debarred by the rules from bringing the register into accordance with the facts. In India changes in the record can be readily effected, but are made publicly and are carefully investigated; in Burma the procedure is more rigid, but little supervised. We are of opinion that the procedure now adopted in Burma should be modified and brought into accordance with the practice in India.

191. In India the compilation and revision or attestation of the record of rights ordinarily forms part of the settlement operations. In Bombay however, as already explained, the record was introduced independently of settlement, and it is not attested or revised at re-settlement. If a record is only introduced in Burma during settlement operations, some districts will have to wait for over twenty years. It would therefore seem necessary to make special arrangements for the record to be introduced by the land records staff of each district, supplemented so far as may be found necessary by a special staff.

The first experiment however should be made at settlement under the direction of the settlement officer.

In compiling the record two precautions are essential; firstly that as regards every parcel of land it should represent the facts as stated by the actual cultivator, or by the person whom the actual cultivator admits to be the owner or mortgagee in possession, and secondly that it should maintain continuity with the register of holdings which now exists. The statement of the occupant and the statement in the register of holdings may conflict and the procedure must therefore provide a summary method of dealing with such cases. It must also provide for the record of claims which are disallowed.

192. The first step of the enquiry regarding any parcel of land should be to ascertain the person who is actually cultivating the land during the year of enquiry, to identify the land by its local name if any, and to ascertain whether the cultivator claims to occupy the land as owner, or mortgagee with possession, or only as an agent or as tenant. The next step is to identify the land in the current register and to record a brief abstract of the information given there. The third step is to record the statement of the owner or mortgagee with possession as to the manner in which he came into possession, and also the tenure by which he holds. The fourth step is to record any encumbrances admitted by the occupant, for example, the owner's right of redemption in the case of land occupied by a mortgagee with possession, or the interest of a non-usufructuary mortgagee in land mortgaged without possession.

The clerk charged with the preparation of the record of rights will enter the foregoing particulars, obtain the signature of the parties and note the existence of any dispute. A detail which calls for notice is the matter of recording rights in trees. This is of great practical importance in some districts where palm trees are numerous and often belong to people other than the owner of the land on which they stand. Although a complete record of rights is clearly desirable, we doubt how far it will be possible to prepare a record of rights in trees. If this is found impossible it would appear sufficient in such cases, when making an entry in the record, to count the trees standing on the land which do not belong to the owner of the land, and to record a note to the effect that so many palm trees belong to someone else. The Record Inspector will then verify all the entries, paying particular attention to all disputes and to any discrepancy between the information given in the current register of holdings and the statement of the occupant. The Record Officer, who will be an Assistant Settlement Officer, or, if the record is prepared at some other time than settlement, an officer of equal standing, will then verify all disputes and discrepancies, and not less than 25 per cent. of all the entries; he will also make such further enquiry as may be necessary to ensure that the record of tenure is accurate. Record officers will be responsible that every person entered in the current land records register as interested in the land receives adequate notice of the date on which the Record Clerk will compile the record, of the date on

which it will be inspected by the Record Inspector and the date on which it will be verified by the Record Officer. Notices will also be published for general information.

193. In addition to the record of private rights of occupation, the record clerk will also prepare two supplementary records. One is a Record of Rights of User for those rights which should be recorded under section 24 (2), Upper Burma Land and Revenue Regulation, and paragraph 54 of the Settlement Instructions, such as rights of grazing or collecting firewood or other produce on land not occupied for cultivation; one similar claim of much practical importance is the claim to protect against encroachment areas required for the flow of water to irrigation tanks. The other supplementary record is a record of public rights relating to common interests in public lands, such as the village site and *upasa* or precincts, village tanks and catchment areas, roads, cattle paths and foot-paths, rights of way, etc. The record clerk should carefully ascertain and record all claims of this nature. The settlement officer will pass orders on them and have public lands demarcated so far as possible; private claims would only be demarcated at the expense of those interested. The entries in the record will then be presumptive evidence of the facts which they set forth and surveyors should be forbidden to assess such land without express orders. Demarcation should be possible in the case of village precincts, and the catchment areas of private irrigation tanks and public drinking tanks; but cattle paths and foot paths cannot easily be demarcated and rights of way cannot be demarcated at all. They should however be placed on record. As regards the boundaries of lands over which public rights are claimed, the headmen and two or three elders of the village should be required to certify at the foot of the record that they have pointed out the correct boundaries to the record clerk who would delineate them on the map after demarcation. The record of these rights will be prepared so far as possible in the same manner as the record of private rights of occupation. The record officer should combine all the above information in a Village Note Book embodying the principal heads of information now given in the following Settlement Field Forms:—

- A. Agricultural Notes
- B. Retail Prices (for market towns only).
- C. Village Customs.
- D. Village Requirements.
- E. Irrigation Works.

With regard to village customs and customs regarding the distribution of water from irrigation works, no custom should ever be recorded without an example of an instance on which it has been applied in actual practice. The Village Note Book would contain some of the information now required for the Village Sanitary Record. The latter is rarely maintained and it deserves consideration whether the existence of a separate record for sanitation is of any practical use. In the Village Note Book should be entered copies of any documents touching on village history and notes of any enquiries made into economic conditions, *e.g.*, the transfer of land, debt or tenancy.

Remarks on agriculture and retail prices would only be required at settlement.

194. The Record of Rights will be kept up to date by a Record of Mutations compiled in the township office. The maintenance of the record by an assessment register and mutation register. The decrees of civil courts, the orders of revenue courts, and registration of documents will all be reported in much the same manner as at present to the township officer or to a special record officer where such an appointment is found necessary. But provision has to be made for cases where transactions are not brought to notice by the parties. The question is complicated, but to some extent the solution is facilitated, by the necessity for preparing an annual register of assessments. If the assessment register is made dependent on the record of rights, the accuracy of the individual assessments must depend ultimately on the co-operation of the people in keeping the record up to date. It would seem possible to ensure their co-operation in a much greater degree than at present, but it still remains necessary to provide for cases where the person liable for revenue is not the person registered as occupant in the record of rights. The assessment register must be prepared annually, or even seasonally, and represent so far as possible the facts as they stand at the time. There is no reason on the other hand to recopy the record of rights annually; in fact every copy introduces possibilities of error, and it is better to leave the record so far as possible in its original condition. We recommend therefore that the surveyor shall prepare annually an assessment register in which he will enter provisionally for each holding the names of persons appearing in the record of rights as occupant or encumbrancer. The surveyor will be responsible for correcting these entries in accordance with the actual facts as he finds them in the field. Village headmen should be required to bring to the notice of the surveyor the death of any landowner. Where the surveyor finds an occupancy or encumbrance differing from that shown in the provisional entries in his assessment register, he will correct the entries in the register and enter the details of the mutation in a mutation register. At the end of the assessment season, he will forward his mutation register to the township office where the mutations will be verified and attested. In the following recess, the surveyor will prepare his assessment register for the following year, incorporating only the attested mutations. Thus the surveyor will be responsible for making correct assessments and for reporting mutations not otherwise brought to notice. His duty is confined solely to recording the facts as he finds them, he has no voice in the question of rights; if a claim is preferred to the insertion of a name in the record of rights he has no power at all of adjudicating on the claim, but if the claimant appears liable for assessment he will enter the claim in his mutation register and in this manner submit it for orders.

195. The foregoing procedure would only be necessary where the mutation had not otherwise come to notice. Mutation procedure. If a mutation is reported by the registration department it will be verified by the record officer and then entered in the record of mutations in the township office. A report by the

surveyor in his register of mutations would be treated similarly to a report from a registration office. The same procedure would also be adopted on the receipt of a civil court decree or of orders from a revenue court. The township officer (or record officer) would summon the parties, have the land verified if necessary by a revenue surveyor, and, if the parties admitted the transfer and all was in order, he would record the fact of admission and effect the mutation. In the event of a dispute, he would open Mutation Dispute Proceedings and pass orders. Such proceedings should be of a summary nature, with a very brief record of evidence and the reasons for his decision. The party who was refused registration would be referred to a civil court.

196. Any attempt to maintain a record of rights depends ultimately on the active co-operation of the people; they must recognize the advantages so clearly that they report transfers of their own motion.

Measures for promoting the accuracy of the record.

We are of opinion that, as in India, a legal presumption should attach to entries in the record; as laid down in section 44 of the Punjab Land Revenue Act, every entry should be "presumed to be true until the contrary is proved, or a new entry is lawfully substituted therefor." In the Central Provinces, entries in the record dealing with certain matters, mostly of public interest become conclusive proof if not challenged in the civil courts within one year. We do not regard this provision as suitable to Burma and, in the first instance, would allow no greater weight to entries relating to public rights than to those recording private rights. We consider that it should be made compulsory to attach to all plaints in civil suits concerning land a certified copy of the record relevant to the land in dispute together with a certified extract from the relevant supplementary survey map. A provision on the lines of section 135H of the Bombay Land Revenue Code, Act V of 1879, as amended by Act IV of 1913 will be suitable. We regard with approval the suggestion that plans should depict holdings adjacent to that in question sufficiently to identify the area in dispute. At present it is required under section 21 of the Registration Act that a document presented for registration shall contain a description of the property sufficient for it to be identified. We are of opinion that no document relating to the transfer of land should be accepted for registration unless it contains a description of the land as it stands in the record at the time, and would like the feasibility of requiring the parties to attach certified extracts from the record to be examined. We would not, however, require that a map should be attached, as there are practical difficulties in filing maps in the register. It is also of practical importance that Government should abstain so far as possible from recognizing claims to land in any other form than the entry in the record. In Bombay this principle is carried so far that the receipt for land revenue contains no reference to the land for which the revenue is paid. Where the assessment varies from year to year as it does in Burma, we consider that the assessee is entitled to a detailed account; we are unable therefore to recommend the Bombay practice for adoption in this province. It would seem useful however to endorse on the tax-ticket a conspicuous notice to the effect that the entry of a name therein carries with it no presumption of

title which is given only by an entry in the record of rights. These provisions would encourage landowners to assist in maintaining an accurate record. We provide also for an annual check of the record during the assessment season and for the systematic disposal of mutations. It would thus become possible to insist more rigorously than at present on the obligation to report transfers. Parties are now liable at the discretion of the Deputy Commissioner to a penalty of fine which may extend to five times the annual land revenue, with a limit of Rs. 50 in Upper Burma. We do not attach great value to penal provisions of this nature but in exceptional cases they are useful, and we consider that parties to a transfer who fail to report should be made liable to a fine not exceeding Rs. 50 at the discretion of the record officer.

197. The registers in Burma cannot be so simple as in India because they must provide for the annual fluctuating assessment. Under every system however it is necessary to provide:—

Principles for constructing forms of registers.

- (a) for maintaining the record of rights,
- (b) for the annual register of assessments,
- (c) for the collection of annual statistics, of which some are collected by holdings, *e.g.* tenancies, and some by fields, *e.g.* crops.

The particulars entered in the record of rights are quasi-permanent; it is unnecessary to re-copy the whole record annually and is sufficient to record changes. All that is required for maintaining the record of rights is a register of mutations.

The assessment register must be prepared annually or by some means brought up to date annually for a whole kwin. There must therefore be at least one register providing for annual changes in every holding.

With regard to annual statistics, *e.g.* tenancies, which can be dealt with by holdings, it would seem convenient to include them in the assessment register, but the substance of the annual assessment roll should be communicated in some form or other to the headman and this may render it preferable to include such statistics in the field register.

Annual statistics by fields require a separate register of fields.

The surveyor must therefore compile:—

- (i) a Field Register;
- (ii) an Assessment Register; and
- (iii) a Register of Mutations.

Tenancy statistics would be included in the field register or the assessment register whichever was found more convenient. We have examined the working of the present registers and of those proposed as substitutes by Mr. Lowry when Settlement Commissioner and now in use in Tharrawaddy and Yaméthin. These will require some modification if our recommendations for the introduction of a record of rights and holding settlements are accepted. The suitability of a new form of register can only be determined after a thorough practical

test and we are of opinion that the difference between agricultural conditions in Upper and Lower Burma is such as to preclude uniformity in the registers without sacrificing other considerations of greater practical importance. In order however to illustrate in greater detail the procedure outlined above we have drafted forms for the Record of Rights, Assessment Register and Mutation Register. These are based on the new forms of registers designed by Mr. Lowry which they adapt to the change in procedure that a record of rights would involve. The forms are given in an appendix together with instructions for their use.

APPENDIX TO CHAPTER XVI.

FORMS AND INSTRUCTIONS FOR PREPARING AND MAINTAINING THE RECORD OF RIGHTS.

Form I.—The Record of Rights.

In column 1 enter the name of the person actually cultivating the land during the year of enquiry, and whether as O (Owner), M (Mortgagee), A (Agent) or T (Tenant).

In column 2 enter the name of the holding, if any.

In columns 3 to 10 enter the necessary particulars according to the latest Register of Holdings.

In column 18 enter the name of the person actually cultivating the land as O (Owner), or M (Mortgagee with possession) or the person admitted to be the owner by the person cultivating as agent or tenant.

In column 11 enter the new holding number, and, after walking round the boundary together with the occupant entered in column 18 and the adjacent cultivators, enter in column 12 each field in the holding. In column 13 enter the nature of the tenure after making enquiries according to general instructions laid down by the Settlement Officer. Leave columns 14 to 17 to be filled in subsequently.

In column 19 enter (for purpose of identification) the name of the wife, husband or father of the occupant if not jointly interested.

In column 20 enter the name of the last preceding occupant and note whether the present occupant inherited the holding or obtained it by purchase or on mortgage.

In column 21 if the holding was obtained by inheritance ascertain how the present occupant is related to his predecessor and whether the estate has been finally divided. If not yet finally divided enter in column 18 every heir recognized by the occupant as entitled to share. When the estate has remained undivided for more than one generation enter only the main stems.

In column 23 enter the name of the owner of the holding if it is occupied by a mortgagee in possession, or the name of any non-usufructuary mortgagee whose claims are admitted by the occupant.

In column 24 enter the name of the wife, husband or father for identification, if not already shown.

In column 25 enter the purchase or mortgage price with a reference to any documents produced.

In columns 26 to 28 enter the area according as the Owner (*i.e.* the person registered as Owner in column 18 or 23) is an Agriculturist (column 26), Resident non-agriculturist (column 27) or Non-resident non-agriculturist (column 28).

In columns 29 to 32 enter the area mortgaged with possession (column 29) and without possession (column 31) and the amount due up to date on the mortgage (columns 30, 32).

In column 33 obtain the signature of the parties; if there is any dispute, note in column 35 the fact that the entry is disputed and the name of the objector.

Form I:

Actual occupancy.		Particulars of Current Registration.								Particulars of New Registration.							
Name and status of Actual Cultivator: O.—Owner. M.—Mortgagee A.—Agent. T.—Tenant. (1)	Name of Holding. (2)	Holding number. (3)	Name of		(a) Tenure (b) Kind and Class (c) Area in each Class (d) Rate on each Class (e) Assessment. (6) (7) (8) (9) (10)					(a) Holding number (b) Field number (c) Tenure (d) Kind and Class (e) Area in each Class (f) Rate on each Class (g) Assessment. (11) (12) (13) (14) (15) (16) (17)				Name, Occupation and Residence of Occupant showing whether— O.—Owner or M.—Mortgagee with possession. S.—Squatter. (18)	Name of wife, husband or father. (19)	Name of previous Occupant and whether obtained by inheritance or for money. (20)	
			Owner.	Mortgagee.													

of Rights.

If inherited,		Record of Encumbrances, Sales and Disputes.			Statistical Particulars.				Particulars of Attestation.			
Relationship of former occupant. (21)	Whether estate finally divided. (22)	Name and Residence of encumbrancer showing whether— O.—Owner or M.—Mortgagee without possession. (23)	Name of wife, husband or father. (24)	Purchase or mortgage price and former owner with reference to No. and date of Registered Deed or Report to Surveyor. (25)	Occupancy.			(a) Area and (b) Mortgage amount of land under mortgage.		Signature of		Remarks and signature of Record Officer. (26)
					Area of which owner is registered as (a) Agriculturist, (b) Resident Non-Agriculturist, (c) Non-Resident. (a) (b) (c) (27) (28) (29)			With possession.		Without possession.			Parties and Record Clerk with date. (33) (34)	Record Inspector and parties if required. (35)

Form II.—The Assessment Register.

During Recess—

In column 1 enter in black ink the number of holding (R.R.* column 11) and name of holding (R.R. column 2).

In column 2 enter in black ink name of occupant (R.R. column 18) showing whether O. (Owner) or M. (Mortgagee) together with residence and name of wife, husband or father. Where the Record of Rights shows several joint occupants, enter the name of first and total number thus c[60]-9

In column 3 enter in black ink name of encumbrancer (R.R. column 23) showing whether O (Owner) or M (Mortgagee) together with residence and name of wife, husband or father.

In Field Season—

In columns 1, 2 and 3 enter in red ink any changes in above entries and make detailed entries in Mutation Register.

In column 3 enter name of tenant, if revenue-paying in red ink with residence, if not revenue-paying name only. If one of several joint owners works the holding enter him as tenant.

In column 4 enter the area let for five years or more.

In column 5 enter the area cultivated by the same man as tenant for five years or more.

In columns 6 and 7 enter the area let on fixed cash rent (column 6) and the cash rent agreed on (column 7).

In columns 8 and 9 enter the area let on fixed produce and rent (column 8) and the kind and amount of produce agreed on (column 9).

In column 10 enter the area let on half share or partnership terms.

In column 11 enter the area let on share of produce less than one half.

In column 12 enter the area let on payment of revenue only.

In column 13 enter the Main Kind, Soil Class and Rate.

In column 14 enter the area at each rate.

In column 15 enter the demand at each rate.

In column 16 enter any surcharge or rebate not calculated at acre rates.

In column 17 enter the total demand on the holding for A land revenue B cess and C total.

In column 18 the Township or District Office will enter subsequent assessments or remissions and will at the same time in column 19 enter the corrected demand.

On last page of register note prevalent custom regarding payment of revenue and contributions by landlord or tenant, and the price for valuing fixed produce rents.

* R.R.—Record of Rights.

The Assessment Register.

(1)	(2)	(3)	Particulars of Tenancy.								Assessment Roll by Seasons							
			Area let for five years or more.		(a) Area let on different classes and tenancy, and (b) Cash paid for fixed cash rents, and (c) Fixed produce rents of produce.						Revenue at acre rates.			Surcharge + Rebate - net @ acre rates.	Total demand on holding.			
			To rent - paying tenant.	To same tenant.	Fixed cash.		Fixed produce.		Partnership.	Share produce.	Revenue.	Rate.	Area.		Demand	A. Revenue. B. Cess. C. Grand Total.	As calculated as calculated by Surveyor.	Subsequent Assessments + Remissions	As entered in tax ticket.
					a	b	a	a	a	a	a							
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)			

Form III.—The Register of Mutations.

Entries by Surveyor.

An entry must be made in this register whenever the Surveyor finds a change has occurred in columns 2, 3 of Assessment Register or when directed by the Township Officer.

In column 1 enter the number of the holding in which a change has taken place.

In column 2 enter the number of each field affected, unless the change affects the whole holding.

In columns 3 and 4 copy the entry in black ink in column 2 of the Assessment Register; if the wife or husband is jointly interested in the transaction the name will appear in column 3, and column 4 will be left blank. Note whether O (Owner), or M (Mortgagee) and whether A (Agriculturist), R (Resident Non-Agriculturist) or N (Non-Resident).

In column 5 copy the entries in red ink in column 2 of the Assessment Register distinguishing the new occupant as O (Owner) or M (Mortgagee) and as A (Agriculturist), R (Resident Non-Agriculturist) or N (Non-Resident) together with name of wife or husband if jointly interested; when several new occupants hold jointly an undivided estate enter the name of each.

In column 6 enter (for identification if necessary) the name of wife, husband or father.

In column 7 note whether inherited or obtained for money

In column 8 note how the occupant in column 5 is related to the occupant in column 3 taking care to insert all heirs whose claims are recognized by the person in actual occupation and note whether the estate is finally divided

In column 9 copy the entries in black ink in column 3 of the Assessment Register distinguishing whether O or M and whether A, R or N.

In column 10 copy the name shown in red ink in column 3 of the Assessment Register distinguishing the new encumbrancer as O or M and as A, R or N.

In column 11 enter the purchase or mortgage price with reference to any document produced, obtain the signature of the parties and if the mutation is disputed note this fact and the name of the person who objects.

In columns 13 to 18 distribute the area transferred from or to agriculturists and non-agriculturists, resident and non-resident. No entry is required in these columns unless the description of the new owner (columns 5 and 10) differs from that of the former owner (columns 3 and 9).

In columns 19 to 28 enter the areas sold, mortgaged or redeemed and the consideration paid.

Entries by Inspector and Attesting Officer.

The Land Records Inspector will verify all mutations (making any necessary corrections and in this case obtaining the signatures of parties) and will sign in column 12.

The Township Officer will note in column 29 whether the transfer is admitted or disputed. In the latter case he will give a reference to the Mutation Dispute Proceedings and add any necessary remarks. After attestation he will give a serial number to the mutation, a backward reference to the last preceding mutations making a cross reference in column 33 of that mutation, and then sign the entries which will then form part of the Record of Rights.

Holding Numbers.	Field Numbers.	Mutations involving change in Occupation.						Other Mutations.		Number and Date of Registered Deed or Order of Court or Report to Surveyor Signature of Parties.	Signature of Surveyor and Inspector with date.
		Name and Residence of former occupant.	Name of wife, husband or father.	Name and Residence of new occupant.	Name of wife, husband or father.	Whether inherited or obtained for money.	If inherited how related to former occupant; and whether estate divided.	Name and Residence of former encumbrancer.	Name and Residence of new encumbrancer.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)

Register of Mutations.

Statistical Particulars.														Particulars of Attestation.						
Occupancy.						Sale, Mortgage and Redemption.								Remarks by attesting Officer and reference to Mutation Dispute Proceedings, if any.	Serial Number.	Backward Reference.	Signature of attesting Officer.	Forward Reference.		
Areas transferred from (a) Agriculturists; (b) Resident Non-agriculturist; (c) Non-resident.			Areas transferred to (a) Agriculturists; (b) Resident, Non-agriculturist; (c) Non-resident.			(a) Area sold and (b) Price obtained.		Mortgage with possession.		Mortgage without possession.										
								(a) Area newly mortgaged and (b) Price obtained.	(a) Area newly redeemed and (b) Price paid.	(a) Area newly mortgaged and (b) Price obtained.	(a) Area newly redeemed and (b) Price obtained.									
a	b	c	a	b	c	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)							
(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)

CHAPTER XVII.

THE ECONOMIC RECORD.

198. In every province annual statistics are compiled to show the area under different crops. In India, where survey charges run smaller than in Burma, it is possible for the surveyors to pay more attention to this branch of their duty. But in Burma the assessment depends upon the record of cropped areas; this makes for accurate work, and the practice of marking the crops on the annual kwin map, by facilitating inspection, further raises the degree of accuracy. There seems no reason to believe that for Burma, as a whole, the statistics are materially, if at all, less accurate than elsewhere. It is true that in certain poor and remote areas the work is unsatisfactory, but these constitute a special case which we deal with separately. Apart from this we have no recommendations to submit with the direct object of improving the standard of crop marking. One or two points of minor importance deserve passing notice. It is the practice at present to compile statistics by the survey charge; it would seem more useful to compile them by tracts. Much might be done to illustrate the course of annual cultivation by graphs which would present at a glance the history of cultivation in a tract over a series of years. Another matter is that hitherto it has not been easy to extract by assessment classes the areas cultivated with different crops. This information is useful to the settlement officer and provision should be made for recording it in the new forms.

199. How the estimates of outturn and crop forecasts compare in accuracy with those of other provinces we cannot judge. Messrs. Lockie and Pemberton, the London Rice Brokers, who compile a weekly circular giving particulars of the rice crops of all rice exporting countries, drew attention in their issue for the 16th December 1910 to the fact that for the nine years 1900 to 1908 the difference between the quantity estimated as available for export and that actually exported was no more than 0.07 per cent. It is understood that over a period of years there is still a very close agreement between the estimated and actual exports. In single years however wide differences occur; the instructions are defective and their revision is now under consideration. Suggestions are made from time to time that the preparation of crop forecasts should be taken over by the agricultural department, as is the practice in most provinces. It may be well therefore to call attention to the fact, which we have already mentioned, that nowhere in India is the number of experiments in crop measurement at all comparable with the number conducted at every settlement in Burma. The Commissioner of Settlements is in a better position than the Director of Agriculture to interpret these statistics and the annual estimates.

based on them by the land records department. On the other hand the agricultural department is very much under-staffed. It cannot be expected therefore that for some years to come the Director of Agriculture will be able to assume responsibility for the annual forecasts nor do much beyond assisting the Settlement Commissioner with his advice. We are of opinion that in the preparation of forecasts the Director of Agriculture should be consulted by the Settlement Commissioner but that the responsibility for forecasts should remain with the latter. In another respect the existing procedure leaves room for improvement. It has always been the practice for the Settlement Commissioner to consult leading merchants in Rangoon regarding crop prospects. In many districts there are large mills and branches of important firms; the local managers can often furnish useful advice on this point to district officers, but it is not at present the invariable practice to obtain their assistance and we consider that district officers should be directed to make use of such non-official agencies as far as possible.

200. The present instructions for the record of wholesale paddy prices at harvest are not always easy to apply. The surveyor in Lower Burma is expected to record all sales of not less than 100 baskets which have actually taken place in his headquarters village during January, February and March. In January and February he should be busy in the field preparing his assessments. From the beginning of March onwards he may be required for survey work outside his charge. In a large part of the Delta there are few sales at a full price until the end of February or March, and the figures are liable to be vitiated by the low prices obtained for forward sales and by sales on the *sabape* system of taking loans in cash to be repaid in paddy. Also if the surveyor's headquarters be in a large market town it is quite impossible for him to comply with the instructions requiring a complete record of all sales. We are of opinion that surveyors should be instructed during the field season to enquire in each *kwin* what sales exceeding a hundred baskets have been made, and to record full particulars of not more than five. The variety of paddy sold should be stated and forward sales and sales on *sabape* should be excluded. In Upper Burma the present limit of fifty baskets is suitable. The prices of other staples should be recorded on the same principle, no record being made where the value of the produce sold is less than Rs. 20.

The returns of prices of food grains and other commodities present some anomalies. The district returns in terms of seers and chittacks have to be converted into viss and pounds in the office of the Settlement Commissioner for publication in the Burma Gazette. The district officer in Burma rarely knows the meaning of the Indian terms seer and chittack and it would be preferable for the returns to be submitted in viss and pounds and subsequently converted into seers and chittacks for use in statistical publications in India.

201. The Season and Crop Report is due in the office of the Divisional Commissioner on the 7th May. Its compilation therefore interferes with field work, interrupting and reducing the limited time available for surveys in Lower Burma. Mercantile firms require

early information as to the finally revised estimates of the outturns of paddy and the area sown. It would seem possible to reduce the encroachment on the field season by compiling advance statements on these points leaving the remainder of the work for the recess, and we recommend that this course be adopted.

202. The annual statistics relating to agricultural economy, prepared by the land records department and published in the Report on the Administration of Land Revenue, show the area held by agriculturists and non-agriculturists, classing the latter as resident and non-resident; the area let at full rents and the gross value of the total rent paid, the number of tenancies at full rents distinguishing the number of cases in which the land has been let continuously for less than five years and for five years and over and the number of tenants who have rented their land for less than five years or for five years and over; the area sold during the year and the amount of the purchase money or value of the consideration; the area mortgaged during the year of report with the amount for which it was mortgaged and the total area under mortgage at the end of the year with the amount for which it was mortgaged; and finally, the area redeemed during the year. The land records department in the Punjab compiles similar statistics but does not show rental values nor the duration of tenancies. In the Central Provinces also similar statistics are published but the figures relating to tenancy show the rents paid by tenants, which are largely customary, and not the rents paid by sub-tenants, which approach a competitive pitch; the utility of the statistics is therefore greatly impaired. In Bombay no such statistics are compiled though much of the material exists in the Record of Rights. In Madras the information can only be obtained by a special enquiry. Thus the statistics are more comprehensive in Burma than in any other province.

It is believed that, in Lower Burma, much of the information which they contain reaches a very high level of accuracy, and that this is especially true of the rental statistics and of the figures relating to sales and to the area mortgaged during the year. The classification of landowners as agriculturists and non-agriculturists, resident and non-resident, is probably accurate enough to throw useful light on the general trend of conditions, and to indicate roughly the position in any given year. The figures showing the total area under mortgage however are incorrect, as the procedure allows the same area to appear twice in the statistics, so that for a whole kwin the area shown as under mortgage may exceed the total area of the kwin. This may happen, as we ourselves found, over a whole survey charge, but an error of this magnitude should be immediately detected by the superintendent in the annual returns. The statistics in Lower Burma might be made very much more useful however if the figures were extracted separately for rice land. At present garden land and sometimes even house property and land in towns are included in the statistics. This may vitiate the figures unless the area of rice land sold is very large. Thus during 1918-19 land is reported to have fetched Rs. 167 per acre in Tavoy, a far higher price than in any

other district. Although rice land is valuable in Tavoy enquiries have shown that the high figure in the report is due to the inclusion of garden land. In view of the predominant importance of rice, and of the abnormal economic conditions in Lower Burma, the small extra trouble involved in compiling returns separately for rice land would be fully justified by the enhanced value of the statistics relating to sales and mortgages. A similar change in the form of the returns would greatly multiply the value of the tenancy figures. By far the larger portion of rice land rented in Lower Burma is leased on the fixed produce system. At present the surveyor values the paddy paid as rent, and calculates the rent in cash. This not only introduces a chance of error but greatly detracts from the value of the statistics. Measured in terms of paddy, rents are rising steadily but this upward tendency is obscured by the conversion of the produce rent into cash at a price which fluctuates annually. Thus the figures for recent years show that in 1910-11 the rent per acre was Rs. 11.7; in 1911-12 Rs. 14.5; in 1912-13 Rs. 13.5; in 1913-14 Rs. 14.5; and in 1914-15 Rs. 10.3. In terms of money, rents for the last of these five years were at their lowest, in terms of paddy they were undoubtedly at their highest. The actual figures given are therefore misleading.

In Upper Burma, the heads of information are equally comprehensive. But although almost all the mortgages in *c. In Upper Burma.* that part of the province are usufructuary, the instructions direct that statistics of non-usufructuary mortgages should alone be compiled and published. And again, although almost all the tenancies are on partnership or share produce terms, the instructions direct that the statistics of fixed rents in cash or produce should be the only tenancy statistics compiled and published. The statistics for Upper Burma therefore convey an erroneous impression of conditions there and can only be described as dangerously misleading. It would be preferable to publish none at all. In view of the directions that the statistics of usufructuary mortgages and of partnership or share produce tenancies are not to be compiled, it inevitably follows that the particulars under these heads are carelessly recorded and carelessly scrutinized. Some of them are needed for assessment purposes and these must be recorded in any case. The name of each occupant who pays revenue must be brought on to the register together with the area he occupies, and as it is customary for mortgages and tenants in Upper Burma to pay revenue particulars of mortgages and tenancies have to be registered. Clearly if they are recorded, they should be compiled, for little use can be made of information recorded, but not compiled. Compilation would involve very little labour and although we recognize that in Upper Burma the land records establishment has more than it can do and that simplification of work is essential, there are many tracts where the compilation of these statistics could be undertaken in addition to the work at present performed and others where less important work now done might be sacrificed if necessary. Unless this change in procedure is introduced, the statistics published will continue to be worthless and their collection a mere waste of time. The introduction of the change in procedure which we recommend will result in the publication of statistics

which give a true idea as to mortgage and tenancy conditions in Upper Burma. We consider that until it takes place no figures of mortgages and tenancies in Upper Burma should be published. The breach of continuity in the published figures will have a positive value as it will signalize the change.

203. The instructions regarding the procedure for collecting the statistics are open to criticism in certain respects.
 Procedure for collecting statistics ;

(i) Some of the information cannot be obtained easily if at all.
 a. Defects. Tenants are supposed to state the outturns of their land and the rent actually paid as distinct from the rent agreed upon. The revenue surveyors can only ascertain these particulars by visiting the land after harvest and as in Lower Burma many of the landlords are non-resident and most of the tenants migratory, they may not be able to ascertain them, even if they try. In many cases however, they have not an opportunity to visit the kwin a second time since, when they have completed their assessment rolls, they are required for survey work, often outside their own charge. At present, many of these figures are mere guess work and as little or no use is made of them, it is nobody's business to ensure their accuracy.

(ii) Some of the information requires minute enquiries. The surveyors are expected to record the contributions made by each tenant and each landlord to the cost of cultivation, in order to ascertain the true rent. Any settlement officer who has made the attempt knows that this may involve lengthy and difficult enquiries which are of no practical value for statistical purposes. The ordinary surveyor has neither the time nor the training to ascertain such particulars.

(iii) The surveyors are expected moreover to distinguish between true rents and others. This again is a task which must often be beyond their skill.

(iv) Although paragraph 469 of the Land Records Manual lays down that transfer of ownership should not be considered to interrupt the continuity of a tenancy, this direction is overlooked in some districts when a holding passes by succession, thus impairing the value of the statistics. We have been unable to trace any corresponding direction in the new draft manual.

It would be possible to multiply illustrations of defects in the present procedure for the collection of statistics, but the examples given, which are confined to tenancy, will sufficiently indicate their general character and origin. In our opinion surveyors should be required to record only the following particulars.

(i) Tenancies: The name of the tenant, the area rented and the rent agreed upon, and, as at present, the duration of the tenancy. If a holding is cultivated by more than one tenant it is sufficient to record the name of each tenant, the total area rented, and the total rent, unless the tenants pay the revenue, when the above details must be recorded separately for each. For fixed cash tenancies the surveyor should record the rent in money, for fixed produce tenancies the rent in kind, and for

partnership and share produce tenancies the share of the produce paid by the tenant.

The annual statistics for the district would then show the total area rented under each class of tenancy and for fixed cash and fixed produce tenancies the total rent in cash or kind. These statistics might usefully be tabulated according to the tracts formed at the latest settlement.

(ii) (a) Usufructuary mortgages : the name of each new mortgagee and of each old mortgagee who has advanced a further sum during the year on a mortgage previously existing, the new area mortgaged, and the amount paid during the year on account of the mortgage either old or new.

(b) Non-usufructuary mortgages : the name of the mortgagee whenever a new bond has been executed during the year, the area mortgaged and the amount stated in the bond.

(c) Redemptions : these would be shown similarly to mortgages.

(d) Sales : the name of each purchaser who has bought land during the year, the area bought and the amount paid.

The statistics for the district should show the area mortgaged with and without possession at the beginning of the year. In this respect the present registers are inaccurate in Lower Burma, and both inaccurate and incomplete in Upper Burma. It is probably beyond the powers of the local staff to prepare complete and accurate registers without temporary assistance. If thus corrected the annual statistics would show the area mortgaged with and without possession at the beginning and end of the year, the area redeemed the amount paid for redeeming it and the area sold and the consideration paid. In Lower Burma they should be compiled separately for rice land ; this might also be useful in some Upper Burma districts. Further particulars of these transactions would also be required in connection with the record of rights but not for statistical purposes.

(iii) The surveyor should further be required as at present to classify each new occupant of land during the year as agriculturist or non-agriculturist and in the latter case as resident or non-resident.

It may be noted here however that, in the year preceding settlement, and also during the first year of settlement, it might be desirable to relieve the surveyors of survey work, and require them to revise their registers, making special efforts to bring the register of occupancy and encumbrances up to date, and also to record outturns and the rents actually paid by tenants, as they are supposed to do every year at present.

CHAPTER XVIII.

SURVEY AND MAPPING.

204. We have seen that the survey policy of Burma has been established on foundations laid by the Survey of India Department. Not only did this department carry out the original traverse and cadastral surveys, but it took a large part in constructing the framework of the present survey and supplied the first recruits for the Burma Land Records Service. To Mr. Clancey, late Assistant Director, one of the earliest recruits, is due the credit of organizing the professional side of the land-records department much on the lines which still obtain.

It can justly be claimed for the early surveys that they are as good as anything to be found in India, and in some respects even superior. Since then however, several factors have tended to lower the standard. The most important has been the astonishing rapidity with which cultivation has extended, so that the survey has always been in arrears. At the outset these were rendered more serious by a mistaken reliance on the *taikthugyis*. Their charge, the *taik* or circle, was two or even three times the size of a modern survey charge and they hardly knew how to use a chain. The *thugyi* was permitted to employ one or more clerks (*taiksayes*). These were little better equipped in survey knowledge; they were often related to the *taikthugyis* and tended to do little more than prepare assessment rolls. Thus in the course of a very few years large arrears accumulated.

The disposal of these was rendered more difficult by the defective arrangements for survey training. In respect of the subordinate staff the great difficulties presented by this problem have not yet entirely been removed, and the inheritance of past years is still a burden; many of the senior men are too old to train and physically too feeble for hard survey work. The lack of adequate survey qualifications in the superior staff was even more serious. The practice of obtaining recruits from the Survey of India Department ceased about 1895 and in subsequent years vacancies were filled by local recruitment. The men obtained were of the same class as that recruited for the Survey of India but received a greatly inferior training in survey. Officers who were expected to control and direct a body of 70 to 90 surveyors were only trained to handle and read a theodolite over 8 to 12 stations and to fill in the interior details of a plot of paddy land measuring about 10 acres.

205. Measures have been taken to remedy these defects. From 1886 onwards *taikthugyis* were gradually replaced by village headman, and the *taiksayes* by revenue surveyors. As each *taik* fell vacant, it was divided into smaller and more easily handled charges. These measures rendered it less impossible for surveyors in the more fully cultivated areas to

keep pace with current changes, but they could not cope with the legacy of arrears, and over many parts of the country rapid extensions continued. In 1905 when the problem of resurvey became insistent in the districts which had been first surveyed, a special survey party under a selected superintendent was organized to deal with it and a few superintendents who could be trusted to conduct similar operations were required, in addition to their other duties, to organize small detachments of 16 to 20 men to revise the survey in their own districts.

It was not however till 1909 that any advance was made in the training of the junior officers of the department. In that year, recently joined recruits were sent to Dehra Dun to be trained in the Survey of India training school. Junior Superintendents, already in the department, were deputed for a year's course to a Survey of India Party working in the province. Since 1913 the training at Dehra Dun has been replaced by a survey course in the special survey party, lasting for twenty months and comprising two field seasons and one recess. These measures have resulted in a marked improvement in the professional ability of the superior staff and have rendered it possible to conduct resurveys, more generally instead of depending mainly on the special party. The incapacity of the subordinate staff hampered progress for some years, but the new school of superintendents could train their men, and regular survey courses were organized for men already in the department. The boys at the survey schools also are now required to assist in the survey of about 600 acres as part of their school course. Thus we have in each district a body of trained surveyors competent to carry out cadastral survey under superintendents who are professional men. Points of weakness still exist, but during recent years in many Lower Burma districts, by organizing the survey on a district basis and sending small groups of surveyors to those parts of the districts most in need of attention, it has been found possible not only to keep the survey in general up to date but to reduce the accumulation of arrears and to extend the survey to newly developed country. The supply of traversers and draughtsmen is still inadequate, and in certain districts, where some surveyors are engaged on assessment throughout the field season, or even throughout the year, the whole staff is not available for survey work. Before considering these points it is convenient to examine the arrangements for mapping and for maintaining permanent survey marks, as these bear closely on the survey problem.

206. Map printing is intimately connected with resurvey. At the conclusion of an original settlement the land records department is left with a stock of maps for annual use. As this stock becomes depleted the maps have to be reprinted and, since it is waste of money to print incorrect maps, the survey must be brought up to date whenever a reprint is necessary. The resurvey and reprinting take eighteen months or longer and it is necessary therefore to make arrangements at least two years ahead. This difficulty did not attract attention until recently, so that within the last few years many districts have found their stock exhausted before the necessary surveys had been undertaken. Precautionary measures

were prescribed in 1917 but the orders have not yet become effective. Much revision of the survey will therefore be necessary during the next few years. The difficulties arising in this connection have been increased by the substitution of the Vandyke photographic process for the lithographic process in the map printing department of the Government Press. In the lithographic process careful draughtsmanship was unnecessary; it was possible even to prepare the fresh print from an old printed map with new lines inserted in red ink, and unnecessary lines obliterated by white paint. In the photographic processes such corrections are reproduced and it is now essential that maps sent up to the press for reproduction shall be free from blemishes and drawn with special skill. The outturn of maps for reprinting has therefore been reduced. There have also been delays in the press. Formerly the surveyors annually copied the soil class lines and symbols in coloured paint; during recent years these have been photographically reproduced. But the colour printing has been found to take so long that maps have accumulated. Thus, neglect to take adequate precautions against the depletion of stock has rendered revision of the survey necessary in many kwins at the same time, and the difficulty has been aggravated by delays both in district offices and in the map printing department. Quite independently therefore of extensions of cultivation there have been reasons for the accumulation of arrears.

207. Permanent survey marks comprise those of the Great Trigonometrical Survey and those of the Revenue Survey. Each of the former should be visited once in two years by an inspector of land records and once in three years by the superintendent or a revenue officer not below the rank of township officer, but many are inaccessible and it is doubtful how far the present rules can be applied. For the maintenance of the revenue survey every kwin has permanent survey marks embedded round its boundaries with subsidiary marks along sub-traverse lines. These consist of clay cylinders or, in the more remote tracts, of zinc tubes with charcoal. The traverse data giving angular and linear measurements between each station are bound in substantial volumes and preserved in the district office. These marks should be inspected annually by the headman and once in three years by the revenue surveyor working on a three years' programme. The headman is required to report on the condition of each survey mark in his charge, and the surveyor is required to renew all broken or damaged marks and to report all lost marks to the Inspector. But the headman is not competent to carry out the inspection required of him and, in November and December when his report is due, it is almost impossible for him to visit the marks. The surveyor often finds difficulty in obtaining the necessary assistance for the repair of damaged marks, and where a mark has been lost there are difficulties in replacing it. Detailed suggestions for improving the present system of protection would involve an examination of many technical questions on which it would be unprofitable to enter. It would seem however that the duty of inspecting survey marks should be placed on the revenue surveyor, and the duty of providing for their protection and repair should be placed on the headman. Their work in this connec-

tion might be greatly lightened by a wholesale reduction in the number of marks. At present in any kwin there may be 200 theodolite stations for protection. In most cases it is sufficient to protect consecutive stations at the junction of three or more kwins; a few intermediate points may also be required, except in small kwins. This will leave about ten to fifteen marks for protection in each kwin and these should be bricked up or covered with stone cairns. At the remaining points clay cylinders will be laid at the time of survey as at present, but no measures for their protection are required. We recommend accordingly that action be taken on the above lines to reduce the number of marks; that surveyors be required annually at crop marking to inspect and report to the superintendent on the condition of those to be preserved; and that the headman be required, under the direction of the township officer, to take such action as may be necessary to repair marks which are reported by the surveyor to be damaged or inadequately protected. If surveyors are unable to inspect all the marks in their charges annually a two or even three year programme of inspection would be needed. The matter however is relevant here mainly in its bearing on re-survey work. So long as the traverse can be identified it is easy to correct the cadastral detail, but defective arrangements for maintenance have occasioned the loss of many survey marks and the employment of traverse surveyors is necessary to replace them.

208. It appears, therefore, that, although arrears have accumulated in the past owing to the rapid extension of Survey programmes, cultivation and the incompetence of the staff, the rate of extension has been decreasing and the staff has become more capable. The organization of the survey on a district basis has rendered it possible to keep pace with current survey work, but the simultaneous depletion of large stocks of maps has added to the arrears of survey which have accumulated, and in disposing of these the district staff is handicapped by the loss of permanent survey marks and the lack of skilled draughtsmen. We recommend therefore that the requirements of each district in respect of traversers and draughtsmen be examined, and deficiencies in this respect made good. In some districts at least it may also be found that additional surveyors are required for cadastral work to supplement the local staff. The present arrangements for survey are further defective in failing to provide for adequate scrutiny of the district survey programmes. The Manual contemplates the systematic reporting of every kwin when the surveyor considers resurvey or revision necessary. The superintendent is supposed to examine each kwin separately before passing it for resurvey, and annually to prepare a survey programme. But these survey programmes often include much that is unnecessary and, perhaps less often, exclude areas where survey is needed. Although it is very desirable that the district programmes should be scrutinized, the Deputy and Assistant Directors of Land Records can afford but little attention to this branch of their duties. The present arrears of survey will require the continued maintenance of the special survey party and the officer in charge of this could appropriately be allotted the duty of examining district survey programmes.

209. It has already been mentioned that a special survey party was organized in 1905 to carry out the resurvey which had become necessary in the districts first surveyed. In 1908 the Survey of India Department ceased to undertake cadastral work in Burma. Since that date all extensions of the original cadastral survey and all resurveys have been undertaken by the district establishments with the assistance of the special survey party. But the tradition that each district should maintain its own survey without assistance from outside has never been abandoned, and the special party has not been continuously employed; from time to time it has ceased work for a year or so. During the last ten years however, it has increasingly been recognized that in some district or other there will always be work beyond the powers of the local staff, and the special party though never regarded as permanent has been reconstituted every year. In addition to work for the land records department it has undertaken forest surveys, and a second party has been organized for the survey of rubber and mining leases. We are of opinion that the time has come to place the party on a permanent footing. This will render it possible to remove some defects which can hardly be avoided so long as the establishment is temporary. Hitherto it has been impossible to arrange a definite programme. The provincial position as regards survey is reviewed annually during the recess, and, when it has been decided to re-employ the staff during the following season, a programme embracing both traverse and cadastral work is submitted for sanction, which is not received until October, or even later. The traversers must be in the field during November and must start work at once. New traverses are therefore laid down in order to avoid waste of time in picking up missing or replacing lost marks where necessary. To put down new marks unnecessarily, increases work, leads to confusion and is more expensive in the long run. The traverse is immediately followed by the cadastral work; this is professionally unsound and has in fact occasioned difficulty. It is easier to recruit Indians at short notice than Burmans; temporary Indian hands are less likely than Burmans to find permanent employment in Burma; and their employment can be made conditional on their bringing their own channmen. Thus it is much less trouble to employ Indians than Burmans. It is in fact very difficult to employ Burmans under such conditions because it would be necessary to train them, and this cannot easily be accomplished with a temporary organization. There is no doubt that at present Indian surveyors are more efficient and cheaper, but although it is justifiable to engage them as a temporary measure, their continuous employment is against the best interests of the province and in the long run they will prove more expensive.

We are of opinion therefore that the special survey party should be converted into a permanent survey branch of the land records department. We have already suggested that the officer in charge should be required to scrutinize the arrangements for survey in each district. Although survey and map printing are intimately connected there is at present a lack of co-ordination between them which it is desirable to remedy, and this might be effected by entrusting to the same officer

the supervision of the map printing department. The appointment will thus be of more importance than an ordinary district post and we recommend that the officer in charge should be made Assistant Director for Surveys. During the recess season he will spend much of his time on tour examining the district survey programmes, to ensure that suitable arrangements are made for survey, where this is necessary, and to prevent unnecessary surveys being undertaken. He will thus be able to ascertain what outside assistance each district will require during the ensuing open season. Many will require no help, some will require a few traversers only, and in some the large area for survey will require a special staff on a scale which a local superintendent will be unable to supervise. At the end of the recess he will draw up a programme of operations for three years comprising both traverse and cadastral work. The first year of the programme will contain detailed arrangements regarding the disposition of the establishment; the programme of the two following years will only show the area for survey. At the beginning of the field season he will send surveyors to work under the local superintendents and the main body will work in one or more of the larger areas under the supervision of himself or of his assistant. During the next recess he will review the general progress and draw up a revised three years programme. He will also be responsible that the arrangements for printing maps are working smoothly. Thus, his functions will be to inspect district surveys and advise local officers, to inspect the progress of map printing and advise the superintendent of the press, and personally to conduct surveys on a large scale. For the latter purpose it would be necessary to give him an assistant superintendent.

If the special survey party be made permanent it will become necessary to arrange for training surveyors and engaging labour. Surveyors might be trained in a central school and we suggest below that this work might be taken over by the Survey of India Department if that department can give them a suitable training; if not the school would be attached to the survey party. As these surveyors become available they could take the place of the Indians at present annually re-engaged. Some of the Indian surveyors however have been re-employed year after year for many years, and these may reasonably look for permanent appointments. A certain proportion of the senior men should therefore be made permanent at the outset; the junior appointments should be filled by temporary hands until trained surveyors become available to take their place. The question of labour would also present difficulty at first. When the party becomes predominantly Burman it is probable that chainmen will become available, as they now are in the settlement and land records departments. In the first instance however labour would have to be imported from India.

210. Until the present year Burma has not constituted a separate circle of the Survey of India Department, and only detached parties have been sent to the province. These have not been available for miscellaneous survey work and it has therefore been necessary for the special survey party to undertake work of this nature, to the detriment of its proper work on large scale revenue surveys for the land records department. As

already mentioned the special party has been engaged on forest surveys and on rubber and mining leases. There have been many applications for the survey of large areas for colonization, or for leases to companies who wish to take up land for planting sugar and for similar commercial ventures. A review of the arrears of revenue survey has shown that the special party on its present scale cannot carry out even its proper work, and is quite unable to accept new responsibilities. In view therefore of the increasing volume of miscellaneous survey work Burma has now been provisionally constituted a separate Survey Circle of the Survey of India Department, and it will now be possible to obtain the assistance of this department in clearing off arrears. Much of the work consists in picking up scattered traverse points in different districts and work of this nature is best left to local superintendents. But there is more work on a large scale than the local staff and special survey branch will be able to carry out within the next few years and the Survey of India Department will be able to relieve the special survey branch of some of this. In this connection however we would draw attention to the undesirability of laying down new traverses where it is possible to pick up old stations, as the existence of a double set of traverse data leads to complications in the subsequent maintenance by the district staff; we understand that the Survey of India prefers to lay down new stations. In distributing work between the Survey of India and the special survey branch this matter should be borne in mind and, where it is possible to pick up the old stations without much difficulty, the work should, so far as can be arranged, be allotted to the special survey branch. It will also be necessary to see that the traverse programme does not run too far ahead of the cadastral work; the special survey branch will be undertaking both traverse and cadastral work and, unless the Survey of India Department can carry out the cadastral work in areas where it lays down the traverse, a disproportionate quantity of cadastral work may be left to the special survey branch. The Survey of India Department may be able to render valuable assistance in another direction by furnishing a regular supply of skilled surveyors and draughtsmen. In the land records survey schools the course includes land records work, which a surveyor as such does not require. They are therefore not entirely suited as training grounds for the men of the special survey branch and these could be obtained from the Survey of India training school. The existence of such a school would also help to solve another outstanding difficulty. The weak point of the land records survey schools is the lack of efficient survey teachers. An experiment has been made in training men at the normal schools of the Education Department but it has not yet proved successful. The Survey of India training school would be able to supply competent survey teachers.

211. On the scheme outlined above the Survey of India Department, the special survey branch and the district survey establishments will each have their respective functions.

The Survey of India Department will relieve the special party of large surveys not connected with land revenue, and of traverse

work when this is required over large areas. The survey school of the department will train survey teachers, surveyors and draughtsmen. The head of the Provincial Circle will also be able to assist the Commissioner of Settlements unofficially with responsible advice on survey matters.

The officer in charge of the Special Party will become Assistant Director of Revenue Surveys. He will supervise survey arrangements throughout Burma, will be responsible for the district survey programmes, will inspect and advise on the work of the map printing department of the Government Press, will periodically examine the stocks of maps in district record rooms, and will be in personal charge of a party which will work in two or more large sections and also supply men when required to supplement the local staff for survey work. The establishment of the special survey party will become members of the survey branch of the land records department.

The District Staff will be responsible for carrying out, under the instructions of the Assistant Director of Survey, all local surveys including both traverse and cadastral work.

CHAPTER XIX.

THE ASSESSMENT OF REVENUE: FIXED AND FLUCTUATING ASSESSMENTS.

212. The revenue system of Burma, as already explained, is based on a fluctuating assessment; the revenue demand varies annually with the area cultivated or the area matured. An alternative system is one of fixed assessments with the revenue demand fixed on each holding for the period of settlement regardless of the area cultivated or the harvest. Fixed assessments may be liable to additions, for example, in the form of water rates, and they may be tempered by suspensions or remissions, but the chief element of the annual demand is fixed on the holding and remains unchanged from settlement to re-settlement. A fluctuating assessment is not fixed on the holding but is levied at acre rates. We have been particularly directed to examine the advisability of substituting a system of fixed assessments for the present system of fluctuating assessments. Although the disadvantages and difficulties of a fluctuating assessment must be admitted and have always been recognized in Burma, a fixed assessment has never been found practicable. As we have seen, the balance of advantage was in issue for nearly twenty years in Lower Burma before a fluctuating assessment was finally adopted. Again in Upper Burma the question was debated for over ten years and, after being once closed, was re-opened less than ten years later. Experiments in the direction of a fixed assessment led in Lower Burma to the loss of revenue and in Upper Burma to wholesale remissions. A fluctuating assessment has been found practicable, this system of assessment has agreed more closely than a fixed assessment with Burman custom and opinion, and the repeated and prolonged discussions have always led to the conclusion that in Burma, either where cultivation is rapidly extending, or where crops are precarious, a system of fluctuating assessments is preferable if it can be worked, and in actual working is not so unsatisfactory as to render advisable a change to fixed assessments. In other provinces however similar conditions obtain and only in Burma has the general adoption of fluctuating assessments been found necessary. The presumption is therefore against the Burma system. We turn then to examine how far the same difficulties exist in other provinces, how far they are met by a concession to the principle of fluctuation, how they are met otherwise and with what success, and how far the adoption of a fixed assessment conduces to improvement of the system or to reduction of the cost.

213. Except where land has been brought under irrigation, in no province has cultivation extended on a scale at all comparable with the extensions in Lower Burma between 1870 and 1905, but in every province there are precarious tracts. Most of these are leniently assessed and a fixed assessment has on the whole been found satisfactory. But on irrigated land large variations in the yield are accompanied by high assessments. Where there are high assessments and varying yields, the principle of a fixed assessment is relaxed

to some degree in every province. The relaxation is least in Bombay and the Central Provinces. Under all the major irrigation works in Bombay the water rate varies with the crop. The cultivator applies to the irrigation department stating the crop and the area for which water is required. If he cultivates a larger area or a crop more expensive to irrigate, he is liable to a penal assessment; if he does not receive all the water he requires, he is entitled to a reduction. These penal and reduced assessments are based on measurements made by an irrigation subordinate. With that exception the demand is fixed, except for suspensions and remissions. In the Central Provinces the practice is in general essentially the same as in Bombay, the water rate fluctuates according to the area cultivated as measured by an irrigation subordinate. In Madras extensions over land not already held in private right are assessed as they take place, a penal assessment being levied if the extension is considered undesirable. The assessment is rigidly fixed for all established cultivation except for land occasionally receiving Government irrigation. Irrigated land which may but does not usually receive water from a Government work is classed as dry; in years when Government water is used for cultivation a water rate is assessed on the report of the village surveyor, and a penal rate is levied if the taking of water is objectionable. The village surveyor is required to report for assessment a second crop on land classed at settlement as single crop, or the cultivation of a crop, such as sugar cane, which occupies the land for more than six months. A cultivator may also apply for reduction or remission if for lack of water he grows a dry crop on wet land, a single crop on land classed as double cropped, or if he is unable to cultivate wet land. These fluctuating items may reach a considerable figure, as much as Rs. 30,000 for a taluk, and a large proportion of the demand therefore fluctuates annually. In those parts of the Punjab where a fixed assessment is imposed, there are various devices by which fixed assessments can be given the advantages of fluctuation; for example, on alluvial lands which form and re-form annually, the revenue is adjusted according to the area available for cultivation; if wells go out of use, the revenue is remitted; revenue is suspended in bad years and remitted for hail and other calamities, or after a series of bad years. But in the Punjab the principle of fluctuation is carried further still. It was introduced comparatively recently and met with much opposition both from officials and cultivators but, as the system of fixed assessment had been found to entail a needless loss of revenue in areas where cultivation was extending, and necessitated frequent and extensive suspensions and remissions in precarious areas, the fluctuating system has met with increasing favour and is now preferred by the cultivators. It has become a normal feature of the revenue system, and the revenue annually collected on this principle is about one and a half crores, and is one third of the total land revenue. Thus everywhere in India, although the principle of fixed assessment is accepted, a concession to the principle of fluctuating assessments is made where high rates are combined with variable yields. And it is significant that, in the Punjab, where conditions as regards the extension of cultivation most resemble those in Burma, the system of fluctuating assessments has gradually been adopted on a large scale despite initial opposition from revenue officers and cultivators.

214. In the foregoing paragraphs, we have alluded to the practice of granting suspensions and remissions. These are distinct from a reduction in the demand of an individual cultivator for some specific reason, as in Madras when for lack of water a man cultivates dry crops on land classified as irrigated from a Government source, or in the Punjab when a well goes out of use; they are adjustments of the revenue demand over a large area to meet exceptional conditions. Some procedure for suspensions or remissions is essential with fixed assessments. In India the arrangements on the whole work smoothly, and with Indian experience to guide us it may not seem a difficult matter to devise a procedure which should work with equal ease. But the Indian procedure is the product of long experience and training. In Bombay until only twenty years ago, the theory was held that the assessment represented a moderate and fair demand over a long period, and that the ample margin left to a cultivator in good years should enable him to provide against poor years; there were practically no suspensions, remissions or arrears and the system gave no trouble. With the years of scarcity and famine about 1900, the difficulties arising from a fixed assessment made it necessary to recognize suspensions and remissions as part of the normal system, and several years were devoted to experiments in incorporating them therein before success was finally obtained. Now, as pointed out in a recent Report on Revenue Administration, "the machinery of Government is perfectly attuned to the end and works with an efficiency born of long experience." In the Central Provinces a whole round of settlements broke down between 1895 and 1900. Here again the procedure now evolved represents accumulated experience. If suspensions are required, they have to be given at short notice; everything depends on the September rains. What happens in practice is that, when the Deputy Commissioner find suspensions necessary, he reports how much he proposes to suspend. His proposals are scrutinized and, after amendment where necessary, are sanctioned by the Commissioner who forwards a copy to the Financial Commissioner, nominally for approval but in reality for sanction. Annually thereafter the Deputy Commissioner reports how much he proposes to collect out of the revenue outstanding on account of suspensions from previous years. In the Punjab, the difficulties arising in connection with suspensions and remissions have proved a great stimulus to the introduction of fluctuating assessments. Wherever reliance is placed on suspensions and remissions for tempering a fixed demand there appears to be a constant drift in the direction of rigidity which incessant effort is required to combat. It has been found also that the possibility of remissions of revenue may be utilized as political capital and it has been suggested to us that, politically, a system of automatic exemption carries great advantages. The unfavourable seasons of 1895 to 1900 which tested so severely the revenue systems in Bombay and the Central Provinces were also experienced in Burma. There was actual famine in Myingyan and scarcity throughout the dry zone.- During this period the efficacy of the remission system was tested in Burma as in India, and in Burma as in India it was found inadequate. In India the remedy adopted was the improvement of the remission system. In Burma, with its tradition

of fluctuating assessments, the alternative of making the system more fluctuating was adopted.

215. It is a difficult matter to compare the relative advantages of fixed and fluctuating assessments. We have laid down as the criteria of a sound revenue system that it should provide accurate maps, accurate records, an adequate revenue, equitably distributed and collected without difficulty, and that it should be simple and inexpensive. Whether the people prefer the certainty of a fixed assessment to the relief given in poor years by a fluctuating assessment can only be a matter of opinion; whether maps and records are more accurate on one system than the other cannot be finally determined; even as regards expense the material for comparison is indefinite. Not only the duties of the land records staff, but the work, and therefore the cost of settlement and land revenue administration, differ widely according as the assessment is fixed or fluctuating. A fluctuating assessment requires the maintenance of a large staff, and because the assessment depends upon its honesty it must be highly paid; the work must be thoroughly inspected and requires supervision by responsible and efficient officers. But as the staff which carries out assessment also maintains records of occupancy and cultivation, and these are also maintained with a system of fixed assessments, it by no means follows that a system of fluctuating assessments is more expensive. Even if the land records staff should be found more expensive on the fluctuating system, it would still be possible to argue that indirectly it allowed economies under other heads. But on page 210 we give figures comparing for each province the cost of land revenue administration with the receipts. These figures show that almost under every head of expenditure Burma contrasts favourably with any province. But in Burma the total includes revenue from thathameda, capitation-tax, fisheries and minerals. Figures are therefore given separately for Burma to compare the cost of survey, settlement and land records with ordinary land revenue. This comparison bears hardly on Burma in two ways. The ordinary land revenue in Burma excludes some items for which the departments should receive a credit; and the gross land revenue in other provinces includes assets which are excluded from the ordinary land revenue in Burma. But the result is still favourable to the Burma system as the proportion of total expenditure under these heads to receipts is still lower than in any provinces but the Punjab. Thus arguments for introducing fixed assessments based on the cost of fluctuating assessments are not supported by the facts.

The favourable result of this comparison is largely due to the rich lands of Lower Burma. But it is also due in part to the possibility of imposing higher rates where automatic reductions give relief in poor years. In Myingyan, the poorest district under settlement in Upper Burma, the incidence of the assessment in 1917-18, the last year for which the volume of General Agricultural Statistics is available, was 15 annas 3 pies per acre matured and 12 annas 7 pies per acre cultivated. In the same year, the average assessment in the Central Provinces was 11 as. 11 p. per acre cultivated, although few districts if any can be poorer than Myingyan. In the most precarious districts of Bombay the incidence ranged from 9 as. 9 p. to 10 as. 9 p. per acre cultivated. It appeared to us moreover that the price obtained for rice and most other produce is higher in India than in Burma and

should result in a higher incidence of revenue per acre. It has always been recognized that, with a fixed assessment, the pitch of the demand must be reduced and the figures just cited indicate that with a fixed assessment the loss of revenue is very considerable, so that, considering the question solely in its fiscal aspect, only one conclusion is possible; on the ground of expense no case can be made out for substituting fixed for fluctuating assessments.

§16. But the question cannot be decided solely on fiscal considerations. It is necessary to examine how far the system of fluctuating assessments conduces to an equitable and accurate assessment. As we have noticed when discussing settlement procedure, the cultivator values land in respect of its net profit over a period of years; classification based on local opinion is better suited to fixed than to fluctuating assessments and the introduction of fixed assessments would facilitate the formation of assessment classes. Again, with fluctuating assessments, it is desirable to restrict the number of assessment classes, and although the initial distribution of soils can be equally minute on either system, with a fixed assessment a larger number of classes may be recognized for assessment purposes and the classification can be made correspondingly minute. So that, while a demand fluctuating with the annual produce of the land appears more equitable than one fixed regardless of the harvests, the extra difficulty of calculating and applying a fluctuating assessment reduces the balance of advantage. It must be remembered too that there may be only a remote relation between the demand and the value of the produce in any particular year. Although it is sometimes alleged that there are advantages, practical and theoretical, in pitching the demand high, the alternative view, that the demand should be pitched at such a level as to leave a large margin to the cultivator and to others who benefit from the profits of cultivation, has been the more generally accepted at least for the last twenty years. This view is supported further by considerations of prudence; the demand must be kept low to facilitate collection. With the utmost elasticity in assessment therefore the fluctuations of demand bear very little relation to the fluctuations of produce. The demand does not rise when the yield is above the normal, nor is it ordinarily reduced when the yield falls below the normal, unless the crop fails. Again the ability to pay revenue does not depend entirely on the annual produce, it varies also with the value of the produce. However close may be the correspondences between the revenue demand and produce, the assessment may still be far from equitable in one year as compared with another unless the demand vary with the value of the produce. It would seem impossible therefore to claim that with fluctuating assessments the demand is more equitably adjusted to income, except where the great insecurity of crops results in extreme variations in the annual income.

217. Another criticism to which the system of fluctuating assessment has been subjected may conveniently be noticed here. Where an assessment is fixed on the total area of a holding, industry is stimulated because the cultivator is free to make the best use of his land, whereas a fluctuating assessment may encourage him to leave his land fallow. Experience has demonstrated that in Lower Burma attempts to stimulate

cultivation by assessing fallow land are undesirable. The conditions of Lower Burma, as we have already had frequent occasion to observe, are exceptional; a single crop occupies the ground for a long period, there is an insufficient quantity of manure and it is not the practice to grow crops as fertilisers, much of the land is very little benefited by annual alluvial deposits and most settlement officers there have been convinced that fallow is necessary and should be encouraged, and that difficulty in obtaining a reduction of assessment on fallow land has conducted to exhaustion of the soil. In Upper Burma, the rapid assimilation of new crops and the response of the area under cultivations to variations of price or rainfall indicate that the cultivator needs little stimulus to industry and that the system of exempting land left fallow does not as a matter of practice in any considerable degree encourage idleness.

218. The degree of accuracy in the annual calculation of individual assessments has been questioned, and there is some support for this criticism in the Histories of Holdings which, at our request, have been compiled in every district. These show numerous small variations even where stability might have been expected. The evidence of settlement reports also is often adverse. But these reports indicate, as might have been expected, that the work is least satisfactory where it is most difficult and least easy to supervise. In some Upper Burma districts, survey charges are large, approaching or exceeding 10,000 acres of occupied land; sometimes the land to be assessed lies scattered in isolated patches among large areas of waste, always there is a variety of crops and, ordinarily, a large proportion of land left fallow. Even where these conditions do not obtain but, as in many Upper Burma districts, and in most delta and maritime districts, distances are great and communication slow, difficult and uncomfortable, it is almost impossible to ensure adequate control. Again, the degree of supervision necessarily varies with the personality of the superintendent and, to some extent, with that of the Deputy Commissioner; the most efficient staff will rapidly deteriorate under a lax officer, it may take long to revive discipline and much of the damage is irreparable. This difficulty is aggravated by the circumstance that the lightest revenue districts are often the most difficult land records districts, but the better superintendents naturally gravitate to the more responsible positions where revenue is heavy. There are many factors therefore making for inefficiency. In certain cases the forecast of settlement officers in Upper Burma has been falsified, the revenue has been much less than they anticipated, and an obvious explanation, though others can be put forward, is that assessments have been fraudulent. We have collected figures from the annual reports on the administration of the department to show the number of men punished and, taking the number of inspectors and surveyors at the round figure of 2,000, it appears that annually 2.15 per cent. are dismissed or removed, the usual reason being fraud, and that about 2 per cent. are otherwise severely punished. This proportion is much higher than it should be and indicates the necessity for thorough inspection and constant supervision. But on rice land, especially in Lower Burma, an assessment fluctuating with the cultivated area is exceptionally easy to apply. There is a single crop, failures are rare, whether a field has been cultivated or left fallow is ordinarily a

question of fact which can be verified over a period of months until the next cultivating season begins. So that, although corruption is sometimes detected and some must escape detection, these are isolated cases and are rarely alleged in connection with assessment; extensive and continuous frauds in the assessment of rice land in Lower Burma are in fact rare and with the standard of inspection and supervision ordinarily attained must be regarded as unlikely. But, in undeveloped areas, cultivation is apt to escape assessment, and on insecure lands and in tracts with a variety of crops, the degree of success attained is more questionable; under such conditions a system of assessments fluctuating with the matured area gives opportunity for corruption and although a remarkable degree of accuracy is in general obtained, it is difficult to resist the conclusion that petty corruption does exist. It has been found however that on dry land where rates are low, surveyors tend to assess failures with undue severity, and that rice and other highly assessed crops are apt to receive exemption wrongly; probably this tendency is general. But the areas where a fluctuating assessment is most difficult to apply are precisely the areas where a fixed assessment would give most difficulty. In such circumstances, the choice between the two systems depends on the balance of disadvantage; and that fluctuating assessments allow of petty corruption, although a consideration of much weight, is not in itself sufficient to justify a change of system.

219. The choice between the two systems with regard to the accuracy of maps and records would seem more in accuracy of record, doubtful. So far as assessment depends upon the map and record, a fluctuating assessment should conduce to accuracy because of the greater necessity for inspection. But the importance of accuracy in matters relating to assessment may tend to overshadow the importance of accuracy in other matters; these will receive less attention from the surveyor and from inspecting officers. It can hardly be questioned that this tendency is frequently apparent; the officers and staff of the land records department do regard assessment as their primary function. Settlement work itself is concentrated on assessment and disregards the record, and this attitude is largely reflected in the land records department. So that although a fluctuating system may conduce to greater accuracy of the map and record in respect of assessment, it is possible that records will be more accurate when maintained solely as records and not primarily for assessment purposes.

220. There remains for consideration the question between the two systems as they appeal to the cultivator. Undoubtedly the cultivator would value certainty in the assessment and the idea has attractions for him so far as he can appreciate an abstract proposition. The wealthier people, especially non-resident landowners, would probably approve fixed assessments even more than the ordinary cultivator because the annual payment of their revenue would be facilitated. But it appears to be the universal experience that a large proportion of cultivators do not save in good years to pay their revenue in bad years and this would certainly be the case in Burma; failing remission, the cultivators would have recourse to moneylenders. That a fixed assessment would lead to increased agricultural indebtedness among the cultivators in precarious areas we regard as one of the most cogent arguments against the abandonment of the present system. Moreover the cultivator is

accustomed to elasticity in precarious areas; even where the actual demand varies little it still has the name of fluctuating and to substitute fixed assessments would afford an occasion for complaint and a very real ground for dissatisfaction.

221. The sum of the discussion is that, in Lower Burma as a whole, the fluctuating assessment is working satisfactorily enough to require clear demonstration of the advantage of a change, and that, in Upper Burma and in the insecure areas of Lower Burma, while the system is working very much less satisfactorily, it at least does work and is appreciated by the people, while the alternative of fixed assessments has yet to be proved workable. The choice between the two systems is not merely a matter of altering a few registers; it will react on the whole organization and machinery of the revenue system. Not only would the introduction of fixed assessments radically change the status and duties of every member of the land records department but every revenue officer from Township Officer to Commissioner would have to forget much that he had learned and begin acquiring experience anew. The work of almost every clerk in almost every revenue office would need readjustment and every village headman would be faced with new difficulties and new responsibilities. A revenue system is more than a machine, it is a living organization which derives half its strength from its traditions. If this report has not shown how the revenue system of Burma has grown up along its own lines, moulded by its environment, impelled now in one direction now in another by the orders of the Local Government and of the Government of India, but even of these gradually assimilating some and rejecting others, and has developed on the whole with very little reference to the constant ebb and flow of temporary and often conflicting policies, we have not succeeded in doing justice to a view which close study of the evidence at first hand can hardly fail to impress on those who read it: Any immediate and general introduction of fixed assessments would involve the abandonment of the experience which has accumulated through nearly a hundred years and a new departure along paths which have been shown in India to be set with pitfalls. The development of the Punjab revenue system, where, as we have seen, fluctuating assessments have won their way in the face of opposition from officials and the people, indicates that this system is most suited to precarious areas, and even were it shown petty corruption existed in Upper Burma on a scale much more extensive than we believe or the evidence would suggest, we should still be unable to recommend the substitution of fixed assessments, with the attendant dangers and difficulties of suspensions and remissions, for a system that appears to give general satisfaction both to the people and to revenue officers. We admit however the advantages of fixed assessments and are of opinion that experiments in that direction might suitably be attempted in areas of Lower Burma where the revenue remains practically unaltered from year to year and there would be little difference on either system, whether as regards the revenue produced or the effect upon the people. These experiments would provide information on the basis of which the system might gradually be extended if it were found suitable. In the following chapter, we describe the changes which we recommend together with other suggestions for improving and simplifying the systems of annual assessments.

COMPARATIVE COST OF REVENUE ADMINISTRATION IN VARIOUS PROVINCES—(see paragraph 215.)

(1) *Estimates for 1920-21*

Province.	Total Land Revenue including portion due to irrigation.	(a) Charges for district administration ; (b) Percentage of total land revenue.		(a) Charges for Survey and Settlement ; (b) Percentage of total Land Revenue.		(a) Charges for Land Records ; (b) Percentage of total Land Revenue.		(a) Charges for Village Officers ; (b) Percentage of total Land Revenue.		(a) Total charges under head of Land Revenue ; (b) Percentage of total Land Revenue.		Remarks.
		(3a)	(3b)	(4a)	(4b)	(5a)	(5b)	(6a)	(6b)	(7a)	(7b)	
(1)	(2)	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	(8)
Madras	7,18,00,000	57,88,000	8.1	17,72,700 ⁽³⁾	2.5	30,88,700	4.3	85,65,000 ⁽⁸⁾	5.0	2,01,57,000 ⁽⁹⁾	28.1	
Bombay	6,09,41,000	68,65,000	11.3	1,62,000 ⁽³⁾	0.3	40,21,000	6.6	18,51,000 ⁽⁸⁾	2.9	1,44,52,000 ⁽⁴⁾	23.7	
Central Provinces including Berar	2,29,41,000	18,44,000	8.0	8,88,000 ⁽⁸⁾	3.9	18,80,000 ⁽⁹⁾	8.2	11,08,000 ⁽⁹⁾	4.9	46,28,000 ⁽⁷⁾	20.2	
Punjab	4,41,86,000	21,88,600	4.9	8,02,000	1.8	20,20,000	4.6	12,000 ⁽¹¹⁾	0.03	80,28,000 ⁽¹⁰⁾	18.2	
Barma	6,04,08,000	82,75,000	13.7	5,98,800 ⁽⁸⁾	1.0	17,90,100	2.9	81,58,000	5.2	88,88,000 ⁽¹²⁾	14.7	
Barma	2,82,17,000	25,82,800	9.2	5,05,900	1.8	16,16,800	5.7	18,50,800	6.6	66,32,000 ⁽¹³⁾	23.5	1919-20.

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(2) *Actuals for 1918-19.*

Madras	6,01,18,678	80,88,069	13.5	14,76,989	2.4	29,75,810	4.9	34,40,894	5.7	1,29,89,162 ⁽¹⁴⁾	21.6	
Bombay	4,48,82,518	60,84,954	13.6	1,30,877	0.3	26,34,621	5.9	12,75,580 ⁽¹⁵⁾	2.8	1,01,95,991 ⁽¹⁵⁾	22.7	
Central Provinces including Berar	1,75,95,778	19,14,808	10.9	4,54,288	2.6	12,72,804	7.2	10,76,860 ⁽¹⁶⁾	6.1	42,48,000 ⁽¹⁷⁾	24.1	
										49,40,762 ⁽¹⁷⁾	28.0	
										70,42,227 ⁽¹⁸⁾	39.8	
										

Page 216, 1918-19, Burma Column 4 (b).—Cancel 1.5 and substitute 1.3.

* Ordinary Land Revenue only.

NOTES.

(1) The figures in these tables are taken from the Civil Budget Estimates for 1920-21. The figures for 1919-20 are also shown for Burma as much revenue of that year was collected in 1920-21 owing to the dislocation of the market on the introduction of Rice Control. In some of the provinces the pay of the establishment was raised during 1920 and 1921, the actual figures for 1918-19 are therefore also shown as these furnish a more accurate comparison of general conditions.

(2) This includes Rs. 16,000 remuneration of the Inam Commissioner, a lump provision 54.30 lakhs for revision of pay of the subordinate service, a lump sum of 5 lakhs for promoting the welfare of the depressed classes and Rs. 400 for rounding.

(3) Of this, revenue surveys accounts for Rs. 10.37 lakhs.

(4) Includes lump sum provision of 7.50 lakhs for charges in connection with the reform scheme, and a lump deduction of 1 lakh for probable savings.

(5) Cost of cadastral maps and of Consulting Surveyor to Government, and his establishment.

(6) It is only in Madras and Bombay that village servants (menials) are paid by Government. In Madras the pay of the village servants (except village police) is debited to "Allowances to district and village officers." In Bombay the pay of village servants, "useful to Government," is debited to Land Records. In both provinces the pay of the village police is debited to "Police."

(7) This includes Rs. 32,000 for management of Government estates and lump sum provisions of 2.86 and 1.09 lakhs respectively for the improvement of the pay of the officers of the Indian Civil Service and of the Provincial Service.

(8) In the Central Provinces the pay of the Commissioner of Settlements and Land Records is debited to Land Records. In Burma it is debited to Survey and Settlements.

(9) This includes Rs. 66,000 commission on collections. Patwaris are shown under both heads "Land Records and Allowances to district and village officers." The patwaris shown under the latter head appear to be those of Berar.

(10) Includes Rs. 3,400 for management of Government estates.

(11) "Allowances to frontier chiefs." Village headman in the Punjab are paid by a cess specially levied for the purpose.

(12) Charges on account of land revenue collections; it includes Rs. 66,000 on account of Fishery collections and Rs 100 for rounding.

(13) Charges on account of land revenue collections; it includes Rs. 76,200 on account of Fishery collections.

(14) Includes Rs. 7,390 remuneration of the Inam Commissioner.

(15) Includes Rs. 28,752 for management of Government Estates.

(16) This includes Rs. 49,115, commission on collections.

(17) Includes Rs. 4,389, for management of Government Estates.

(18) Includes Rs. 62,877, on account of Fishery collections.

CHAPTER XX.

THE FLUCTUATING ASSESSMENT IN PRACTICE.

222. As we have seen in Chapter IV, everywhere in Burma, occupied land is liable to assessment at the sanctioned acre rates. Reduction of assessment or exemption from it may be obtained, but the degree of elasticity in the assessment varies in different parts of the province. It is at its minimum in those parts of Lower Burma in which the occupant must apply to the township officer for a reduction of assessment on fallow areas, and for remission on crops which have been destroyed. It is at its maximum in those parts of Upper Burma in which areas left fallow, and crops which fail to give a quarter of their normal yield, are exempted from assessment by the revenue surveyor of his own motion. Between these two extremes come those parts of Lower Burma in which areas left fallow are assessed at a reduced rate, and crops totally destroyed by floods are omitted from the assessment roll by the revenue surveyor of his own motion; and those parts of Upper Burma in which the revenue surveyor can omit, besides the fallow areas, only those crops which have failed completely and been abandoned unreaped. Throughout the province proportional remission can be obtained where the crop is less than two-thirds of a full crop. We have seen also that, historically, the fluctuating system has arisen from two separate causes which it is important to distinguish. The fluctuation of assessment with the area occupied was devised to ensure that the growth of revenue should keep pace with the rapid extension of cultivation. The fluctuation of the assessment with the area cultivated or the area matured was devised to ensure that in precarious areas the demand should be accommodated to unfavourable years. Where cultivation has ceased to extend and the crops are secure, so that the demand remains practically unchanged from year to year, a fixed assessment has the advantage of simplicity and certainty. Where crops are secure but cultivation is extending, the choice between fixed and fluctuating assessments depends largely on a comparison of their financial results. Where crops are insecure, the convenience of the cultivator and the difficulties of remission also require consideration. But even in those parts of Lower Burma where crops are most secure we are of the opinion, held almost without exception by officers best acquainted with the agricultural conditions, that it is essential not to discourage the following of land. We consider that the existing facilities for obtaining a reduction of assessment on fallow areas should be retained and that it is even desirable to extend them. Holding this opinion we cannot recommend that anywhere a "cast-iron" assessment on the Bombay pattern, fixed on the land, without ready facilities for reduction of the assessment on individual holdings, should be introduced.

223. Where however, cultivation is secure and the revenue is now practically constant, we consider that much would be gained by fixing the demand for individual holdings on the area occupied at settlement, with facilities for reduction of the assessment on application together with proof that the whole or a portion of the land had been left fallow, or that the crops had been damaged. We have obtained from district officers reports, to which we have already made incidental references, showing for one or more kwins in each district the history of each holding for the last ten years. Many of these show minute variations in holding areas and assessments. Some of them are inexplicable; in many cases, a total assessment exceeding and often greatly exceeding Rs. 20 varies annually by two or three annas, a variation which the cultivator cannot feel and can hardly notice; holdings of 20 or 30 acres or more change from year to year by a few decimals. Most of the changes presumably represent small extensions and, considered as a whole, indicate a remarkable degree of accuracy in the annual survey; but the revenue which they produce is not worth the trouble and the cost of survey. There is often in fact an advantage in omitting to survey them. The kwins where these small variations in the area of individual holdings occur are, as a rule, fully cultivated, except for such small patches as are required for local amenities, mostly paths for men and cattle. Extensions in such kwins may suitably be discouraged and it is undesirable without detailed scrutiny to grant rights over any land in them which may be still unoccupied; but as at present, in practice though not by rule, extensions become private land as soon as they are brought on to the map, the omission to survey, map and assess them would protect the interests of the community. Two objections should be noticed. Surveyors are required to bring the map up to date annually; even in fully occupied kwins with established cultivation these extensions of holding boundaries would gradually accumulate, and in some cases it would be desirable to recognize them by bringing them on the map, though they would remain unassessed during the current settlement. Besides these changes in holding boundaries there would also be changes in the interior detail, and although experience in Burma shows that in areas of secure and established cultivation there is very little change in the bunds separating rice fields, the gradual accumulation of error would eventually necessitate a revision of the map, at least in part. It is very questionable how far these objections are valid. Undoubtedly changes would occur, and revision would become necessary if the discrepancies between the map and the land were found to occasion difficulty in the marking of fallows and failures, but probably such kwins do at present receive least attention from surveyors, and everywhere changes of interior detail receive less attention than changes in holding boundaries. It has yet to be proved that, even in fully cultivated kwins, maps in practice can be maintained without occasional revision; in addition to annual maintenance such kwins ordinarily do need further correction at present. That the abandonment of annual survey would entail additional expenditure on periodical surveys is doubtful, and it seems probable that any additional expenditure on resurvey which the abandonment

of annual surveys involved would be more than compensated by the facility which it would give for extra work in those parts which needed most attention. The permanent survey marks would still be maintained and the surveyor would perform his ordinary duties except that he would not be required to survey changes in interior detail or changes in holding boundaries arising otherwise than by mutations. We recommend accordingly that in areas where crops are secure and cultivation stable, and holding areas and assessments change little from year to year, the assessment on each holding should be fixed at settlement to be paid annually; that the annual survey of holding boundaries and interior details should be abandoned; but that on application to the township officer, or other revenue officer duly authorised, cultivators should obtain such reduction or remission of the assessment as is obtainable in those parts of Lower Burma which have not been notified as special areas. Although annual fluctuations of assessment owing to the fallowing of poor soil would ordinarily be a *prima facie* reason against the introduction of this system, there are considerable areas of poor land held by large non-agricultural land-owners near towns where it would be suitable to fix the assessment by holdings in the same manner. Kwins in which holding settlements are to be introduced would be scheduled and any which were included in the list of kwins notified under the fallow rules would be deleted from that list. We recommend, in fact, holding settlements instead of settlements at acre rates, leaving the present system in other respects little changed. As will appear below, we further recommend extension of the concessions now made to non-cultivating owners regarding fallow rate.

224. Within limits, the same principle can be applied wherever crops are secure, even although cultivation is extending with secure but extending cultivation, are secure. In these circumstances it would be possible to fix the assessment on each holding at settlement and to treat an extension of it as a new holding. But there still remain areas where cultivation is extending and holding boundaries are ill defined. In these undeveloped areas the present system of annual assessment on the area occupied appears the most suitable. Between the two extremes of stable cultivation on the one hand and rapid extensions with fluid holding boundaries on the other, there is no clear dividing line. In some places holding boundaries are so permanent that extensions may be disregarded; in some places existing boundaries could be treated as permanent though extensions are considerable; in others boundaries are not permanent. For the first category we recommend holding settlements, for the last we recommend settlements at acre rates; for the middle category a combination of holding settlements with acre rates on extensions might prove useful, but we are of opinion that the experiment of holding settlements should first be tried in those areas where it is most likely to succeed.

225. The expediency of holding settlements in Upper Burma is more doubtful. Regarding Upper Burma as a whole, and in Upper Burma, holding boundaries not only on rice land but even on dry land are far more definite than in any but the most closely cultivated parts of Lower Burma. Certain of the irrigated rice lands there are as secure as those of Lower Burma, but the area of these is

not sufficiently extensive to justify separate treatment. The better classes of land under dry crops are comparatively secure, and the best dry lands are rarely fallowed. For such land the system of holding settlements proposed for parts of Lower Burma might be suitable. Again much of the dry land is fallowed on definite principles; sometimes one-third is fallowed each year, so that the assessment remains practically unaltered. Holding settlements on such lands would not only, as in Lower Burma, possess the advantage of fixing with certainty a demand which does not at present fluctuate widely, but would obviate the labour of annually measuring an area approximately the same but in a different position. There is however one essential distinction between the areas of secure and established cultivation in Lower and Upper Burma. In Lower Burma they are extensive and continuous; in Upper Burma, they may be extensive in the aggregate, but they lie in patches separated from each other by much larger areas of insecure cultivation. One chief advantage in a fixed assessment is the simplification of revenue machinery which it permits, but if it can only be applied to patches, instead of simplifying, it complicates the system. Moreover, the secure areas are much more difficult to pick out in Upper Burma. The advantages derived from holding settlements in Lower Burma may be found sufficient to justify an extension of the system to parts of Upper Burma and we would not debar settlement officers from considering the possibility of this, but we are unable to recommend any experiments there in this direction at present.

226. At present it is the practice in Lower Burma and in parts of Upper Burma to calculate the annual assessment as if the holding were fully cultivated and from the assessment on the holding to subtract any allowance which may be necessary on account of fallows and failures. It has been suggested that an extension of this practice would facilitate the annual calculation of the demand and reduce the scope for error. But in Upper Burma holdings which in normal years are fully cultivated are seldom found and except for these a nominal assessment on the fully cultivated holding would only be misleading. Take for example a holding of 15 acres of second class dry land assessed at Re. 1 an acre of which annually one-third is fallowed. The nominal assessment on this holding would be Rs. 15, but every year the actual demand would approximate to Rs. 10; thus the nominal assessment would have no relation with the facts. Again there are large tracts of poor land where the fallow area annually exceeds the cultivated area; in some dry zone districts for example half the occupied lands is annually left fallow. On such land the subtraction of the fallow areas would involve more arithmetic than the addition of the cultivated areas. In any case it would still be necessary to calculate the area under each crop for the annual crop statistics. It does not appear therefore that any considerable saving of labour will result from the calculation of holding assessments except when holding settlements are introduced.

227. It does not seem necessary that holding assessments should only be introduced at settlement. So long as the conditions of settlement are not altered to the prejudice of cultivators they can be altered at any

The introduction of holding settlements.

time. We propose that people with whom holding settlements are made shall still be able to obtain the present concessions on account of fallows and failures. It should be recognized however that at present in notified kwins agriculturists can obtain fallow rates without application, and if holding settlements were introduced into such kwins they would no longer enjoy the same facility; provided however that this point receives due consideration it would be quite permissible to introduce the system anywhere in Lower Burma now, by taking as the amount of the holding settlement the full assessment on the area shown as occupied in the current land records map. But the selection of kwins to which the system should be applied would present some difficulty. It seems preferable therefore in the first instance to introduce the system under the direction of a settlement officer in the course of settlement, or at least by an officer with settlement experience placed on special duty for the purpose. Then after a suitable procedure for the selection of kwins had been devised it could be applied in other districts during the currency of settlement. In addition to the present distinction between the notified and unnotified kwins we have proposed to introduce a new distinction between scheduled kwins with holding settlements and unscheduled kwins. It may ultimately be found that all unscheduled kwins may suitably be included in the list of notified kwins. We have not sufficient material to decide how far this may be possible and we deprecate prejudicing the experiment by its extension at the outset to kwins which are not obviously fitted for it.

228. We have already explained that the practice of leaving rice land periodically fallow has always been regarded as expedient in Lower Burma, and that we accept this view. On the other hand, the concession of fallow rate on any land left uncultivated has been abused by owners of large areas who have been content to hold land as a speculation without attempting to cultivate it so long as they are only required to pay a fallow rate of two annas per acre. The policy of Government has therefore been to discriminate against non-cultivators by requiring them to pay on fallow land either the full rate or a rate higher than the fallow rate, without so far restricting the privilege as to encourage the exhaustion of the land by continuous cultivation. Cultivators, also, who leave land fallow for profit may be required to pay a rate higher than two annas. It is not easy to carry out this policy; it is hard to determine whether a man is a cultivator or a non-cultivator, or to decide the reason for which land has been left fallow. Adequate enquiry into these matters would involve much labour, and where the question has to be decided by an overworked township officer in a very summary manner the practical effect of the direct ones is uncertain. In one respect they are especially unsatisfactory. In notified kwins the revenue surveyor may assess at the two-anna rate one-sixth of the land held by a non-cultivator. It may well happen that the same piece of land is exempted annually and that other land is exhausted by annual cultivation; thus both objects of the concession are defeated. We recommend that, in kwins where holding settlements are introduced, all landowners should be entitled to an assessment at the two-anna fallow rate on any land which is left uncultivated, on

application and proof that it has been cultivated continuously for so many years, ordinarily three to six, as may be considered to justify fallowing for soil recuperation. We would also allow cultivators in such kwins, but not non-cultivators, to obtain an assessment at the two-anna rate for such other reasons as would now entitle them to an assessment at this rate. These arrangements would also apply to unnotified kwins not included in the schedule. In the remaining kwins, *i.e.*, those which are both notified and unscheduled, we would allow the revenue surveyor to assess fallow land at the two-anna rate in all cases where it appeared in his register as the property of a cultivator; owners registered as non-cultivators should be required to apply to the township officer for the concession, and to justify it in the same way as elsewhere. We consider that the existing provisions relating to intermediate rates introduce an additional complication which it is desirable to avoid, and the area which at present receives the benefit of these rates does not appear to us sufficiently large to justify their continuance. We recognize that the circumstances of certain districts such as Akyab may require special consideration, but we are of opinion that ordinarily the full rate or the two-anna rate should be charged. If any departure from this rule is necessary, the intermediate rate should be specified and notified by Government as applicable to the whole district. It might also properly be required that applications for the two-anna rate should contain a certificate to the effect that the land had not been used for profit or for any non-agricultural purpose.

229. At present all occupied land left fallow in Upper Burma is and in Upper Burma. totally exempted from assessment. The introduction of a fallow rate has been advocated, and the projected unification of the two revenue systems adds weight to the suggestion. The chief reason for the change is that in Upper Burma, in years of exceptional rainfall, patches of poor land are cultivated and brought on to the map and registers. These tend to remain, contrary to paragraph 447A of the Land Records Manual, and thus add to the work of revenue surveyors. It is suggested that a fallow rate would diminish this tendency. That is quite possible, but there are difficulties in adopting the proposal. Much of the land which would become liable to a fallow rate would only be assessed at four annas when cultivated successfully and a two-anna rate, or even a one-anna rate, on it, when fallow, would be excessive. Again, the imposition of a one-anna rate on fallow land would result in a material enhancement of the total revenue, which contrary to the practice of settlement, would be taken from the poorest land. We are unable therefore to recommend the introduction of a fallow rate in Upper Burma.

230. In Lower Burma the surveyor may exempt from assessment crops which have been totally destroyed by flood, but, except in notified kwins, he may only do so after the township officer has certified the destruction, which in such kwins must affect more than one-third of the area of the kwin. Non-cultivators are only allowed this concession in respect of one-sixth of the land held in the kwin. Destruction by flood is the usual cause of damage in Lower Burma but that does not seem adequate reason for restricting the concession to damage thus occasioned. Nor does there seem any sufficient reason for the

distinction between cultivators and non-cultivators. We are of opinion that crops totally destroyed by any cause should be exempted from assessment, and that cultivators and non-cultivators alike should equally be entitled to remission. We recommend that in kwins where holding settlements are introduced landowners should be required to apply for remission, as in those kwins it should rarely be necessary; they should also be required to apply for remission in unnotified kwins. In no case should any distinction be made between cultivators and non-cultivators, or between damage from flood and from other causes. It also deserves consideration whether in the less secure districts such as Promé a crop which fails to yield one-quarter of the normal should not be treated as a failure.

231. In Upper Burma total failures are everywhere exempted and in precarious areas crops other than those assessed at the *kaing* season are exempted if they yield less than one-fourth the normal.

Crops assessed at the *kaing* season are not necessarily grown on *kaing* land and in precarious areas should, in our opinion, receive exemption to the same extent as crops assessed at other seasons, except that crops grown on island and riverine land should only receive exemption in the case of total failure. It may be noted here that the assessment of valuable island crops should not be entrusted to temporary surveyors as is now a common practice. As regards rice land the present rules seem suitable; on such land the stubble is on the ground for several months and indicates the degree of failure. With dry cultivation however, it is more difficult to estimate failures and also more difficult to inspect them, as the land is often ploughed up and cultivated with another crop. A revenue surveyor who is empowered to exempt dry crops which only give a quarter of the normal yield is granted wide latitude in a difficult task. The manner in which he exercises his discretion probably depends largely on the superintendent. With lax supervision he may exempt crops which should have been assessed; but ordinarily the assessment is low, there is little profit in corruption, and the surveyor shows his zeal and keeps on the safe side by assessing crops which should have been exempted. It is possible, however, that the rule works as a safety valve and reduces the number of remission cases in poor years. The evidence before us is insufficient for a definite recommendation that dry crops should only be exempted in the event of total failure and, in any case, a change of this nature could hardly be introduced during the currency of a settlement in which the rates have been based on the understanding that crops yielding less than a quarter of the normal will be exempted. We recommend therefore that in Upper Burma one task of the settlement officer during the first stage of operations should be to ascertain how the rules for exempting failures have been applied in actual practice, and that, in the report on his assessment proposals submitted at the end of the first stage of settlement operations, he should state how far the exemption of dry crops which give less than a quarter of the normal yield is necessary.

232. We have explained that, according to the degree of insecurity, the cultivator is assessed on the occupied, or on the cultivated, or on the matured area, and that in the most precarious tracts he is only assessed if

Remissions
and refunds.

the crop yields a quarter of the normal. But whatever standard be fixed as rendering him liable to assessment by the surveyor, he can still obtain partial or total remission from the township officer if his crop falls one-third below the normal yield. Thus in the precarious parts of Upper Burma, if a cultivator may expect 60 baskets of paddy but gets less than 15 the surveyor exempts him from assessment; if he gets 15 but less than 40, the surveyor assesses him but he can apply to the township officer for remission proportional to the loss. Where a crop yielding less than a quarter of the normal escapes assessment, no machinery for remission would seem necessary, and the figures in the Land Revenue Administration Report bearing on the subject indicate that little use is made of the remission procedure in Upper Burma; it should be noticed however that in certain districts these figures do not cover water rate and the irrigation share of land revenue. The remission procedure in Upper Burma is in fact practically confined to districts where crops are assessed except for total failure. It would seem possible, by extending the application of the concession exempting crops less than one-fourth the normal from assessment, to abolish the remission procedure in Upper Burma. This is not a point on which a decision can be reached without much more detailed enquiry into the working of the present system than we have been able to make. We recommend however that the feasibility of the proposal should be further examined, but we regard it as doubtful whether the exemption of a crop which yields less than one-fourth the normal is advisable in areas where rates are high. In Upper Burma the Deputy Commissioner may now authorize a general reduction of the assessment for the kwin as a whole or for any particular class of land or kind of crop. Some provision of this nature would still be required for years of abnormal disaster.

The remission procedure is defective in certain respects. Frequently special officers are employed on remission work who have little or no experience of maps or field work. Where it is necessary to employ special officers we consider that experience in the Land Records or Settlement Department should be regarded as of great importance. Inspectors of land records selected from the district staff might be tried for this work and while on special duty should be temporarily appointed Deputy Township Officers. A further defect in the procedure is that, where crops are damaged, all the land held by the same man as owner, tenant, or mortgagee throughout the village tract must be taken into account in estimating the proportion of crop lost. This rule, although an improvement on the former rule in Lower Burma when the whole township was taken as the unit, must be difficult to apply and liable to give inequitable results. We are of opinion that, whenever the crops on any holding are so damaged as to entitle the occupant to remission on that holding, he should receive it without regard to the crops on any other land which he may own.

The granting of remissions on land irrigated from a Government source presents special difficulties. Officers of the Irrigation Department are entitled to express an opinion on proposals to grant remission for partial failures, but in practice are unable to do so as there are no crops left for inspection by the time that the papers reach them. Thus the procedure involves delays, prejudicial to the cultivators, without conferring

additional protection on the irrigation revenue. In these circumstances we would recommend that, as an experiment, revenue officers should be allowed to dispose finally of applications for remission, without prior reference to irrigation officers. After orders have been passed the proceedings should be sent to the Executive Engineer for scrutiny. This should ensure that applications are carefully considered, and if subordinate revenue officers are found to allow remission to a greater extent than the Executive Engineer considers permissible, the experiment can be terminated.

Refunds of revenue give much trouble to the assessee and to the revenue office. We are of opinion that unless a refund can be allowed before the revenue is collected it is rarely worth making unless the sum be very considerable. We have considered a suggestion that refunds, especially if small, should be deducted from the next following assessment under the same head of revenue but, in view of the complication of accounts which this procedure would introduce, are unable to recommend it for adoption.

233. Hitherto in this chapter we have been examining the practice of fluctuating assessments mainly with regard to the convenience of the cultivator. It is necessary also to examine the arrangements for protecting the revenue by scrutinizing the demand. Reliance, now, is chiefly placed on inspection in the field. Every year however there is an additional check on a large scale; the revenue demand for the current year in each kwin at each assessment season and the corresponding demand for the previous year are compared by the superintendent of land records, the Akunwun and the Deputy Commissioner; any discrepancy should receive special attention in the field. For Lower Burma, where cultivation normally expands and rarely decreases, and the revenue, consequently, should rise with some degree of regularity, the check now exercised is probably sufficient. But in Upper Burma, and also in those parts of Lower Burma where crops are insecure, this practice of comparing assessment totals might usefully be extended. In such circumstances a comparison of one year with another is of little use; a comparison over a period of years is necessary. Again, if conditions vary from place to place, and as in Upper Burma, the distribution of rainfall is capricious, a comparison of conditions within a single kwin gives little information. Continued observation over a wide area of similar country is required. We are of opinion therefore that the demand should be calculated annually by tracts and compared with the demand calculated for the tract in the year of settlement by the Settlement Officer. The comparison might usefully be made in a set of graphs, one for each tract, maintained by the superintendent of land records. Comparison over a wider area than a single district is often desirable. In those parts of the Punjab where fluctuating assessments are in force the demand proposed for the year is annually reported to the Financial Commissioner for scrutiny; we consider that in Burma a fuller measure of control on the part of Commissioner would be useful, and recommend accordingly that for each settlement tract a graph showing the fluctuations of demand should be maintained in the district office and that duplicates should be maintained in the office of the Commissioner.

CHAPTER XXI.

THE ANNUAL ASSESSMENT AND COLLECTION OF REVENUE.

234. The work of the surveyor falls under the following heads.—

(i) Assessment and maintenance of the economic record by the collection of annual statistics.

(ii) Maintenance of the Record of Rights.

(iii) Survey (including inspection of boundary and survey marks) and Mapping.

(iv) Miscellaneous work in connection with Prices, Crop Forecasts, the maintenance of Township Books, Progress Reports and giving evidence in Courts.

The assessment must be carried out when the crops are on the ground and are due or almost due for harvesting. Survey work proper, excluding measurements of cropped areas, is only possible when the men are not employed on assessment. In the field survey work is least expensive and best supervised when it is carried out by groups of surveyors. In many districts it is necessary to group surveyors because in some charges there is little or no survey work and in others enough work for several men and, as we have seen in Chapter XVIII, only by organising the survey on a district basis has it been found possible to cope with the arrears. In office, likewise, the computation of areas can only be carried out by men working in pairs under responsible supervision; mapping can only be satisfactory if surveyors who have special skill as draughtsmen are selected for this work. Where assessment work does not allow spare time for survey special arrangements must be made, but over most of Lower Burma assessment work is completed by the end of February and it is then possible to employ the staff on survey work. On the other hand until the crops are off the ground survey is very difficult. The obvious solution is to allot the first portion of the field season to assessment work and the latter portion to survey. For the last half of the season the men must work in groups, and they must also work in groups during at least part of the recess. The remainder of the recess is devoted to the compilation of statistics for the past year, and the preparation of maps and registers for the coming year. This is clearly work which will be best carried out if the men are supervised. At present much time and money is wasted, especially in the delta, by requiring the superintendent to visit outlying survey charges which are sometimes only accessible by sampan. The work is uninteresting and involves uncomfortable travelling, with the inevitable consequence that it is apt to be neglected. It seems expedient therefore to group the men for the whole of the recess, and the most suitable place would be the township headquarters, or in some cases the district headquarters. This would leave the surveyors for only three or four

months annually in their survey charges. It has always been a rule that men should reside within their charges, but the rule is very often broken or only observed in name and, so far as it is observed, hampers administration. The surveyors are expected to live in houses substantial enough to diminish the risk of damage to their records and this means that they must either purchase or build a house. Where this is the case a transfer may be a serious punishment, often unmerited; for example, if a slack or inexperienced surveyor has let his charge get into disorder a good man, sent to repair the mischiefs, has to suffer the penalty. We are therefore of opinion that in Lower Burma surveyors should be permanently stationed at the township headquarters or in exceptional cases, as perhaps in Tavoy, at the district headquarters. The main argument to the contrary is that residence in the charge promotes honest and accurate work, and that, unless the reporting of transfers is made easy, people will not report them. But residence of the surveyor within his charge has not been found to ensure the accuracy of the registers at present; parties to a transaction who do not live within the charge will not trouble to go there to report it and, where a large proportion of landowners and mortgagees are non-resident, the fact that the surveyor resides within his charge militates against punctual reporting. Moreover, now that many transactions are registered, and verbal report is consequently unnecessary, the argument loses much of its weight. For some Upper Burma districts however the proposal to group surveyors may not be feasible, and possibly in certain Lower Burma districts the conditions forbid grouping; the case of each district will require separate consideration.

235. On the procedure now recommended the surveyor will start the year by preparing the annual map and assessment register. We have explained that, during each recess in the second stage of settlement, the newly attested individual record of rights will be prepared for a portion of the district. The surveyors concerned will prepare their maps and registers in the settlement office under the supervision of the superintendent of land records and the direction of the settlement officer. As explained elsewhere the superintendent of land records should, for certain definite purposes, be gazetted an assistant settlement officer, receiving an allowance as such for the duration of the settlement. The assessment register will differ somewhat from the present register, but the manner of preparing the map and register will, as regards most details, remain unchanged. The surveyor will then return home to the township headquarters and proceed to his charge at the beginning of the field season in November. He will then enter in his map and registers kwin by kwin the particulars required for assessment. In the Field Register he will enter details by fields where necessary. In this or in the Annual Assessment Register he will also enter particulars relating to tenancies and such other information as may conveniently be recorded by holdings. Wherever he finds a change in the occupation of land by mortgage, usufructuary or non-usufructuary, redemption or sale he will enter the particulars in his Mutation Register. The responsibility for ascertaining all changes will rest on the surveyor. A change in holding

The surveyor's
calendar.

boundaries will be treated as a mutation or not according as the kwin is, or is not, scheduled for holding assessments. During the same portion of the field season he will, as at present, carry out petty corrections of survey details. By the middle of February he will be available for survey work and for this will be posted to a survey group until the middle of May, when he will come in for recess. The recess survey work, computation and any mapping necessary, and the compilations of annual statistics will then be put in hand. Meanwhile the mutation registers will have been made over in February to the township officer for attestation of the changes. Possibly this work could be combined to some extent with the collection of revenue. The township officer might require the assistance of surveyors in verifying mutations and the superintendent could detail a certain proportion of the men in each township, say 25 per cent., for this work and for other miscellaneous work in connection with mutations and petty surveys. The Register of Mutations would be filed with the last year's copy of the Record of Rights. This would complete the work of the year and the preparation of the map and register for the next year would then be undertaken. The assessment register would be copied from the record of rights as corrected up to date by the inclusion of all attested mutations. The routine of the previous year would then be repeated. This procedure is devised primarily with reference to Lower Burma; its adaptation to other parts and simplification where necessary are discussed in the following chapter.

236. One detail in the present procedure of annual assessment has justly been criticised. Hitherto holdings have been renumbered annually so that the parcel of land represented by Holding 7 in the maps and registers of one year may become Holding 6 or Holding 8, or even 11 or 17 in the following year. This renders identification difficult. We favour the principle that holding numbers should remain permanent throughout the currency of a settlement, but there are practical difficulties in making the holding numbers permanent where the holding boundaries are unstable. In our opinion permanent holding numbers imply permanent areas. The histories of holdings received from district officers show that in kwins which may be considered as fully occupied small changes in holding area are numerous enough to constitute a serious difficulty. We have even found that extensions of cultivation still occur in kwins where they have been prohibited on the ground that the land was fully cultivated. Many of these extensions would seem due to a gradual and almost imperceptible encroachment of an external boundary over small creeks, cattle paths and on such waste land as should be preserved for village amenities. We have recommended that in kwins scheduled for holding settlements extensions should be disregarded and we are of opinion that nowhere need petty extensions of less than one acre be brought on to the map or assessed to revenue; this would protect the title of Government over waste land. Larger extensions should be given a new holding number which should be written as a fraction with the main holding number as a numerator.

Another difficulty arises in connection with the system of holding numbering. At present holding numbers run in serial order within

the main kind. This system has many inconveniences and there is a considerable body of opinion in favour of ring fence holdings with the property unit as the holding and a single holding boundary enclosing all main kinds and classes. We share this opinion but would like to see experiments made before advocating its general introduction. The objections to ring fence holdings are partly due to the present form of the registers. With registers somewhat on the model of those now being tried in the Yamethin and Tharrawaddy Districts, ring fence holdings would seem more convenient than main kind holdings. Again, at present, different holdings belonging to the same owner are grouped together in the register. The transfer of any holding would destroy the grouping and as the grouping can not be permanent it would seem preferable to arrange permanent holdings in their serial order. These details should be settled before the present holding numbers are stereotyped and the general introduction of permanent holding numbers does not seem to offer great advantages until the forms of the registers have finally been decided. Meanwhile superintendents should be directed to adhere to the holding numbers of the previous year so far as practicable. The amalgamation of holdings should not obliterate their holding numbers, and subdivisions should be differentiated by a distinctive suffix. Thus, if the owner of holding 17 bought holding 21 he should be registered as the owner of holdings 17 and 21; their numbers should not be replaced by a new number, say 18. If holding 15 were subdivided the parts should become 15A and 15B; in subsequent partitions the same principle should be followed and 15A if subdivided should become 15A1 and 15A2.

237. Mr. Lowry when Settlement Commissioner drafted a new Land Records Manual, and new forms of registers. The new Land Records Manual. In many respects the new manual is a great improvement on that now in use. But the instructions contained in a Land Records

Manual must be largely determined by the forms of registers it prescribes. The forms are not yet finally decided, and they will require modification if, as is recommended, a record of rights is introduced; it appears premature therefore to introduce the new manual at once. Moreover, the draft manual contains numerous changes in points of detail, so that it would be difficult for superintendents and the subordinate staff to obtain a thorough grasp of the contents if the whole were brought in at the same time. We are of opinion that the manual as now drafted should be used as a basis for replacing the present manual in suitable instalments. The chapters on office organization might, subject to further scrutiny in detail, be introduced at once and the corresponding portions of the present manual cancelled. Those portions of the manual dealing with field work should not be issued until orders have been passed on this report. When publishing any portion of the new manual it would be well to draw attention to new matter by a line against it in the margin of the text.

238. The tax ticket, frequently but less correctly termed Receipt Books, "tax receipt," is a written notice of the land revenue demand served annually on the person from whom it is due. It is peculiar to the Burma

land revenue system and the substitution of a system of receipt books has been suggested. We have examined the Indian practice in this respect. It varies from province to province. The most elaborate receipt books are those of the Central Provinces and Berar. There the cultivator receives a small book of printed form showing on the front page the revenue (or rent) due on every holding which he possesses in the village, and on subsequent pages the details of the demand are calculated annually. In Madras and the Punjab the cultivator receives at settlement a statement showing the details of the demand, but these are not entered in the receipt book, which only shows the revenue paid on each holding and the date of payment. In Bombay the cultivator receives at settlement a statement of demand, but for his annual payment he receives only an acknowledgment that a certain sum of money has been paid on account of land revenue. Prior to the introduction of the record of rights his payments were, as in Berar, entered in a receipt book which gave particulars of his holding. This receipt book could be, and frequently was, used as evidence of title, both in disputes in the civil courts and when money was borrowed on landed security; it was therefore abolished on the introduction of the record of rights so that the cultivator should depend solely on the records of rights for evidence of title and be deprived of any alternative method of establishing it. The advantage claimed for the receipt book system is that the cultivator can know exactly where he stands in regard to revenue. With a system of fixed assessments accompanied by suspensions, where arrears of revenue are frequently carried on from year to year, a permanent account in receipt book form is obviously convenient. But with a fluctuating assessment which renders suspensions unnecessary, no reference to previous payments is required; there is no running account between Government and the cultivator as the account is settled up each year. Under such a system it would be difficult, if not impossible, to prepare a receipt book in a useful form since, when the assessment fluctuates according to the area cultivated or matured, the initial statement of the full demand can only show the area in each assessment class, the rate, and the demand, on the assumption that the area remains unchanged and is fully cultivated. On most dry lands and some rice lands, there is normally a certain area of fallow and a statement of demand on the assumption that the whole area is cultivated would be misleading. On the other hand the procedure in regard to tax tickets has distinct advantages. Nowhere in India does the cultivator receive year by year a written notice of the land revenue demand due from him. He is told verbally how much is due and the payment is recorded. In Burma the statement of demand serves also as a receipt; for every payment a receipt is given automatically. In India generally the rules prescribe that an entry shall be made in the receipt book at every payment, but in practice strict compliance with the rules is not found possible. In Madras entries are only made in the receipt book if the pattadar brings the money in person. If payment is made by a mortgagee, tenant or other interested party, a receipt is given, usually in a printed form, but sometimes on a plain sheet of paper, and the particulars are copied into the receipt book

when it is next produced. In the Central Provinces payments are entered in the receipt book by the village surveyor (patwari) but it is recognized that the entries cannot always be made at the time and the surveyor is therefore required to place on record whether the statement regarding payment was admitted, made *ex parte*, or disputed. Thus, although the cultivator does not receive a receipt at the time of payment, his receipt book shows how his account stands. Only in regard to water rate does the practice anywhere in India resemble that of Burma; in both the Central Provinces and the Punjab the procedure in connection with water rate is very similar to the Burma practice regarding land revenue. This is significant in that the water rate is a fluctuating demand and indicates that, with a fluctuating demand, a system of annual tax tickets somewhat on Burma lines is essential. The idea of a receipt book showing payments year by year is attractive, but we are of opinion that with a fluctuating assessment the advantages are small and the difficulties disproportionately large. We are unable therefore to recommend any departure from existing practice in this respect. The receipt book system would better suit those tracts for which we have recommended holding settlements but, as even there, the cultivator's account will still be annual, and the individuals with whom the holding settlements are made will still be able to obtain concessions on account of fallows and failures, we see no particular advantage in its introduction, and there is the positive disadvantage that it would mean two different systems at work side by side.

239. As has been explained in Chapter VIII the tax tickets are prepared in the district office. We have considered Tax tickets. the feasibility of requiring surveyors to prepare them. At present the surveyor writes up his register and calculates the assessments. Temporary clerks called section writers copy the assessments on to the tax receipts by the thousand in the district office. There may be mistakes but there is little chance of a deliberately false entry. The assessment roll is sent to the headman and the tax ticket must agree with the entry in the assessment roll. Fraud is only possible if the headman, the assessee and the section writer jointly connive at it. Pre-arrangement is hardly possible because no section writer knows what assessment rolls he will receive. If the surveyor prepared the tax tickets himself there would be a wide opening for fraudulent discrepancies between the assessment roll and the tax ticket. We are of opinion therefore that the existing procedure is satisfactory and that no procedure could be much cheaper, as the work requires little skill and tax tickets can be turned out in large quantities in a short time. In some districts, perhaps in most, insufficient attention is paid to clearness in handwriting and district officers might be reminded of the importance of this. A more serious defect is the absence of sufficient detail. The form of tax ticket in Lower Burma provides for entries showing the holding number, the name of the assessee, the area assessed in each main kind, the assessment, the cess and the total demand. In Upper Burma it provides for the holding number, the name of the assessee, the area under each crop matured and the amount paid as land revenue and water rate. The information actually

furnished in the tax ticket varies however from district to district. Frequently no more than the holding number, the total area assessable and the total demand including cess is given. We are of opinion that the tax ticket should state the rate on each class, the area assessed at each rate and the total demand, showing separately the land revenue on each class, the cess, water rate and any punitive tax; the cultivator will then be acquainted with all the details of the demand on him. One of the chief defects of the fluctuating system is the opening which it leaves for carelessness and corrupt practice. If the cultivator can check the account an additional guarantee of its accuracy is provided which is absent under the system now obtaining and although the insertion of these additional particulars would mean extra work and extra expense we consider that the cultivator is entitled to the information. We are therefore strongly of opinion that the details in the tax ticket should be full enough to enable the cultivator to check every item and to ascertain that the account has been prepared correctly.

240. With regard to the collection of arrears it is undoubtedly the case that in India, both by rule and practice, revenue officers are much more reluctant than in Burma to proceed against the land of a defaulter. This would seem largely due to a difference in economic conditions and does not necessarily indicate that the procedure in Burma is unduly harsh. In Lower Burma not long ago land was very little valued and readily abandoned. Nowhere in India did we find provisions for the temporary relinquishment of land. And, although in Burma most land, and all land under regular cultivation, is highly valued now, there still remains a large area of new land in Lower Burma not yet reclaimed from swamp which landless men try to bring under cultivation and, after reaping such crop as it may yield, abandon if unprofitable. Such land may be resumed year after year for non-payment of revenue; in some cases it remains on the map paying a fallow rate until landholder's rights have accrued and, if abandoned then, is sold for the revenue of that year. In circumstances like these much more hardship would be caused if, in accordance with Indian practice, action were taken in the first instance against the person or the moveable property of the defaulter. Thus it is a tradition which is now definitely embodied in the directions that warrants attaching a few cooking pots and warrants of arrest should be issued rarely, and as a corollary of this tradition it is the practice to proceed in the first instance against the land. Again, it has always been an accepted principle that land revenue shall be collected promptly. This would seem partly due to the same causes. When land was readily abandoned delay involved the risk of losing revenue, and this doubtless has contributed to the development of the present summary procedure.

241. In Madras the tahsildar is allowed by law to proceed against the moveable or the immoveable property of the defaulter, or against both at once at his discretion. In practice it is usual to distrain moveable property first. The distrainer takes with him a demand in writing specifying the amount of the arrear. If he does not receive payment at once, he makes the distraint and compiles an

Defects in the collection of arrears.

Indian procedure.

Madras.

inventory of the property distrained. A departmental order prohibits him from attaching the implements of husbandry and one pair of plough cattle. Notice is then published in the village by beat of drum specifying the place and date of sale, which must not be earlier than 15 days from the publication of the notice. If the amount for which the property is sold is less than the revenue demand, the tahsildar issues a second written demand, specifying the amount still due and the time in which payment must be made. If this fails in its object the land of the defaulter is attached and the attachment is notified by proclamation on the land as well as in the District Gazette. The attachment is made by affixing a notice conspicuously on the land that unless the arrear is paid with expenses before a specified date the land will be brought to sale. Should the arrears still remain unpaid a second notice in detail is published at the Collector's and Tahsildar's offices, the nearest police station and on the land; in this notice the date of the sale, which must be at least thirty days after issue of the notice, is given, with particulars of the land to be sold. The defaulter or any person claiming an interest in the land may still have the sale stayed by tendering the arrears and expenses at any time before sunset on the day previous to that appointed for the sale. But if no such tender is made, the land is knocked down at public auction to the highest bidder, who must at once deposit 15 per cent. of the purchase price. The balance must be paid within thirty days and if not paid the 15 per cent. deposit is liable to forfeiture. Even after the auction sale anyone who claims an interest in the land sold may have the sale set aside by depositing in the treasury, within thirty days of the sale, the amount of the arrears and expenses, with five per cent. of the sum for which the land was knocked down. The Collector has no discretion in the matter; he must set aside the sale and return the purchase money to the purchaser, who receives in addition the five per cent. deposit. A sale may also be set aside by the Collector, on application made to him within thirty days, on the ground of material irregularity, mistake or fraud in publishing or conducting it provided the applicant can show that he has thereby sustained substantive injury. Arrears of land revenue carry interest at the rate of 6 per cent. per annum.

In Bombay similarly the Collector may impose as a penalty or as interest a charge which may not exceed one-fourth of the amount overdue. The processes by which arrears can be recovered include service of a written notice of demand, forfeiture to Government of the holding in respect of which the arrear is due, sale of the defaulter's interest in other immoveable property, distraint and sale of moveable property, and arrest and imprisonment of the defaulter. When the Collector forfeits a holding, he may sell it or dispose of it otherwise, for example by grant to a pauper cultivator. A Mamlatdar (Township Officer) is bound to issue a notice of demand in the first instance, but superior Revenue Officers may employ any one of the processes at their discretion; ordinarily notice is issued ten days after the arrear has accrued. When a distress is made against moveable property, such things as cots, cradles, household utensils and grinding stones and the necessary cattle and implements of husbandry are exempt from distraint as if

the provisions of the Civil Procedure Code applied. When a defaulter is arrested, he is detained in custody for ten days in the office of the Collector or Mamlatdar and on the expiry of the ten days, if the arrears are still unpaid, he may be imprisoned in the civil jail. When the arrears, penalty, costs and subsistence money exceed fifty rupees, the maximum period of detention is six months, and is no more than six weeks when less than this amount. When immoveable property is brought to sale written notice of the time and place must be published at the Collector's and Mamlatdar's office and at a public building in the village as well as at the defaulter's house, and at least thirty days must elapse between the publication and the auction sale. The purchaser must deposit at once 25 per cent. of his bid and the balance within fifteen days from the date of sale. On application within thirty days the Collector may set aside the sale, if he considers that material irregularity, mistake or fraud in publishing or conducting it has brought substantial injury to the applicant. He may also set it aside for any reason which he thinks sufficient, whether on application or of his own motion, recording his reasons in writing. Otherwise the sale is confirmed after thirty days.

In the Punjab, when a headman applies to the tahsildar for recovery of arrears of land revenue from a defaulter, the tahsildar serves a writ of demand, at the same time requiring the defaulter to appear before him on a fixed date unless the demand is paid in the meantime. On the defaulter's appearance enquiry is made and, if the existence of the arrear is proved, the tahsildar proceeds to recover the sum overdue. This may be done by arrest and detention of the defaulter, by distress and sale of his moveable property, by putting a neighbouring land-owner, who is willing to pay the arrear, in possession of the defaulter's holding for a term which must not exceed fifteen years, by sale of the holding or by proceeding against other immovable property of the defaulter. Sale of the holding requires the previous sanction of the Financial Commissioner and, when land is so sold, it vests in the purchaser free of all encumbrances. The proclamation of sale is made near the land by beat of drum as well as by notices posted at the Collector's and Tahsildar's offices and served on the defaulter. At least thirty days must elapse between the proclamation and the sale. The sale is held by the Collector himself or by a revenue officer specially appointed by him. The purchaser must deposit at once 25 per cent. of his bid and pay the balance within fifteen days. The sale must be confirmed by the Commissioner and may be set aside by him on proof of material irregularity or mistake entailing substantial injury.

In Berar the law is the same as in Bombay. It is unnecessary to describe the procedure under which arrears of revenue are recovered from large land-owners in the Central Provinces. Landlords themselves recover arrears of rent through the civil court. A decree for arrears may be transferred to a revenue officer for execution by the ejectment of the tenant, but the revenue officer may postpone the ejectment for a period not exceeding four months to allow the tenant time for payment. In ryotwari tracts failure to pay the revenue is met by

ejection from the land, which may then be allotted to someone else ; the land is not put up to auction.

242. Thus in India the procedure is clearly more leisurely than in Burma. The problem to be faced is not the same. In India default appears to result from bad seasons or from causes personal to the ryot which he can with difficulty combat, whereas in Burma it is often the absentee landlord whose land is sold, usually in consequence of his own contributory negligence. We would however point out that the economic conditions in which the existing procedure originated have changed and that a closer approximation to Indian procedure is now feasible. But there seems no sufficient justification for regarding the procedure for collecting arrears as generally harsh. It has repeatedly been impressed on subordinate officers that harshness should be avoided. The provisions regarding arrest and attachment, already mentioned afford proof of this, and the deputy commissioner is required to check any tendency of a subordinate revenue officer to issue processes too freely. Statistics in Burma regarding the issue of processes for the recovery of revenue do not compare unfavourably with those of other provinces. Moreover, should the tradition of prompt payment and of proceeding in the first instance against the land occasion hardship, there is an appeal to higher authorities. These cases alone come to notice ; and this is calculated to present a false picture of the working of the system to officers who only see such cases, unless they bear in mind that they are dealing with the exception and not the rule. It is however probable that hard cases are more frequent than they should be. The rules require that in the event of a contumacious default, or when there is no likelihood of the amount due being otherwise recoverable, the revenue officer shall proceed in the first instance against the land of the defaulter. There is undoubtedly a tendency to overlook the conditions on which alone the summary procedure is permissible. Again, a sale by summary procedure where there is no application to upset it is ordinarily confirmed as a matter of course by the deputy commissioner on the expiry of two and half months from the date on which the revenue became due. Land revenue on the main crop in Lower Burma falls due on the 15th February. When there is any difficulty in collecting the revenue, the sale may not be held until late in March or even in April, which allows a very narrow margin for appeal if the defaulter does not know of the proceedings until the sale has taken place. It would seem also that the precautions with regard to publishing the notice of sale and giving notice to the defaulter are not always observed so strictly as they should be. It must be admitted therefore that unmerited hardship is at times caused and we think it would be well to render the Burma procedure less summary. At least fifteen clear days should be allowed to pass from the date on which the township officer at the headman's instance issues to a defaulter a notice of demand combined with an order prohibiting alienation of the land. If the arrears are not paid within this period thirty days more should elapse before the land is dealt with by sale or otherwise. By allowing this extra time it would be possible to find out with accuracy what part of a defaulter's holding was held under landholder's right and what on other tenure. This is difficult under the

present system and the township officer not infrequently purports to sell a permanent, heritable and transferable right where no such right has yet accrued. Again, less pressure to clear the revenue demand by the 31st March would allow more care and publicity in the conduct of an auction sale, so that land would be less likely to pass into the hands of non-agriculturists at a nominal sum. The present rules and practice are too rigid. In Lower Burma if the township officer puts up to auction land which is not at the disposal of Government, he must knock it down to the highest bidder even if the bid is no more than the amount of the arrears and costs; it is only when no one offers this amount that he may buy in the land for Government. No procedure exists for divesting such land of its existing encumbrances and interests except by selling it at auction or buying it in for Government. We have noticed that in Bombay the Collector may impose a penalty amounting to one-fourth of the revenue for delay in payment and may forfeit land to Government without putting it up for auction. We view these two provisions with favour and in our opinion they should be inserted in the Burma rules.

The former provision would make for speedy payment; the deputy commissioner should be allowed to delegate the power to impose a penalty to selected township officers. The second provision, though it might involve a trifling loss of revenue, would enable the deputy commissioner to restore land when the default could be explained to his satisfaction, or to allot it to a cultivator, or to put it up to sale at his discretion. With such a rule sales would probably become exceptional; in any case the township officer should not issue a proclamation of sale without prior reference to the deputy commissioner. If the deputy commissioner should decide to sell the land, proclamation should be made at least thirty days in advance and the sale, which should be held by the subdivisional officer in the village, should not be confirmed for thirty days. A deposit of 25 per cent. should be accepted and the balance paid within fifteen days. It should be open to the deputy commissioner to set the sale aside on his own motion, as in Bombay, even though no proof of material irregularity is advanced. It seems unnecessary to refer the confirmation to the Commissioner as an aggrieved party has a right of appeal.

As these recommendations will entail amendment of the rules the opportunity should be taken to exclude from attachment such property as is now excluded under the Civil Procedure Code. Though this is not at present of much practical importance, the failure to make such a provision may at any time be criticised. In view of the above proposals the rule that an arrear may be recovered as if it were the amount of a decree for money under the Civil Procedure Code, which is now seldom if ever used, would no longer be necessary and should be dropped.

243. It has been suggested that facilities for payment of revenue through the post should be extended. At present if revenue is due from a person residing in another district proceedings have to be opened and sent through the offices of the deputy commissioners concerned to the township officer in whose jurisdiction the defaulter resides. In the first instance a notice requiring the defaulter to appear and show cause against payment is issued and, if that is infructuous, a certificate is

The payment of
revenue by post.

issued under the Revenue Recovery Act. The township officer having jurisdiction then proceeds to recover the arrears as if they had accrued in his own township. The payment of revenue through the post has been tried in Hanthawaddy but the experiment was unsuccessful. In Bassein absentee land owners are permitted to register their names and addresses but few have taken advantage of this.

The Indian procedure is as follows. In Madras ryots are permitted to pay revenue to the village headman by post office money orders instead of by cash payments. These revenue money orders, which are in a special form, are intended chiefly for the use of absentee landowners. This is divided into three parts; the money order, the acknowledgment, and the coupon. In the money order is entered the amount paid into the post office for remittance. In the acknowledgment the remitter enters particulars of the land revenue in payment of which the remittance is made. This is for his own reference but he makes similar entries in the coupon. The postman delivers the revenue money order to the headman, but tenders no cash with it. The headman checks the entries in the three parts to see that the amount entered in the money order part as paid to the post office is the same as the amount entered in the acknowledgment and coupon. If he is satisfied, he detaches the coupon and retains it for his own use. He gives the rest of the form back to the postman after signing the acknowledgment. At the same time he gives a receipt in the postman's book for the coupon which he has detached and retained. He then passes the amount of the money order through his books as though he had received a cash payment, and sends the coupon to the taluk office with his cash remittance. The acknowledgment given by the headman is transmitted through the post in the usual way to the remitter. When the headman refuses a money order, because of a discrepancy in the amounts as noted in the different parts of the form, or because the necessary particulars have not been completely filled up by the remitter, the money order is returned to the office of issue for correction.

The system in Bombay is similar to that in Madras.

In the Punjab a headman may remit his collections to the treasury by money order, a practice which is not permitted in Madras. This system enables him to avoid paying small douceurs to the tahsil establishment. Land-owners must pay cash to the headman, but an absentee or a land-owner in default may pay revenue by money order to the tahsildar:

In the Central Provinces a malguzar may pay the revenue demand to the tahsildar by revenue money order, and a tenant may similarly pay his rent to the malguzar. The rules are an elaboration of those in Madras. The postman delivers cash to the malguzar but the malguzar's remittance is adjusted by book transfer in the tahsil and post office accounts, and no money is paid to the tahsildar by the post office.

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1. Madras Village Officers' Manual, page 168.
 2. Bombay Manual of Revenue Accounts, pages 112, 116.
 3. Punjab Land Revenue Manual, page 174.
 4. Central Provinces Revenue Manual, pages 1, 14.

In all provinces the commission payable on a revenue money order is the same as that paid on an ordinary money order. A suggestion was made to us that a lower rate of commission would be equitable since adjustments between post office and revenue accounts are made by book transfer and the post office has neither to remit money nor to keep any funds in hand.

Our enquiries showed however that little use is made in India of the money order system. In introducing a similar system into Burma a difficulty would arise from the fact that assessee does not know the precise demand till the tax ticket is tendered to him. Again the post office sometimes works so slowly and irregularly that land might be attached and sold before the headman learned that the revenue had long ago been paid into the post office. The system of holding settlements would diminish the first difficulty and when these are introduced it would be possible to arrange that a land-holder should pay the fixed demand into the treasury or sub-treasury direct by money order. In other cases the innovation would appear impracticable.

The Bombay practice of crediting the interest on War Loan Scrip to the land revenue accounts of the holders at their request deserves notice and similar provisions in regard to this and other Government stock might be found useful in some districts.

CHAPTER XXII.

SPECIAL AREAS.

244. The manner in which the ordinary system is adapted to poor and remote areas has been explained in Chapter IX. There are fluctuating holding assessments on a simple plan in the tracts outside supplementary survey in Lower Burma and in parts of Upper Burma; there are fixed kwin assessments in parts of the dry zone; and there are fluctuating village assessments in some frontier districts of Upper Burma. In certain areas, still more remote or poor, land revenue is replaced by a tax per head or per family. The present arrangements do not seem to provide sufficient graduation, or sufficient adaptation to local circumstances. There are two reasons for making the work simple; one that conditions are too complex for the establishment to carry out all the duties which can ordinarily be expected of it, the other that the revenue is too low to justify the maintenance of a land records establishment at all. The two cases require separate treatment.

245. In a typical district the work of the surveyor falls under four heads: assessment, record, survey, and miscellaneous work. But some surveyors are engaged on assessment work throughout the year in Upper Burma and throughout the field season in Lower Burma. In such circumstances no survey work can be expected from them and the first step in the direction of providing for this part of their duty should be the formation of a special staff of surveyors, who would undertake survey work proper throughout the district wherever local surveyors could not cope with it. These men would also act as traversers and draughtsmen. A beginning in this direction has already been made in certain districts of Upper Burma where two or three surveyors work as a "flying column." But the present arrangements have never been systematised and find no mention in the Land Records Manual. If the surveyor is in the field throughout the year he has very little time for the preparation of new maps and registers. It is desirable therefore to relieve him so far as possible in this direction. During recent years the boundaries of assessment classes have been printed on the map in colour by the Vandyke process. This procedure had a two-fold object; to ensure accuracy, and to save work for the surveyor. It has not only been found however to cause great delay but has proved unsatisfactory in other respects, and the experiment must definitely be pronounced a failure. We recommend that the boundaries of assessment classes should be printed distinctively in black and that the surveyor should paint them in with a coloured line. Holding boundaries should be printed whenever possible. In areas where dry cultivation predominates the maps should be printed on paper lined faintly in acre squares. This will facilitate crop marking. Specimen maps prepared in this manner have been printed and are submitted for inspection with this report. It is possible to

relieve the surveyor further by excusing him from entering on the map details of occupation and cultivation. It cannot be questioned that the entry of details regarding crops and assessment on the map greatly facilitates inspection and is therefore a useful device for increasing the accuracy of the work. As regards details of occupation however the advantage of entries on the map is questionable. Where information is given on the map there is a natural tendency to confine inspection to the details shown there without reference to the register. It is impossible to say whether better results are likely to accrue from showing details of occupation in the registers alone than from showing them, as now, both on the map and in the register. We do not anticipate with any confidence that the omission of such details of registration from the map will be found satisfactory but we are of opinion that experiments in that direction would be useful. The omission from the map of details regarding crops and assessments would seem to give even less promise of success. But if such experiments succeeded they would afford Surveyors sensible relief. Entries on the map have to be made carefully and the process takes longer than an entry in a register; not only would the surveyors be spared the work of entering the details twice, but the same map could be used from year to year. In areas, therefore, where conditions are so complicated that the surveyor cannot be expected to carry out all the branches of his duty, we are of opinion that he should be relieved of survey work and that experiments should be made in omitting details regarding crops, assessments and occupation from the map.

246. The problem of adapting the general system to poor and remote areas raises difficulties of a different kind. Fixed Kwin Assessments. The solution which has been adopted hitherto in Upper Burma is to allot the distribution of the annual demand to local assessors or *thamadis* and withdraw the land records establishment. The assessment of land revenue by *thamadis* is objectionable in several respects; the distribution entails much unpaid and invidious work and, whether equitable or not, frequently gives occasion for ill-feeling. The abandonment of land records work prejudices the maintenance of survey marks, vitiates accurate crop statistics and distracts attention from areas which are especially poor and precarious and therefore should receive particular attention from district officers. The reports which we have received from district officers show that, despite their claims to special care, such areas are overlooked both by the revenue and land records departments. The result is that very little information as to the working of the system is forthcoming. A cultivator explained to us that he had paid the full assessment on the kwin until non-cultivating landowners had been induced to contribute by threats that they would lose their land, and that in spite of such forced contributions he had finally been compelled to abandon cultivation. Such an instance gives rise to considerable doubt as to how far the *thamadi* system is really working. Further the distribution of land revenue by assessors in each kwin of a village is often accompanied by a distribution of palm tree revenue and always by a distribution of the *shathameda* tax over the village as a whole, so that somebody is

always assessing some body else and the revenue is assessed and collected in driblets of a few annas at a time. Finally, it is doubtful whether the abandonment of land records work in scattered kwins and villages affects any material economy or results in any great improvement in the standard of work elsewhere. Thus we are unable to regard with approval the system of fixed kwin assessments. Mr. Couper is of opinion that in the Pakòkku and Thayetmyo Districts, where proposals regarding lump *kwin* assessments are now awaiting orders, experiments might suitably be made with lenient holding assessments fixed for a short term of years. In such areas the cultivator depends very largely on non-agricultural resources such as cutch-boiling and cattle-breeding which would enable him to pay his land revenue in a poor year. This would relieve the people of the burden of local distribution and, although he does not advocate a system of fixed assessments on its intrinsic merits, he considers it not improbable that experiment will show this to be the least unsatisfactory solution of a difficult problem. The rest of us are unable to accept this view as we feel that in precarious areas the need for a fluctuating assessment is greatest, but we are strongly of opinion that distribution by local assessors should only be adopted in the last resort. We have shown, when discussing the alternative of fixed and fluctuating assessments, that in proportion to the revenue the cost of land records work in Burma is very low. We are of opinion that the expenditure should be considered with reference to the province as a whole; if this view be taken it should not be regarded as necessary to forego the advantage of land records work in certain scattered localities because the cost forms a higher proportion of the revenue there than elsewhere. It would seem also that economies are possible without wholly abandoning the ordinary system. In the Upper Chindwin District the land records establishment is expensive. But a large portion of the expenditure is due to the appointment of a superintendent as well as an inspector to look after seven surveyors. The appointment of inspector might be abolished and the district establishment placed under an assistant superintendent. Again, it is possible to simplify the work by relieving the staff of everything beyond assessment and making special arrangements for survey and other miscellaneous duties. If such expedients be adopted it should be possible very considerably to reduce the area within which the demand is distributed by local assessors. In any kwin where the total revenue from land and palms would not on an average exceed five rupees we would collect no revenue from either. In other cases, if it should prove impossible to carry on land records work in its simplest form and the retention of *thamadis* is unavoidable, we are of opinion that they should only be required to make a single assessment according to the original conception of thathamada instead of separate assessments for land revenue in each kwin, for palm tree revenue and for the thathamada tax.

247. The system of fluctuating village assessments, as worked in Myitkyina, is also open to many serious objections. The assessment varies annually according to the estimated outturn for the year, the value of the produce assumed by the deputy commissioner and the area cultivated. The outturn is determined by crop measurement.

Fluctuating village assessments.

Fields are reaped by subdivisional and township officers, the district surveyor and revenue surveyors; as a rule one field is reaped in every two or three blocks of cultivation. On a comparison of the results with those of the last two years the outturn per acre for the year is estimated for the village. The total area of each block is known. The uncultivated area should be surveyed annually and the balance represents the cultivated area. With the staff available this is quite impossible. By applying to this area the estimated outturn per acre, an estimate of the gross outturn is framed. This is converted into cash at the price assumed by the deputy commissioner and of the gross value thus obtained one-tenth is taken as the revenue. This is intimated to the headman, and village assessors are then required to distribute the gross assessment among individuals. The accuracy of the estimated outturn is very doubtful. The area must frequently be incorrect. The price at which the produce is valued largely depends on the personality of the deputy commissioner for the time being. Compared with the general level of assessment in Burma the share of the produce taken is high, especially when the remote and sparsely-populated character of the district is considered, and is really higher than at first appears because no such allowances are made as at settlement for dryage. The incidence of the revenue is in fact notably high compared with the incidence in similar districts where settlement operations have been carried out, and we received a petition from the cultivators of several villages in the neighbourhood of Myitkyina asking for a reduction. In some villages the sum for local distribution is much higher than assessors can reasonably be expected to distribute; in one village Rs. 6,000 are distributed among 200 people and in another village Rs. 9,000 among 150 people. The calculation and distribution of the demand is further complicated by the fact that scattered patches of land are held on lease at the rate Rs. 1-8 an acre which is much below the average incidence. In many villages the system of local distribution without survey is no longer being carried out and the people employ the revenue surveyor to measure up the individual holdings. The country is developing and would develop more rapidly with a suitable revenue system and a more moderate assessment. There is a large area of cultivated land from the Katha border to Mogaung and there are considerable patches elsewhere. It is desirable that these should be brought under settlement. The operations would not prove remunerative in the first instance owing to the present high incidence, unless more accurate survey showed large extensions not yet assessed. But they would pay, indirectly and in the long run, by facilitating development. The settlement officer should also be required to advise on the land revenue system of the district as a whole. Meanwhile we recommend that the annual crop measurement and recalculation of the demand be stopped. The revenue should be fixed village by village for three years at a time at a fixed sum on the basis of the former demands. This limitation of the period to three years would obviate the difficulties which might otherwise arise from rapid extensions in some areas and decrease in others. The present staff of surveyors should be employed on the survey of individual holdings in those villages where, owing to the rapid extension of cultivation or the large total of the demand,

distribution by local assessors presents exceptional difficulties. We recommend therefore that in such villages the area for survey shall be broken into kwins and traversed by a special staff. Probably this could be carried out under the supervision of the superintendent of land records in Katha. In the year following the traverse the annual survey would be a cadastral survey on the basis of the traverse instead of the present rough block survey. Within the kwins thus constituted land records could be introduced much on the ordinary lines. The surveyor would measure up individual holdings and supply the areas to the *thamadis* to aid them in framing the individual assessments; when they have done so he would prepare an assessment register showing for each holding the area, the name of the assessee and the demand fixed by the *thamadis*. This system could be extended from year to year as necessary and thus a survey charge of the ordinary dimensions dealt with on the ordinary lines would come into existence. By a gradual extension of the same process all the cultivable plains would gradually come under the full land records system. Settlement operations could then be undertaken and acre rates introduced. If during the period intervening before settlement the assessment were fixed at a lump sum for the whole kwin the settlement officer would have material for framing rates per acre occupied, thus facilitating the subsequent introduction of holding settlements along the lines which we have recommended for parts of Lower Burma.

Shifting upland rice cultivation is assessed by the *thamadis* without survey, on an estimate of outturn. It seems desirable to consider whether this might not also be assessed by the imposition of a lump sum per village. If the assessment has in the past remained fairly constant for some years in certain villages the annual revision of estimates in those villages would seem unnecessary.

Hillside cultivators only pay Rs. 2 a head. This does not encourage them to come down to the plains and pay revenue at considerably higher rates, but it is, we understand, the accepted policy to keep them in the hills and develop the plains with people from other parts of Upper Burma. In these circumstances we propose no alteration in the present system.

Tobacco and all miscellaneous cultivation on island land pays Rs. 1-8 per acre, which is very moderate compared with the assessment on rice. Such land is annually surveyed by the district surveyor.

Except that he is employed on crop measurement the district surveyor has nothing to do with assessing rice lands. He surveys towns, island lands and performs other miscellaneous duties. If the Surveyors be relieved of their present excessive responsibilities by the substitution of fixed lump sum assessments for the present fluctuating system, they will be able to relieve the district surveyor of his present duties in connection with island lands and town lands, and thus set him free to be utilised as an inspector. One defect in the present arrangements is that two of the four surveyors are only temporary hands. During the rest of the year there is no survey work for them, and therefore, legitimately or illegitimately, they have to make enough during eight months to live for the year. This exposes them to tempt-

ation, and the fact that they are not permanent results in district officers having very little hold over them. We are of opinion that they should be made permanent. The system which we advocate for Myitkyina would appear generally applicable to similar areas.

248. There remains the question of survey in remote areas. There

Survey in remote areas. is no difficulty in extending the present cadastral survey wherever this is thought advisable.

Permanent survey marks can be laid down by a traverse party and in the following season cadastral survey can be introduced. It has been suggested that the area for survey should be laid out in survey numbers prior to occupation. We are of opinion that any scheme for development along these lines is suitable only for large areas which it is proposed to colonize on a definite scheme. The choice between holding and field surveys must also be considered in this connection. In Bombay the plane table and sight vane system is used for holding surveys and, with a staff trained in this method, it is perhaps the most suitable system of survey when boundaries are demarcated and interior detail is not surveyed. The question is only of immediate practical importance with regard to rice lands, where the existence of bunds makes it unnecessary to demarcate holding boundaries, and the Burma system of taking the field, that is, the agricultural plot, as unit is probably almost as quick and in the long run cheaper and more efficient. The present arrangements for extending survey are defective however in that there is no routine procedure for examining its desirability. Thus within a few miles of Pegu along the Pegu-Rangoon Road we found considerable areas of cultivated land to which supplementary survey had not yet been extended, although only separated by the road from the settled area where annual survey and assessment was being conducted along the ordinary lines. We recommend that arrangements should be made for periodical reports as to the advisability of extending supplementary survey to areas which at present lie outside it.

CHAPTER XXIII.

REVENUE ORGANIZATION.

249. We have been directed to examine whether the maintenance of village maps and records may not be entrusted to a cheap village agency. On this system the village surveyor would be capable of correcting the ordinary kwin map and of resurveying by chain, offset staff and plane table, small portions of the village-tract where new survey was needed. His chief duty would be the annual correction of the village map and village records. The present revenue surveyors would become revenue inspectors and the present land records inspectors would become assistant superintendents. This proposal for remodelling the present organization rests however on the assumption that it may be found practicable to introduce a system of fixed assessments; the scheme is not regarded as suitable for a fluctuating assessment. We have been unable to recommend the introduction of fixed assessments and it is therefore unnecessary to examine at length the advisability of substituting a village agency for the revenue surveyor. It may be well however to point out that a village agency is no longer cheap; as the table in Chapter XIX shows, it is already more expensive than an organization along the lines now obtaining in Burma and in all probability will increasingly become more so. In every province we visited there were strikes and rumours of strikes; the village surveyor is everywhere demanding pay on the scale of the revenue surveyor. With a large body of men in the inferior ranks on low pay, any revision of pay to meet an increase in the cost of living is almost necessarily more expensive than where the work is carried out by a smaller but more highly trained staff with a large proportion in the higher ranks engaged on supervision and inspection. It is not easy to obtain from the published statistics particulars regarding the number of village accountants or surveyors and the area and assessment for which each is responsible. Apparently, however, in Madras there are about 15,000 village accountants, each in charge of some 2,000 acres with an average assessment of about Rs. 4,000. Probably the figures for Bombay are not very different. In the Central Provinces there are rather less than 5,000 patwaris, each in charge of nearly 5,000 acres with an average assessment of Rs. 2,500. In Berar there are 2,000 patwaris, each in charge of 4,000 acres with an average assessment of about Rs. 4,000. In the Punjab there are upwards of 8,000 patwaris, each in charge of 3,500 acres with an average assessment of Rs. 5,000. The figures for Burma show a strong contrast; there are less than 2,000 surveyors, but each of them is responsible for 10,000 acres with an average assessment of Rs. 20,000. Although the village agency of India is a survival from former conditions, in the Punjab and still more in the Central Provinces a patwari's charge may equal in area one of the

smaller charges of a revenue surveyor in Burma, and in the Central Provinces the department is now going beyond these limits and making experiments with extended patwari circles. Even therefore had we recommended the introduction of fixed assessments, we should not have been able to advocate the substitution of a village surveyor for the present revenue surveyor.

With reference to the village revenue agency we would draw attention to the large expenditure on the remuneration of village headmen in Burma. A reference to the table just mentioned will show that the charges under the head of commission are high in comparison with the other items of expenditure. We are aware that exception may be taken on political grounds to any proposal for placing village headmen on a fixed scale of pay and we recognize that their character as representatives of the village might be impaired thereby, but the present system of paying them by commission leads to many anomalies in the scale of remuneration in adjacent villages, and will become increasingly expensive as rates of revenue are enhanced. We are of opinion therefore that the question of substituting fixed emoluments for payment by commission should be examined.

250. Our attention has further been directed to the comparative insignificance of the township office in the assessment and collection of revenue and it has been suggested, that the township officer should, as generally in India, be primarily responsible for these matters, and that the land revenue accounts should be maintained in his office. We have been directed to examine the distribution of revenue accounts and registers between the revenue surveyor, the township officer, the subdivisional officer and the district office. There is reason for the difference between Indian and Burman practice in this respect. In India, speaking generally, the village surveyor or accountant who calculates the demand, and the headman who collects it, are both subordinates of the township officer. In Burma the system of fluctuating assessments demands a more highly qualified subordinate staff; inspection and supervision need technical and professional qualifications. The township officer has neither the time nor the training to control revenue surveyors, and it is not possible to obtain officers who can perform this duty efficiently on a scale of pay which would allow them to be treated as his subordinates. The land records department must be organized on the basis of the district with a superintendent over the whole district staff, responsible to the Deputy Commissioner alone. We would note moreover that in India there appears a tendency to approximate to the organization characteristic of this province by appointing officers of superior status and technical experience to supervise land records work. The revenue inspectors of other provinces assist in the collection of revenue, the supervision of the village officers in this respect is one of their main duties. But to require that the land records staff of this province should perform such duties would almost inevitably involve their subordination to the township officer in this branch of their duties. In their land records work they must remain subordinate to the superintendent of land records, and any step in the direction of placing them under the township officer would impair administrative efficiency by introducing

dual control. The township officer on the other hand is responsible for the collection of revenue within his township, and apart from certain defects in the collection of arrears the existing machinery appears reasonably efficient. The township officer must be subordinate to the Deputy Commissioner through the subdivisional officer. There are thus two separate administrative chains; for the assessment of revenue the revenue surveyor is responsible to the Deputy Commissioner through the inspector and superintendent; for the collection of revenue the headman is responsible to the Deputy Commissioner through the township and subdivisional officers. We are of opinion that it is advisable to retain the main features of the present system by which assessment and collection centre only in the district office in the person of the Deputy Commissioner and that the division of function, by which the land records department is responsible for assessment and the revenue department responsible for collections, should be clearly recognized and rigidly preserved.

It does, however, seem desirable to associate the township office more closely with land records work than is the case at present. The circles or charges of land records inspectors frequently cut across township boundaries, so that for land records purposes the township is not an administrative unit. This is inconvenient and our proposals for the introduction of a record of rights will make it even more objectionable that the boundaries of land records charges should overlap those of townships. We recognize that to remedy this would involve an increase in the number of Inspector's charges. With the present staff and the existing organization the charges of inspectors are too large, and the number of men an inspector has to supervise is excessive. It is unquestionable that the inspector is now the weakest link in land records administration, and although we are proposing to improve the class of men and to lighten their duties by grouping surveyors at headquarters, the proportion of inspectors to surveyors is now generally recognized as inadequate, and we do not anticipate with any confidence that even these measures will render it sufficient. We are of opinion therefore that although a re-adjustment of inspectors' charges to coincide with township boundaries will entail an increase in the number of inspectors, the consequent advantages will be found to justify the extra cost.

Although this step should strengthen the connection between the township office and land records administration, the lack of acquaintance with land records work which characterises most township officers will remain a source of weakness. The township officer is now required to inspect a certain number of kwins but the inspection tends to be perfunctory and, by teaching the surveyor that errors may escape detection, often does more harm than good. On the introduction of a record of rights it is probable that in many townships a special record officer will be required, either permanently or during periods of pressure. Such officers might suitably be selected from among land records Inspectors and be appointed Deputy Township Officers solely for the performance of revenue functions. They would be entrusted with details of revenue work requiring an intimate knowledge of land records procedure, such as the inspection of kwins

and of grazing grounds, which are now performed cursorily or neglected, and would thus become revenue assistants to the township officers somewhat in the position of office *kanungoes* in India.

251. The District Superintendent is an officer of the Burma Land Records Service, which has always been regarded as standing in popular repute at the head of all the provincial services in Burma; this view was endorsed by the Local Government when discussing the recommendations of the Royal Commission on the Public Services in India. Evidence we have received, however, reveals a certain amount of dissatisfaction among some members of it in regard to their position. Complaints have been made that the superintendent is treated with a lack of sympathy and as of inferior standing to members of other provincial departments, and that he is often regarded as a head clerk rather than a responsible officer. It has been suggested that this would be remedied if the Superintendent of Land Records were given the authority over his subordinates which is exercised by the District Superintendent of Police. We are unable to support this proposal, as we do not consider it desirable that the control of the Deputy Commissioner over the land records staff should be relaxed, or that the Superintendents should possess powers which have not been given to subdivisional officers. In regard to the relations between the Deputy Commissioner and the Superintendent we need say no more than that they should be exactly the same as between the Deputy Commissioner and his subdivisional officers. It deserves notice in this connection that on the time scale recently introduced, members of the Land Records Service will rise by annual increments of Rs. 20 to Rs. 800 while members of the Burma Civil Service rise by increments of Rs. 25 to Rs. 850. There appears no justification for this distinction especially in view of the paucity of superior posts open to the Land Records Service. It may be noted that it prevents officers of that service from obtaining the maximum pension admissible to an uncovenanted officer. We therefore recommend that the time scale for the Land Records Service should be the same as that for the Burma Civil Service, and that officers of both services should also be on an equality in the matter of travelling allowances.

252. The functions of the administrative ranks are confined at present to inspection and advice, and we regard this arrangement as suitable. The number of administrative officers however seems insufficient. The Deputy and Assistant Director divide between them the responsibility for supervision of the work over the whole province. There would be advantages in appointing a superintendent to each division as inspecting officer and adviser on land records matters to the Divisional Commissioner, but we have not been able to satisfy ourselves that the additional cost would be justified by the results. We have recommended in discussing survey methods that a special officer should be appointed to supervise the maintenance of survey; this measure would relieve the Deputy and Assistant Directors of one branch of their duties, but as they are able to devote little attention to this branch at present the relief would not be substantial. Apart from the special survey parties there are 34 district charges for

inspection. Each of these should be inspected twice a year. During the field season the inspecting officer should spend not less than ten days actually in the field in each district. Time must be allowed for travelling and, as a journey of two or three days by sea or river is necessary to reach some districts, the time available for inspection is greatly reduced. Nor can officers be expected to tour continuously for several months on end; the work is monotonous and, without a few days in headquarters every month or two, its quality is certain to deteriorate. If the inspections are to be thorough an average of two a month during the field season is not unduly low. An officer therefore, who inspects twelve districts during the field season does as much as can reasonably be expected. Inspections of the office work and record room during the recess do not take up so much time as the inspection of field work, but during this period the Deputy and Assistant Directors are occupied at headquarters in connection with the annual reports. The Commissioner of Settlements examines land records work in the districts where settlements are in progress but he has not the time to carry out routine inspections in such detail as is necessary to keep local superintendents up to the mark in every branch of their duties. His function is rather to examine land records work in a wider aspect, and to consider the general suitability of land records procedure, than to ascertain whether certain superintendents have complied with all the rules. The Commissioner cannot therefore be profitably employed on inspecting those districts which the Deputy and Assistant Directors cannot visit, and the appointment of an additional Assistant Director appears unavoidable. The districts which suffer most from inadequate inspection are the maritime districts of the Arakan and Tenasserim Divisions; the unsatisfactory results have been described in the latest settlement report for the Akyab District. We have examined, as an alternative to the appointment of an additional Assistant Director, the feasibility of posting to Moulmein and Akyab a senior superintendent who would be required, in addition to his ordinary duties, to inspect the work in the neighbouring maritime districts once a year. But we do not regard this solution as satisfactory; it might not always be convenient to appoint to these two districts superintendents senior to the officers whose work they would inspect, and an inspection by a superintendent would not carry the same weight as one by an Assistant Director. We are of opinion therefore that an additional Assistant Director is required. In view however of our recommendation that an officer should be appointed as Assistant Director for Survey we do not wish to press for the immediate appointment of an additional Assistant Director for general land records administration until the effect of relieving the present officers of their responsibility in connection with survey work can be determined. We have noticed already that, until recently, the appointment of Deputy Director was reserved for a member of the Commission. It is of great advantage that the work should be examined from an outside standpoint in a degree of detail which the Settlement Commissioner cannot possibly undertake. Moreover, the general administration is strengthened, if some revenue officers have a minute practical knowledge of land records work, and we consider that the

former practice, which was interrupted by the war, should be revived as soon as officers become available.

It has been suggested that the double control now exercised over settlement work by the Financial Commissioner and Settlement Commissioner is unnecessary. We are of opinion that if the Financial Commissioner were the only controlling officer it would be impossible for him to supervise settlement operations in sufficient detail. In the immediate future the introduction of the reforms which have been proposed in this report will render it even less possible to dispense with the appointment of Settlement Commissioner. We deprecate the multiplication of intermediaries between the settlement officer and Government and do not wholly approve the existing procedure by which a settlement report is considered in a conference, noted on by the Financial Commissioner, and then noted on again by the Revenue Secretary before the orders of Government are passed. We consider however that the Financial Commissioner should not preside over the conference and must therefore exercise control by reviewing its proceedings. The most satisfactory solution in our opinion would be for an officer with the authority and experience of the Financial Commissioner to be a member of Government who would ordinarily pass final orders on settlements in that capacity without further reference, but in view of the impending introduction of constitutional reforms it does not seem incumbent on us to make detailed recommendations for giving effect to this principle.

The Settlement Commissioner is at present in charge of the Inland Trade Registration Department. There is no necessary connection between trades registration and land records; the combination of the two departments under one head has been convenient in the past, but now that a Director of Industries has been appointed, the supervision of trade registration seems more appropriate to his department. We understand that it is proposed to transfer this subject to him and consider the proposal suitable.

On the other hand, the functions of the Land Records Department with regard to the record of occupation are intimately associated with those of the Registration Department. In Bombay the Commissioner of Settlements and Land Records is in charge of registration and in the Punjab the Director of Land Records is also Inspector-General of Registration. At present the Excise Commissioner is Inspector-General of Registration in Burma. We have discussed the suitability of this arrangement with the late Excise Commissioner. He points out that the present combination of functions is convenient, as the Excise Commissioner tours in every place where there is a sub-registrar's office and rarely visits a place where there is none, and he estimates that one-third of the registration work does not deal with land. It seems unquestionable however that between the registration department, the maintenance of the record of rights, and the reporting of transfers, the co-ordination should be as intimate as possible and we consider this is unlikely to be obtained unless they are all combined under a single head. We are of opinion therefore that the Commissioner of Settlements and Land Records should be appointed Inspector-General of Registration and that an assistant, who might suitably be a senior Superintendent of Land Records past active

field work, should be given him to inspect registration offices and the record of rights.

253. The training of surveyors is more elaborate in Burma than is that of officers exercising similar functions in any other province. The only defect in the present arrangements which has come to our notice is the difficulty of obtaining a satisfactory class of survey teacher. The latest experiment has been the selection of surveyors for a course of training in a normal school to learn the art of teaching. But these schools are founded to train men as teachers in primary and secondary schools, and the curriculum is not easily adaptable to the special requirements of the Land Records Department. We have mentioned in discussing survey problems that the Survey of India Department is establishing a school for surveyors and it may be found possible to arrange that candidates for the position of survey teacher shall be sent there for training.

Surveyors are now on a time-scale, and the stimulus of rapid promotion to higher grades is no longer an incentive to good work. We consider that, as in the Central Provinces, good work should be recognized by a "good conduct" allowance of Rs. 5 to Rs. 10 a month, for which not more than one-quarter of the staff in each district would be eligible. An additional reason for this proposal is to be found in our recommendation regarding the appointment of inspectors, the effect of which will be to narrow to some extent the prospects of surveyors.

Inspectors who are promoted from the ranks are not at present required to undergo any special course or to pass any test after selection. It not infrequently happens now that surveyors who are not likely to make good inspectors and would not be selected to fill a permanent vacancy are appointed to officiate for short periods as a matter of convenience and thus obtain gradually a claim on a permanent appointment. Moreover, good surveyors may lack the special qualities required in an inspector. It would seem useful to lay down that every inspector promoted from the ranks shall be on probation for at least a year and shall pass an examination in the duties of an Inspector before he is confirmed in that rank. In the Punjab one-third of the inspectors are recruited by the direct appointment of men, who have passed the entrance examination. Mr. Arbuthnot, when Settlement Commissioner, proposed that one quarter of the inspectors should be appointed from outside the department. The inferior quality of the inspectors has already been noticed, and we are of opinion that the direct appointment of men with better educational attainments than the ordinary surveyor should conduce to more efficient administration. We recommend that 25 per cent. of the inspectors be appointed from men who have passed the Anglo-Vernacular High School Final Examination. Candidates recruited in this way should go through a course of Survey in the Survey of India training school or in the special survey party. On completing this course, they should spend two years on probation doing the work of a revenue surveyor and should pass an examination before they are

confirmed. The examination for inspectors, whether recruited direct or from the ranks, should be held once a year in each division, ordinarily at the headquarters of the Divisional Commissioner by the Deputy or Assistant Director. We do not suggest any formal syllabus, as the examination should be so far as possible of a practical character, and should be framed on general lines laid down by the Commissioner of Settlements and Land Records; much weight would attach to the reports of the Deputy Commissioner and Superintendent of the district in which the probationer had served. In the Central Provinces, the revenue inspectors are on a provincial list and do not necessarily serve in the districts in which they were first recruited. In Burma it would appear useful to place the inspectors on a divisional list to be maintained by the Divisional Commissioner; a revenue surveyor, on appointment as probationary inspector, should ordinarily be transferred to another district. The present scale of allowances does not seem entirely satisfactory, particularly as regards house and office allowances and the travelling allowances of inspectors, who should in some districts be required to maintain ponies and in others boats. We abstain however from making any detailed recommendation on this head as our proposals for grouping surveyors at township headquarters will materially alter the position and the question will require detailed examination in the light of the conditions of individual districts.

We would note also that the time-scale recently introduced for inspectors and surveyors has given rise to some discontent particularly in Upper Burma, owing to the fact that men were placed on the scale not according to their length of service, but according to the pay which they were drawing when it was introduced. We recommend that the position be further considered.

The present arrangements for selecting assistant superintendents of land records appear suitable, but a wider field for selection would be opened by advertising vacancies and calling for applications. In this connection we would draw attention to the need for adequate recruitment. Of recent years the promotion of inspectors to fill temporary vacancies in superior posts has often been found necessary, and they have held some of the less important district charges. Although this has been due in part to the drain on the superior ranks occasioned by the war, the cadre of the department does not allow sufficient reserve for leave vacancies and still less for temporary emergencies. In the past, officers of the department have taken much less leave than is desirable in the interest of efficient administration; we are of opinion that the cadre should be enlarged and officers encouraged to take leave at regular intervals. It would be well, also, to make definite arrangements for posting assistant superintendents to certain heavy charges. The districts were classified by Mr. Mathews when, as Settlement Commissioner, he submitted proposals for re-organization of the department. We attach a table showing the present classification and that which we regard as provisionally suitable. We are of opinion that an assistant superintendent should always be posted to first class districts and, so far as the cadre permits, to second class districts also during any period of pressure. With regard to the promotion of inspectors, to the gazetted ranks, although we

consider that deserving inspectors should be recognized as entitled to promotion, the duties of a superintendent are so distinct from those of an inspector, and the men hitherto appointed to be inspector differ as a rule so widely in education and intelligence from officers of gazetted rank, that but few of them can be regarded as eligible for higher appointments. Our recommendation that one-fourth of the inspectors should be directly recruited from men with higher educational attainments than are needed for a surveyor should render it possible in time to open a wider avenue of promotion to the post of assistant superintendent.

The present training of assistant superintendents appears satisfactory except that they are not given an opportunity to become acquainted with settlement procedure. We consider it desirable and almost essential for sound administration that the superintendent should have a practical knowledge of settlement work. This will become even more desirable under our proposals which will bring the settlement and land records departments into much closer relations than have hitherto obtained. The present course of training comprises twenty months on survey and eighteen months in a land records office. The objections to any further prolongation of the training are serious, but in view of the importance of settlement knowledge we consider that they must be faced and overruled. The present survey course cannot very well be cut down, but the general experience which probationers will acquire on settlement should render it possible to reduce the land records training from eighteen months to twelve months. We recommend therefore that probationary assistants should undergo a survey course lasting for twenty months, settlement training for a year and then a year in a land records office. This will involve an extension of the present course of training by only six months. If the full advantage is to be obtained from this proposal, the importance of the settlement course must be clearly recognized; a probationer who fails to give satisfaction on settlement is unlikely to prove a useful superintendent and the confirmation of such officers should be deferred until they have clearly demonstrated their fitness. We have suggested, in connection with settlement procedure and the introduction of a new settlement, that the District Superintendents of Land Records should be gazetted as an assistant settlement officer for the period of settlement, receiving the ordinary settlement allowance. His functions in this capacity however, subject to special arrangements, would chiefly consist in the preparation of the new registers under the direction of the settlement officer, and he would acquire little general experience of settlement. We are of opinion that so far as possible junior officers now in the department should be given an all round training in settlement work, but, as we recognize that this suggestion can only be adopted when the cadre is at full strength, we make no detailed recommendations for giving effect to it.

254. The higher ranks of the Settlement Department are filled by

<p>The training of revenue officers in land records and settlement work.</p>	<p>officers on deputation from other departments and it is convenient therefore before discussing settlement organization to examine the training of revenue officers in settlement and land</p>
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records work. At present all officers are required on first appointment to undergo a training in land records work, but the arrangements are defective and the results unsatisfactory. Officers of the Commission should on first appointment be posted to a settlement party for three months during which they would pick up the elements of land records work and should also spend about a fortnight on survey work under the superintendent of land records. After three or four years' general administrative experience, officers who propose to remain on the executive side should be posted as assistant settlement officers for a year; the end of the first leave would ordinarily be a suitable time for deputation to the settlement department. For officers of the Burma Civil Service also, training under the settlement officer would be more valuable than the present course under the superintendent of land records and, so far as practicable, arrangements should be made for this. At the end of three or four years' service they should be given an opportunity to ask for further experience of settlement, and, if regarded as suitable, would be placed on deputation in that department.

Officers recruited to the Subordinate Civil Service should be posted for a course of land records work in October or November when they should receive a month's training in the elements of survey, maps and registers; from December to February they should be employed in the field on the work of revenue surveyor, finishing up with a short course of practical survey.

255. The appointment of settlement field clerks and inspectors should be regulated similarly to that of corresponding appointments in the Land Records Department and it seems unnecessary to make detailed recommendations. It deserves mention that owing to the long continued block in promotions consequent on the disbandment of three settlement parties, there is even greater reason for further considering the effect of the new time-scale on this department than on the land records department. It would seem useful, however, to frame a short course in practical agriculture for field clerks before appointment as soil classifiers, and the possibility of doing this should be examined by the Settlement Commissioner in consultation with the Director of Agriculture. The chief weakness apparent in the settlement organization is the deficiency of suitable assistant settlement officers. The Burman assistant settlement officer is almost invariably promoted from the ranks and although honest, diligent and, within the limits of his accustomed routine, competent, often lacks education and general intelligence. We consider that in each settlement party there should be at least one assistant from the Commission, one from the Land Records Service or the Burma Civil Service and, provided that suitable men are forthcoming, one promoted from the ranks.

The assistant settlement officer from the Commission or Burma Civil Service would be recruited in the manner suggested above. An assistant obtained from the Land Records Service would be selected from among those who showed a special aptitude and liking for settlement work during the year's course which we have recommended; they should join for five years and draw the pay of their grade with a settlement allowance.

256. We have seen that, as now organized, the various branches of revenue and land records work overlap in some places and in others lack mutual connection. Our recommendations are intended to provide a remedy for this lack of co-ordination, but as these are scattered in various parts of the report it may be convenient to summarise them.

Interdepartmental relations. The settlement officer will build his proposals on the land records statistics which in the same process he will verify. Among his assistants will be one or more men originally recruited as an assistant superintendent of land records. The settlement will be introduced by the land records staff under the instructions of the superintendent of land records, but the work will be done in the settlement office under the direction of the settlement officer. The superintendent will, for the period of settlement, be gazetted an assistant settlement officer for certain purposes, and he will also have had previous training in settlement work. Many of the forms and registers, and all those of most importance, will be identical or nearly so in both departments. During the currency of a settlement the function of assessment will remain sharply distinguished from that of collection, but we have provided for a more intimate connection between the township office and the land records staff and have opened a line of promotion for inspectors to the rank of deputy township officer, from which a few with exceptional qualification might rise to become members of the regular line in the subordinate civil service. The present dislocation between survey and land records we propose to remedy by the appointment of a special officer who will be responsible for supervising the survey arrangements in every district and will also be in personal charge of the special survey party. This officer would thus provide a link between the district land records establishment and special survey work. We are of opinion that if these several recommendations are accepted, they will result in a greatly improved co-ordination between the various branches of the revenue and land records departments with no confusion between their respective functions.

CLASSIFICATION OF DISTRICT CHARGES (see *paragraph 253*).

District.	Classification: (a) present, (b) proposed.		Number of (a) Clerks, (b) Record- keepers, (c) Inspectors, (d) Surveyors.				Land Revenue Demand in 1918-19, for which land records establishment was responsible.	Remarks.
	(a)	(b)	(a)	(b)	(c)	(d)		
Hanthawaddy ...	1	1	3	2	7	77	Rs. 39,87,898	
Pegu ...	1	1	3	1	3	89	26,92,065	
Shwebo ...	1	1	2	2	12	122	13,17,479	
Akyab ...	2	1	2	2	10	96	21,18,831	
Bassein ...	2	1	2	2	9	94	23,88,921	
Myaungmya ...	2	1	2	1	6	73	21,79,592	
Insein ...	2	1	3	2	5	65	20,94,597	
Pyapón ...	2	1	2	2	7	75	22,64,324	
Tharrawaddy ...	2	2	1	1	6	58	16,04,501	
Ma-ubin ...	2	2	2	1	5	54	15,90,688	
Henzada ...	2	2	2	1	6	78	19,66,845	
Thatón ...	2	2	2	2	8	79	14,59,945	
Amherst ...	2	2	2	1	6	67	10,46,009	
Mandalay ...	2	2	2	2	5	49	8,89,001	
Minbu ...	2	2	1	2	6	62	9,05,869	
Kyaukse ...	2	2	1	1	6	48	7,90,827	
Magwe ...	2	2	1	2	9	82	5,46,143	
Sagaing ...	2	2	2	1	3	71	4,93,251	
Myingyan ...	2	2	2	1	7	70	4,22,953	
Prqne ...	2	2	2	1	5	59	7,28,653	
Toungoo ...	2	2	2	1	5	46	12,18,810	
Pakókku ...	2	2	1	2	9	71	4,42,042	
Katha ...	2	2	1	1	5	39	2,47,137	
Lower Chindwin ...	2	2	2	1	7	63	4,22,396	
Meiktila ...	2	2	1	1	5	55	4,85,714	
Yaméthín ...	2	2	2	1	6	61	6,85,774	
Kyaukpyu ...	4	4	1	1	4	27	9,13,260	
Sandoway ...	4	4	1	1	3	13	1,56,398	
Tavoy ...	4	4	1	1	3	23	3,34,404	
Mergal ...	4	4	1	1	3	22	2,89,449	
Thayetmyo ...	4	4	1	1	4	38	2,98,955	
Upper Chindwin ...	4	4	1	1	1	7	87,660	
Mandalay Town ...	4	4	4	1	2	17	6,10,081	
Government Press, Rangoon.	4	4	---	---	---	---	---	

Bassein, Myaungmya and Pyapón are placed in the first class because of the large area of land still coming under cultivation; Akyab is in the first class because it is remote; Shwebo because of irrigation, and Insein because of the valuable special lease areas. Amherst is in the second class because of the Town lands and salt fields; Mandalay, Minbu and Kyaukse because of the irrigation.

Figures for establishment have been taken from the Land Records Administration Reports of 1919-20.

CHAPTER XXIV.

MISCELLANEOUS.

257. We have noted in our introductory chapter that the terms of Land administration reference contemplate some enquiry into the and the condition of general policy regarding land administration, tenants. including the issue of grants and leases, land alienation and the protection of tenants. Tenancy legislation however has recently been separately considered by a special committee and orders on their recommendations have not yet been passed. A thorough investigation of rural economy in Burma would have involved a wide extension of our enquiries. It appears sufficient therefore to note the main features of agrarian conditions here as compared with those in India. For Upper Burma, as we have explained, the statistics published are worthless and misleading, but those for Lower Burma indicate sufficiently the unstable and unhealthy economic conditions which have grown up with the development of industrial agriculture. The figures in the following table are based on those given in the Annual Reports on Revenue Administration :—

District.	Percentage of occupied area annually alienated by sale or non-usufructuary mortgage :		A. Percentage of occupied area held by tenants at full rents.				Percentage of occupied area held by non-agriculturists :					
	(a) From 1909-10 to 1918-19. (b) From 1914-15 to 1918-19.		B. Percentage of tenants who have held the same land for less than 5 years. (a) Average of 10 years from 1900-10 to 1918-19. (b) During 1918-19.				A—Resident. B—Non-resident. C—Total. (a) average of 10 years from 1900-10 to 1918-19. (b) During 1918-19.					
	(a)	(b)	A		B		A		B		C	
(1)	(2)	(3)	4 (a)	4 (b)	5 (a)	5 (b)	6 (a)	6 (b)	7 (a)	7 (b)	8 (a)	8 (b)
Pyawon ...	16.87	18.88	48	53	87	85	12	11	23	24	35	36
Ma-ubin ...	11.64	12.74	31	27	88	86	14	14	16	19	30	28
Myaungmya ...	11.63	12.68	41	46	80	88	8	9	13	16	22	26
Pegu ...	11.29	12.22	46	51	91	91	4	3	23	27	26	30
Tharrawaddy ...	11.26	14.34	28	43	90	87	7	4	14	18	20	22
Insein * ...	10.85	10.20	* 38	31	* 88	81	* 7	8	* 24	26	* 31	23
Hanthawaddy ...	10.05	10.28	50	55	83	81	9	7	22	26	40	43
Bassein ...	9.62	10.48	36	40	91	91	5	4	10	12	—	—
Toungoo ...	8.14	9.32	26	23	89	91	8	10	16	20	24	30

* District formed 1912, the figures in these columns are for 7 years only.

From these figures it appears that in many districts alienations, including under that head non-usufructuary mortgages, are proceeding at a rate equivalent to the transfer of the whole occupied area of the district within less than eight years, and that everywhere the rate of alienation is increasing; that large areas are held by tenants, few of whom occupy the same land for an appreciable period; and that much of the land is held by non-agriculturists, most of whom are non-resident. Nowhere in India have we found conditions at all similar. In the ryotwari provinces of Madras and Bombay no figures are available, and in the Punjab and the Central Provinces, where statistics are published, not only the form of statistics, but the conditions to which they relate, differ so widely from those of Burma as to render statistical comparison impossible. It is needless however to examine precedents in other provinces in order to decide whether remedial action is desirable; the figures for Burma are sufficiently convincing in themselves. The question is not whether action ought to be taken but what action can be taken. We would point out however that the different economic conditions of Burma and India render it improbable that legislation on Indian lines will prove effective and, although in view of the enquiry held by the committee on tenancy legislation, we do not wish to make detailed recommendations, it may be well for us to place on record our opinion that action is necessary and that legislation may prove useful. The question will attract attention during the approaching settlement of Pyapôn and we consider that the settlement officer should be called on to report what measures, legislative or economic, should be attempted. In view of the importance and urgency of the question it would further seem desirable to appoint a special officer to hold a similar enquiry throughout Lower Burma. Meanwhile it seems necessary to ventilate the facts, to attract general attention to the state of affairs and the need for remedy, and then by a resolution in Council or other appropriate means to test public opinion on the policy to be adopted.

258. It has been explained that the distinction between state and non-state land in Upper Burma is artificial, and uncertain. For some years the assimilation of the rates of assessment on state and non-state lands has been proceeding; the owners of non-state lands could object with some plausibility to this assimilation so long as the standard of assessment on state land was half the net produce. If our recommendation, that the fraction of one-half the rental produce should be prescribed as the maximum which the state should take and not as the proportion to be taken, be accepted, it will become clear that both state and non-state lands are being assessed as if they were held in private ownership, that the tenure of state land is being assimilated to that of non-state land and not the contrary. There will therefore be no substantial ground for objecting to the assimilation of the two forms of tenure. There are many advantages in the proposal but as we understand that it is already contemplated we need do no more than accord it our support.

The provisions for the temporary relinquishment of land in Lower Burma are an obsolete survival; they are rarely used and might conveniently be abolished.

Perhaps the most serious defect which we have noticed in the land legislation is the uncertain status of land occupied for residential purposes both in Upper and Lower Burma. In Lower Burma a village is "an area appropriated to dwelling places not included within the limits of a town" and, owing to the ambiguity latent in the word "appropriated," it appears doubtful whether in law any villages exist. In Upper Burma rights over land in villages have never been determined. We have recommended that claims shall be recorded during the preparation of the record of rights, but it is very desirable that in Lower Burma the term "village" should be clearly defined, and that in Upper Burma the private rights in residential lands which the people recognize in their transactions should be acknowledged.

259. We have examined the relations between kwins and village-tracts. It appears that many of the kwins were originally formed for convenience of survey with little reference to administrative requirements. In Upper Burma, before the annexation, many of the headmen's jurisdictions were not continuous; a headman might have jurisdiction over one or more small tracts at some distance from his main village. In remote areas, as was until recently the case in Myitkyina, the boundaries between village-tracts were of no great importance and therefore ill defined. From these various causes it has often happened that the boundaries of kwins and village-tracts overlap. This is not peculiar to Burma. In the first village which we visited in Berar the village map exhibited lacunae, scattered blank patches, representing the whole of one village and parts of six other villages. No confusion of jurisdictions on this scale could be found in Burma, and the present lack of coincidence between kwins and village-tracts does not give rise to serious administrative inconvenience. Such difficulties however as are occasioned in this manner are gradually being removed by the existing provisions for reconciling the boundaries of kwins and village-tracts at resurvey, and the action now being taken appears sufficient.

260. We have abstained from examining in this report the numerous problems connected with the administration of town lands. We would however draw attention to the unsatisfactory nature of the present surveys. The maps now show house sites with all the details of occupation and a plan, drawn to scale, of every building on the site. The usual scale is 64 inches to the mile, which is too large for many purposes, but, in closely populated areas, much too small if the map is to show full detail. We would recommend the introduction of field books giving measurements in detail on the lines adopted in Madras. This system is fully described in the evidence of Mr. Gompertz in Volume II and it is unnecessary to repeat the description here. The procedure would resemble that suggested by Mr. Lowry in the new draft manual, but the field books would record the measurements of holdings as well as those of buildings. This system of survey will render minute accuracy possible without unduly enlarging the scale of maps.

Land records work in towns is very different from the work in rural areas, and in many districts the annual survey and registration is much neglected. Where a single town is sufficiently important to

constitute a surveyor's charge, or where two or three small towns are situated so conveniently that one surveyor can deal with all of them, it seems preferable that the town surveyor should be given no rural work. It is essential however that the towns should be in the same township and the surveyor responsible to only one inspector. Another expedient deserving trial is to appoint a special inspector for town lands work.

It has been mentioned that the Settlement Commissioner is responsible for the demarcation and survey of fisheries. The fishery maps are kept in the land records record-room but the Land Records Manual barely mentions them. We do not wish to enter on questions of fishery administration but it seems well to invite attention to the fact that the demarcation and survey of fisheries and the maintenance of fishery maps leave much to be desired.

The present arrangements for conducting miscellaneous surveys for private parties are unsatisfactory. Surveys of area for leases are often carried out by temporary surveyors with very little supervision. In other cases, as, for example, partitions, the surveyors on the regular establishment are employed on survey work for landowners. Sometimes they are employed at the instance of civil courts. There is some uncertainty as to how far they are entitled to receive fees for such work. The provisions suggested by Mr. Lowry in his draft manual for licensing private surveyors will remove some of these difficulties and we recommend that they be tried. With regard to the employment of Government surveyors on private work we are of opinion that no man is entitled to a fee for doing work which it is part of his regular duty to perform without a fee, and that no man should undertake private work unless he can do so without detriment to his official duties. The previous sanction of the local superintendent should be obtained before a revenue surveyor is employed on survey, whether by a civil court or a private party, for instance, in partitions, and a scale of remuneration should be laid down. It has been represented that decrees of civil courts sometimes leave a great deal to the discretion of the surveyor, placing him rather in the position of arbitrator as, for example, where a decree directs partition of land without specifying the parcels which each party should receive. Such decrees should be returned for amendment and, generally, we are averse from any tendency to encourage surveyors to act as arbitrators. We recommend that detailed instructions to the above effect be drawn up together with a suitable scale of fees.

261. The present form of progress reports for superintendents of land records is lengthy and unwieldy. It takes so much time to prepare that it is often prepared incorrectly, provides for elaborate checks which can rarely be applied, contains many details of very little importance, and might be greatly simplified. The same remarks apply to the progress reports of surveyors and inspectors; these contain much information which could more suitably be given in the form of charts.

The statistics in the Annual Report on Land Records Administration have gradually been amplified from year to year to meet special needs, contain much that is unnecessary, omit some details of

importance and are not logically arranged. The contents and arrangements need revision.

Some of the statistics regarding areas given in the Season and Crop Report, Land Records Report and Revenue Administration Report appear conflicting. Figures purporting to show the same area differ in different reports because in fact they relate to different areas; thus the areas given in the Land Records Administration Report exclude those areas on which the land records department is not employed. Such discrepancies should be explained in a footnote as without this precaution the figures are misleading.

262. The improvement of irrigation administration and the appointment of liaison officers for the better co-ordination of the revenue and irrigation departments has recently been considered by a conference. We have studied the minutes of the conference and made some examination of the analogous system in the Central Provinces; we have also discussed the subject with representatives of the Public Works Department. We entirely agree with their view that the assessment and collection of revenue is not properly a function of the irrigation department and we could not approve any measure which, under the guise of improving co-ordination, should tend in that direction. The relations between the revenue and irrigation departments appear satisfactory at present and the chief defect in the existing arrangements seems to be the lack of officers with a knowledge of land revenue work and revenue administration who would, as subordinates of the Executive Engineer, relieve professional officers of supervising canal surveyors and inspectors in marking crops, failures and fallow and would help in systematising the distribution of water. This is a departmental matter on which we do not wish to offer any recommendation.

263. Among minor details which have incidentally attracted our attention the following seem to deserve notice.

Miscellaneous, Rule 52 under the Lower Burma Land and Revenue Act lays down that any person occupying land in contravention of Rule 51 may be served by any Revenue Officer with a notice of ejectment.

a. The temporary occupation of land, Rule 51 however lays down that any person occupying land without recognized status shall be liable to eviction. The intention of Rule 52 is clear enough for ordinary purposes but doubts have been expressed as to its legal effect and it would be well to reconcile the verbal discrepancy between the two rules.

The present form for registration memoranda is a formidable document. The degree of co-ordination between the registration and land records department would probably be improved by the introduction of a form which it would be easier for the clerks in the two departments to handle.

In some provinces the decrees of civil courts are made over to the Collector for execution on the revenue side. It is doubtful how far this is desirable in Burma, and although this procedure might improve co-ordination we are not convinced that it is necessary or expedient.

b. Registration memoranda.

c. Execution of decrees of civil courts.

Under Land Revenue Rule 80 the year of assessment in Lower Burma commences on the 1st July and new settlement rates must be notified before that date. This has occasioned inconvenience in the past as it frequently happens that the final consideration of settlement reports must be expedited in order to prevent a loss of revenue. The procedure which we recommend will obviate this difficulty.

d. The year of assessment. The insufficient supply of settlement reports to district offices deserves attention. We are of opinion that a copy should be supplied to each township and subdivisional office and that in the headquarters office of the Deputy Commissioner there should be not less than three copies.

e. Settlement reports. The Township Books at present maintained have been repeatedly condemned as of no practical value and we agree that they might be abolished. In India the corresponding village note books are chiefly used for dealing with suspensions. It is the practice in some district offices to discourage the practice of submitting petitions through the post.

f. Township books. Although we entirely approve the traditional policy of calling petitions daily in open court, we are of opinion that access through the post is desirable where a petitioner prefers to make his grievance known in this manner, and submits a stamped petition in a prepaid letter; we recommend that this procedure be formally recognized in the District Office Manual. We would also invite attention to the desirability of using carbon paper more freely for duplicating registers and returns; it would seem possible, for example, to supply headmen with carbon copies of the assessment rolls.

g. Office procedure. 264. A summary of our recommendations is given in Appendix I, but it seems appropriate to bring to notice here the desire expressed by officers in other provinces that the opportunity which the members of this committee have enjoyed for making a comparative study of revenue systems should be more widely extended; as for example, by holding conferences, at which directors of land records would meet from time to time in different provinces. We feel that our tour in India has taught us much that we could have learned in no other manner and we venture to suggest that such conferences would promote a general improvement in the technique of land records administration.

Conclusion. Finally we wished to place on record the cheerful endurance of discomfort and the praiseworthy diligence of our clerks, Messrs. Kannapan and Ba Thin, and the assistance, ungrudgingly rendered in various ways, by Mr. Devas, the Superintendent of the office of the Settlement Commissioner. We must also express our cordial acknowledgments to the Government Press for furnishing the proofs of this report with remarkable speed and accuracy.

J. S. FURNIVALL, *President*.
F. NOYCE.
T. COUPER.*
F. A. DESOUZA.

RANGOON: 6th July 1921.

MINUTE OF DISSENT, BY MR. T. COUPER.

1. In Chapter XI of the report, paragraph 95 (iii) (b), it is recommended that representative fields for crop reaping should be selected in office; in this way it is hoped to outflank the subordinate staff which tends to select for reaping fields too good to be representative of their class. With this recommendation I am unable to agree. If the crop reapings in a soil class were so numerous that the arithmetical mean of the outturns represented the average fertility of the class over a term of years, it may be that the proposed method would be sound. But this merit is not claimed for it and in any case crop reapings at settlement can never be numerous enough to admit of this result. To select fields in office seems to me little more than to make a guess; the settlement officer cannot know even whether the field has been worked and, if worked, how it has fared, whether for example it has been planted unusually late or has been heavily manured or attacked by blight. His choice may be a successful gamble or it may not. It should be possible gradually to rid the subordinate staff of the idea that the one purpose of a revision settlement is to increase the revenue as much as possible. In any case if the tendency to select too good fields is ineradicable, it is yet a constant tendency for which the settlement officer can make allowance. This he cannot do for the multifarious accidents which must unknown to him affect fields selected in office.

2. In sub-section (iii) (d) (1) of the same paragraph it is proposed to fetter the discretion of the settlement officer in making deductions from his crop reapings; he is to be discouraged from assuming a normal outturn which is higher than the average of his accepted reapings. It happens at times that all the years in which crop reapings are made are unfavourable to an unusual degree. In such an event the settlement officer must go above his averages in fixing a normal and he should not be cautioned against this; he should be free at his discretion to exceed as to go below the average. The settlement officer has not been a mathematical statistician; he or an assistant settlement officer has visited the kwin, made crop reapings, inspected the soil, questioned cultivators and then come to an opinion on the fertility of each soil class; when the average of his accepted crop reapings has not supported his opinion, he has departed from it in fixing his assumed outturns; in no settlement report that I have consulted are the assumed outturns arithmetical averages of crop reapings. If they had been, much could be urged in favour of such an arithmetical method. For the crop forecasts are based on the normal outturns determined by settlement officers, and in the years preceding 1910, a period which the report contemplates settlement procedure as dominated by mathematics, the rice crop forecast was uniquely successful. But in some years after 1910 the exportable surplus was under-estimated and enquiry showed that

this was due to normal outturns assumed by settlement officers being on the low side. The cotton forecast again has usually been much below the mark. So far therefore from warning settlement officers against exceeding the averages of their crop reapings, experience shows that they should be cautioned rather against going below them. Crop measurements are the settlement officer's most reliable source of information provided he is left free to make his inferences from them.

3. The report recommends in paragraph 104 that the settlement officer should be required in framing an estimate of the cost of cultivation to make "an adequate allowance for all labour expended by the cultivator and his family." The present instructions are condemned because in them "the settlement officer is excused from making a definite allowance for home labour, but expected to make an indefinite allowance." In my opinion it is impossible to frame a definite allowance for home labour; the materials for such an estimate do not exist.

No difficulty arises in tracts where holdings are mostly large and worked by hired labourers with only a few small holders cultivating their own land without outside help; in such tracts the wages of hired labourers are taken into account in estimating cost of cultivation and the small holder has therefore a full allowance made for his own work. But in tracts where all are small holders and no labour is hired it seems to me impossible to define the sum at which home labour is to be valued. Take such an area as the Tamadaw township in Shwebo district. There the cultivator works his land with his family and no labour is hired. Many do not rely solely on agriculture for a living, but when ploughing is over seek employment elsewhere; from one village they may go to Rangoon, from another to Bhamo or Putao, leaving to the women of the household transplanting and harvesting. In such circumstances it seems impossible to estimate in money the home labour of the cultivator whether he goes away or stays at home. Its value cannot be gauged from what the emigrants make by selling sweets in Rangoon or through carpentry at Putao; if it were, the net produce left for taxation would be less than nothing. But there is no other method of estimating it, for in similar adjacent areas there is no hiring of labour from which an allowance could be deduced.

In Lower Burma it seems similarly impossible to arrive at a definite allowance. In his Myaungmya Settlement Report Mr. Grantham notes how widely the work done by an owner varies. "In a small holding the employing cultivator will manage with an assistant who is perhaps unable to plough and receives fifty or sixty baskets of paddy for the season. . . . In holdings of more than one yoke the employer often confines himself to the lighter work and employs a skilled ploughman for each plough at sixty to eighty baskets. But for reasons of age or health or temperament or other interests the employer may wish to take a still less active part in the work and then he will take for one ploughman a man who is capable of acting as his agent and managing the other employees; such a *ganng-saung* must be paid 90, 100 or 120 baskets."

If the work done by the owner varies so much from holding to holding, the estimate of that work's value as framed by the Settlement Officer will have to vary, from tract to tract. In tracts where much labour is hired to work large holdings, it will be the wages of supervision that must be estimated, in other tracts it will be the wages of manual labour.

Mr. McCallum whose example is commended in the report, but who considers the method he employed to be unfitted for general use, thinking it suited only to the temporary conditions in which he carried out the Tharrawaddy settlement, states in his evidence that whatever method is employed of valuing home labour the expenses of supervision must be ruled out as there are too many pitfalls in their calculation. The report does not deal with the question how wages of supervision should be treated. Yet where, as in the Kyauktan and Thôngwa townships of the Hanthawaddy district, over forty per cent. of the holdings exceed 100 acres, an owner who supervises cultivation seems as much as entitled to have the value of his work taken into account as an owner who merely handles a plough. It is not a matter of laziness. Wholtime supervision is essential if the holding is to be worked to its full capacity. A method which purports to estimate the true and full cost of production and yet omits to show how the wages of supervision are to be estimated seems to me unsound.

The report apparently passes by this question because it considers that rents afford a check on cost of production; that cost represents "the normal produce less the amount which a prudent tenant could afford to pay in rent." This check seems to me illusory. From the gross produce a tenant has to meet the rent, the cost of cultivation, the interest on his capital and the cost of living. Since both the interest and the cost of living are unknown quantities, it seems impossible to find the cost of cultivation in this way. Madras procedure however is invoked in aid of this method. The Madras revision settlement instructions forbid any calculation of the cost of cultivation as an ordinary incident of re-settlement. But for special reasons the settlement officers in the two districts which the report cites, Tanjore and Chingleput, did calculate the cost. But I cannot find that they utilized rents as a check on their estimate. What they did was to check the estimates based on general enquiries by considering the expenses of cultivation on the *varan* system. That system may be in name a share produce tenancy, but the Tanjore settlement officer is careful to distinguish it and says that "it is little more than inclusive form of contract for a certain portion of the labour of cultivation" and he states that the persons who can be engaged to work on this system are little different in status from the *pannaiyal* or serf, the man-mortgagee of Madras. Therefore what the settlement officers did in Tanjore and Chingleput was to check their estimates as worked out piece-meal for the different processes of cultivation against the lump sums paid to men who work from seed time up to harvest. This is a very different thing from checking cost of cultivation against fixed produce or even share produce rents and does not show how the one cost can be found by means of two other quantities both of which are unknown. In Burma many tenants have considerable capital and serfdom can hardly

be said to exist. The examples quoted from Madras afford therefore no support to the view that cost of cultivation can be checked by rents.

If the report fails in showing how a definite allowance can be made in money for all labour expended by the cultivator and his family, no course is open, so long as net produce forms the basis of assessment, except to treat the out-of-pocket expenses as the cost of cultivation. These should be averaged and treated by the settlement officers in the same way as he treats the averages of crop reaping modifying the figures where he has good reasons for doing so. If this is done, home labour must be allowed for by taking as revenue a lower fraction of the net produce in tracts where holdings are small and little labour is hired. The report condemns this method as lending support to a view of land tenure which is contrary to fact, exposing Government to a charge of severity in assessment and as taxing thrift and industry. But there is no necessary or even intimate connection between theories of land tenure and methods of estimating the cost of cultivation, nor is the adoption of one or other method likely to save Government from charges of over-assessment.

The report contrasts one tract, A, in which 90 per cent. of the landowners hire all their labour and 10 per cent. hire none, with another, B, in which 90 per cent. of the landowners work themselves and hire no labour while the remaining 10 per cent. are non-resident and do no work themselves in their holdings; if a higher proportion of the net produce is taken as revenue in 'A' than in B, this is said to penalize the industrious 10 per cent. in 'A' who hire no labourers. This opinion seems to me erroneous. The cost of cultivation as calculated under the present instructions for estimating out-of-pocket expenses takes into account the wages of labour when there is a "regular practice of hiring in the assessment tract," the 10 per cent. of cultivating owners who hire no labourers would therefore have the full value of their own home labour allowed for in the estimated cost and would not be penalized as compared with the 90 per cent. who hire all their labour; it is rather the converse which is true for the 90 per cent. have no allowance made for their work of supervision.

To take as revenue a lower fraction of the net produce where holdings are small and worked without hired labour not merely permits an allowance to be made for the home labour of the cultivator, but also makes it possible to tax tracts composed of big landowners on a higher scale than the mere disproportion in cost of cultivation would warrant. Even if an adequate allowance could be defined and were taken into account in estimating the cost of production, it would not usually be possible to take in revenue the same fraction of the net produce throughout a district, for it would not be equitable to tax cultivators with a small surplus and a low standard of living as highly as large landlords. No doubt small holders found in a tract of large landlords which is assessed at a high rate because the average profits of cultivation are high are penalized as compared with small holders in a small holding tract. But this does not arise from failure to allow for their own labour and industry; it is a result inseparable from a system of acre rates which takes no account of the circumstances of each individual cultivator.

If only out-of-pocket expenses are to be taken into account in estimating cost of cultivation, Government should, in my opinion, signalize the difference in the ways in which net produce is estimated in India and Burma by abandoning the half net produce standard. This standard is in any case so far ahead of existing rates as to be useless. It was borrowed from India where it meant a reduction in the revenue demand, but in Burma its influence is in the direction of unduly raising assessments. The report suggests that in Lower Burma in areas where rents are raised as high as active competition for land can raise them, a settlement officer should bear in mind one-third of the rental value as the amount which may suitably be taken as revenue. It is in my opinion desirable that Government should declare this a standard for settlement officers in such areas. If this were done, it would be unnecessary to proclaim half the net produce as a maximum assessment. Such a maximum appears to me useless and impolitic; except in irrigated areas it is impossible to approach it and in areas irrigated from a major work half the net produce may be too small to make the work profitable, especially if home labour is taken into account in calculating net produce. If Government desires to give an assurance against excessive taxation, it would be more practical to lay down that the enhancement over a district at re-settlement shall not exceed thirty-three per cent. as is the rule in Bombay.

4. The settlement procedure which the report recommends is summarized in paragraph 179. The work of the settlement officer is comprised in two stages.

In the first he makes a hurried tour through the district during crop measurement and frames provisional tracts. Then tract by tract the assistant settlement officers and senior inspectors visit every village and examine in detail one kwin in four; from this examination and on general information they form an opinion on the soil classification not merely in the kwins which they visit, but in all the kwins of the tract. With the general information which they acquire especially of outturns and prices and by a comparison of rental, sale and mortgage values they investigate the comparative equity of the expiring assessment. At the same time they make enquiries in selected villages into the cost of cultivation. As they go through their tracts they frame for each kwin an estimate of the gross produce and its value and they record an opinion on the extent to which the current assessment should be raised or lowered.

Through their reports and from his own tours the settlement officer forms his own conception of the general conditions in each tract and he makes for each an estimate of the gross produce and its value. From this he deducts the full cost of production at which he arrives partly through his own enquiries and partly through those of the assistant settlement officers and senior inspectors. In this way he calculates the rental produce in each tract; half of this is the maximum assessment. He compares this with the value of the net produce at the last settlement which he works out on the assumptions of outturns, prices and costs of cultivation made by the former settlement officer. Then from the fixed produce rents actually paid and from the estimated share produce rents he makes a valuation of

the true rental of the tract now and at last settlement. He compares his estimates of rental produce and rental value, and in the light of the current incidence and of the sale and mortgage rates, both those current and those prevailing at last settlement, he determines provisionally the tract assessment. He tests this against the estimates which his subordinates have made kwin by kwin, and finally he fixes the aggregate sum which he thinks should be taken as revenue from the tract and the sums which the individual kwins should pay. When this has been done for every tract and all the kwins, the settlement officer submits his report to Government which after consulting public opinion approves or modifies the tract and kwin demands proposed by him.

In the second stage the settlement officer classifies the soils and forms assessment classes, fixing for each assessment class in the tract a normal revenue rate. If the kwins in a tract differ in assessable capacity he forms them into groups and modifies the tract rates to suit the circumstances of each group. He announces the demand kwin by kwin and as the distribution in each tract is finished he submits to the Financial Commissioner a printed statement showing kwin by kwin the former demand and incidence per acre, the demand and incidence provisionally sanctioned by Government on his report and the demand and incidence as now announced by him. In this printed statement if in any kwin the demand as announced differs from that provisionally sanctioned by more than 25 per cent., he gives his reasons for the variation. If the total assessment of a tract differs by more than 3 per cent. from that provisionally sanctioned, the announcement of the demand is postponed and a report submitted for the orders of Government.

The final report after three or four years' work is to comprise nothing more than the orders of Government on the first report with subsequent modification if any, a description of the manner in which the orders have been carried out, a statement of the new demand, statistics of the crop reapings and instructions to the land records staff for the working of the new settlement.

So long as the theoretical assessment is a fraction of the rental produce, the assessable capacity of a kwin or tract must be found in the first instance by reference to its gross produce. The proposed procedure must therefore be judged by its ability to provide a reliable estimate of gross produce. But in order to discover accurately the yield of any kwin it is necessary first to classify its soil according to fertility. In the first stage of settlement however no detailed classification is to be made. Therefore either the old soil classification is to be accepted as the basis on which the produce estimate is to be calculated from the new assumed outturns, or the assistant settlement officers and senior inspectors, as they examine one-quarter of the kwin, must determine not only for that quarter but for the other three-quarters as well, how many acres are to be lowered from the first to any inferior soil class and what area is to be transferred from the second or third into a higher class. If the first alternative be adopted, the estimate of gross produce will often be valueless, for, in Lower Burma especially, very large areas have to be transferred to lower soil classes at revision settlements, either

because the land has deteriorated or because extensions since settlement have been classified too highly by the land records staff. Thus in Myaungmya 125,000 acres were reduced from the first to the second class, 28,000 from the first to third, and 22,000 from the second to the third class. At the same time 19,000 acres were raised from the second to the first class. The second alternative will not in my opinion be practicable. It is not possible for even an experienced assistant settlement officer, let alone a senior inspector, from the examination of one kwin in four, supplemented by general information, to form even an approximate estimate of the acreage by which soil classes will be increased or decreased when classification is revised. To calculate gross produce after such an examination would be mere guess work.

On either alternative therefore it would seem that the gross produce estimate cannot be considered trustworthy. Similar considerations are applicable to the estimate of the rental value which the assistant settlement officers and senior inspectors are to make kwin by kwin. This may be calculated by averaging the fixed produce rents paid for holdings in the different soils and multiplying the total area in each existing soil class by the average rent. If done in this way, the calculation will be unreliable in tracts where the soil classification required extensive revision. It will be equally unreliable if done by averaging the rents paid and multiplying the area of the kwin by this average without regard to the area in each soil class. It will be similarly unreliable if made with reference to the new soil class areas as estimated roughly by the assistant settlement officers or senior inspector after their partial examination.

Fixed cash rents are negligible almost everywhere and a calculation of rental value based on share rents can furnish no independent check on the estimation of rental produce. For the share rent calculation is based upon and presupposes the accuracy of the gross produce outturn. Tenants are not to be asked what they actually paid in rent, but what fraction of their produce they paid, and the rental of a tract is then to be worked out from the assumed gross produce. Over most of Upper Burma only share produce rents are found and the comparison of rental produce and rental value which the settlement officer is to make will therefore be illusory there; he has only one estimate though he calls it by two names.

It is claimed for the procedure recommended that under it Government will be provided with far more adequate material for a consideration of the proposed assessments than at present and that it will possess a far greater degree of control over the settlement officer. Neither claim seems to be valid. Under the present system three-quarters of the kwins are not assessed without being visited, and the results of the inspection are tabulated in tables of outturns, rents, sales and mortgages. Again, so far from being more controlled the settlement officer will, apart from appeals preferred, be left to himself. Provided he does not depart from the sanctioned tract demand by over 3 per cent., all he has to do in any kwin is to keep within 25 per cent. of the sanctioned kwin demand. Even where he exceeds this, it will be impossible for the Financial Commissioner to be supplied within the limits of a printed statement, with sufficient

information to permit of his exercising intelligent control. Within the 25 per cent. the settlement officer will be able to do as he pleases; he may overassess paddy land and underassess *ya* or he may throw a disproportionate part of the assessment on to the better or the poorer soils. The fixing of a lump *kwin* assessment and its subsequent distribution are obverse and reverse of the same process, and just as the lump assessment should be based on produce and rental values, so should the distribution; the settlement officer should justify it by reference to the profits made and the rents paid soil class by soil class in the different kinds of cultivation. The proposed procedure is said to resemble that in the Central Provinces, but there the settlement officer is most minutely controlled, and the papers dealing with the assessment valuation of each village are submitted to Government along with a detailed printed report on each tract.

The procedure is derived from Madras rather than from the Central Provinces. In Madras, however, soil classification once made is usually accepted as permanent and classes from the different soil series, as for example the best sand, a moderate clay and an inferior loam, are grouped together in a permanent assessment category and assessed at one rate. In 1883 the Madras Government accepted the principle that "in districts in which the revenue has been *adequately* assessed' the element of price should alone be considered in subsequent revisions" (Land Revenue Policy of the Indian Government, page 182), and revision settlements in Madras are mainly a raising of rates by assessment categories in view of the rise in the price of food grains. With an assessment already adequate and with rising prices this may be a sufficient method, but in Burma, Government has never recognized the existing rates as even approximating to what it is entitled to receive as revenue, and should prices begin to fall instead of rising steadily and Government none the less desire to increase the demand, I think that a much more detailed inquiry into the assessable capacity of a district would be necessary than is afforded by the procedure recommended.

Conditions in the Punjab resemble those of Upper Burma. The land is owned by zamindars, but the holdings are as small as the holdings of Burman ryots. Well irrigation is common and within the same main kind the soil is perhaps more uniform than in Burma, so that classification of wells may be said to take the place of soil classification. But such differences are immaterial and I think that the unreliability which is inherent in any estimate of gross produce or rental value made without a full examination of each *kwin* and before a revision of soil classification, would be avoided by modelling procedure on what is done in the Punjab. There the settlement officer deals with each *tahsil* separately. He divides it into assessment circles and finds out by full enquiry the assessable capacity of each circle and the aggregate capacity of the *tahsil*. He reports this to Government and at the same time reports the rates at which he proposes to assess the different kinds of land in each circle. When Government has passed orders on the report, the settlement officer distributes the assessment. When this has been done for each *tahsil*, he writes a final report for the district, summarizing the assessment reports and describing how the assessment has been distributed along

with notes on such other matters of the agricultural economy or administration of the districts as are pertinent.

On this procedure a settlement in Burma might be carried out much as follows. The area for settlement will usually be a district and the duration of settlement operations will usually be four years. Very large districts will require a fifth or it may be a sixth year. For one or two small districts three years will probably suffice.

The forecast will remain as it is. Deputy Commissioners without settlement experience will be able to prepare it in the future as they have done in the past. Even at present its preparation has on occasion largely devolved on the Commissioner of Settlements. The settlement officer will take up his appointment in July, and a strong section of the settlement party will be transferred to the district at the same time. This section will be employed in procuring maps and preparing statements to be used during the coming field season in soil classification and assessment enquiries. The maps and statements will be those enumerated in paragraph 163. If the settlement officer and a section of his staff arrive in July, it would be unnecessary for the land records department to prepare the statements. As soon as he has set his staff to work, the settlement officer will make a study of the area to be settled. He will read the reports of the expiring settlement and its predecessors. A study of the district season and crop reports, particularly of Statement III, will show him what new crops have been introduced since settlement and what changes have taken place in the areas under old crops. The Census reports will reveal the densities and movements of population. A tour through the districts, limited though it must be in Lower Burma to rail and steamer routes, and talks with Inspectors of Land Records, revenue surveyors and headmen and local officers will give substance to his reading and enable him to form a rough conception of the salient economic differences in different parts of the district. He will make no formal primary tracts. He will learn the main crops and varieties, the tracts where holdings are large and labour hired and those where small holders work their own land, those where plough cattle are hired and where they are bred by the cultivator himself, the market towns and money lending centres. During this time too he will be preparing the report on the prices which he proposes to assume for the valuation of produce; this will be submitted separately and early for the orders of the Financial Commissioner. By the end of October the settlement officer will have been joined by his full staff. With this and with the help of the revenue surveyors crop measurement will be undertaken. If the staff is adequate, the settlement officer may make reapings over the whole district. If it is too small as it will be in a very large district he will have to confine the reapings to the areas over which he is to carry out soil classification and assessment inquiries in the first, second and third years of his operations.

In January soil classification will begin. The fixed produce rents paid in the preceding year will be available for reference being marked on the map or recorded in a statement compiled in the rains. The classifier will record the local valuation so far as that is consistent with a fluctuating assessment, on the lines indicated in Chapter XIII, and the number of classes will not be more than those recognized by

the cultivators. The classes within the same main kind in any kwin will have no necessary relation with those in adjacent kwins. Marked differences in soil fertility as where the first class in one kwin is not more valuable than the second class in an adjoining kwin will be met by assigning the two kwins to different tracts or by subsequently reducing each class in the former kwin one grade, thus making the first into a second class. When the assistant settlement officer has checked the soil classification, he will group the soil classes into assessment classes where he considers that it is unnecessary for assessment purposes to maintain them apart, and he will then give a soil classification slip to the owner of each holding. In this will be set out the assessment classes as formed by him. A consolidated statement will at the same time be published in the village, showing the classification of every holding in the kwin. Any one aggrieved will be at liberty to appeal to the settlement officer against the classification. A fortnight will be allowed in which to appeal, and no second appeal will be permitted. But the Commissioner of Settlements will at his inspections satisfy himself that appeals have been properly decided.

On the basis of the new classification and from the assumed out-turns which he considers suitable the assistant settlement officer will prepare an estimate of gross produce for each kwin. On the same basis he will make a rental valuation of the kwin. For this the rents paid in the current year will have to be recorded by members of his section. The assistant settlement officer must carefully scrutinize these actual rents and find out what deductions must be made from them, for example because of reductions given by landlords in bad years or because landlords have to provide manure or maintain bunds. Only after such scrutiny will it be possible to work out a true rental valuation, and it will therefore be impossible on this procedure to use the land records figures of the current year which will not be available before the end of February. The assistant settlement officer will also make enquiries into cost of cultivation. He will be careful to record his opinion of the relative fertility and assessable capacity of each kwin as compared with those adjoining it. As he completes his records and estimates he will forward them to the settlement officer.

The settlement party will work usually in three sections over the area allotted for each year's operations. The settlement officer will visit each section in turn and check the work done, hearing appeals and revising the assistant settlement officer's conclusions as may be necessary. At a convenient time he will, himself if possible, carry out a detailed enquiry into the history since the last settlement of two small groups of kwins. A history sheet will be prepared for each holding from the land records registers and the settlement officer will by public enquiry from assembled villagers find out the reason for every transfer.

During the field season the settlement officer as he goes along will have built up roughly assessment tracts; he will treat each kwin as a unit and build up on that basis. In the recess he will finally determine these assessment tracts, basing their formation on close similarity in soils, rainfall, crops grown, prices, condition of land

holding and density of population. He will then determine from the enquiries made in the field the cost of cultivation in each tract and will work out the half net produce of each tract and of every kwin in it, and the true rental value. He will fix the amount which he considers should be taken as revenue and will frame acre rates by assessment classes to give this amount. For each assessment class he will compare these rates with standards of net produce and rents per acre and will explain variations from the standards.

If a district has three subdivisions, separate reports on each subdivision will be made. Usually the report on the first subdivision will not be submitted after one year's working, but will be postponed till the rains subsequent to the second year's field work. By this postponement the settlement officer will be able to test his assumed outturns by a second year's crop measurement.

The first and second year's assessment reports, one for each subdivision or, where a district has only two subdivisions, one for such area as may be found most convenient, will be submitted after the second year's field work. An abstract of the settlement officer's proposals will be printed in the Burma Gazette, and in each assessment tract also, the total assessment and the normal rates proposed for the tract will be published. In the meantime the settlement officer will proceed with work in the third subdivision, in which crop measurement will have already been carried out in the second if not also in the first year. He will make further measurements, carry out inquiries as in the other subdivisions and submit his assessment report during the rains.

By this time the orders of Government on the reports of the first and second subdivisions will have been communicated to the settlement officer. If Government has approved his proposals he will have to do little more than take out from the kwin records the total assessment which he has provisionally noted when preparing his assessment proposals as suitable to the kwin. In finally assessing any kwin he will be at liberty to go 25 per cent. above or below the normal tract rates which Government has approved, but the aggregate tract assessment should not differ from the sanctioned aggregate by more than 3 per cent. Should he desire to exceed the 25 per cent. limits he should obtain the sanction of the Financial Commissioner before he announces the demand. Departure by more than 3 per cent. from the sanctioned tract aggregate will require the orders of Government. The maximum demand at the new rates will be worked out for every holding and slips showing the assessment classes, the maximum demand and the temporary rebate if any will be delivered by assistant settlement officers to all landowners, who will be informed that if they wish to appeal their petitions to the Commissioner of Settlements and Land Records must be lodged with the settlement officer or deputy commissioner within a month. The slip will have to state that no account has been taken of extensions of cultivation which may have been made after soil classification. Where Government has not approved the proposals of the settlement officer, it will state by how much more or less the proposed demand in any tract is to be varied and the settlement officer will have to recast his proposed demands kwin by kwin. In such circumstances.

before announcing the assessments the settlement officer should obtain the Financial Commissioner's sanction to his new assessment class rates in the tracts concerned. The orders of Government on the remaining report should be ready by March and the assessment will be distributed and announced in the third subdivision before the rains. In this fourth year while he is supervising the distribution the settlement officer will at the same time be preparing a final report on his work as a whole. In this he will summarize the assessment proposals and the orders passed on them and will describe how the distribution has been made. The final report will include a discussion of the current agricultural practice, of the conditions of land owners, tenants and workmen and their standards of living, of indebtedness, grazing grounds, remuneration of headmen, in short of anything in the agricultural economy or revenue administration of the district which the settlement officer deems pertinent and worthy of inclusion. The report on prices submitted at the beginning of the operations with the orders passed by the Financial Commissioner will be printed as an appendix. The report will be finished by October at latest when any part of his staff still with the settlement officer will be ready for transfer to another district. Any orders passed in appeal by the Commissioner of Settlements or the Financial Commissioner which modify the assessment as distributed will be communicated to the deputy commissioner direct if the settlement officer has made over his records to the land records department and left the district.

In the above sketch no reference is made to the record of rights. This should in my opinion be usually prepared by special parties organized for that purpose alone. At subsequent settlements its revision could be undertaken by the Assistant Settlement Officers at the time of soil classification.

5. In paragraph 194 the recommendation is made that the revenue surveyor when preparing his assessment register should make the assessment in accordance with the actual facts as he finds them in the field; he is not to assess the person whom the record of rights shows to be liable, but is to substitute for his name that of any person whom he finds in possession and who claims to hold the land in his own right. This recommendation seems to me unsuitable. In paragraph 190 it is said that the record of rights in India is not a record of title, but the statement is misleading; both the Director of Land Records in the Punjab and Sir George Curtis in Bombay describe the record of rights as a record of title (Report of the Madras Survey and Land Records Committee, Volume II, pages 280 and 285). In any case the presumption which it is proposed to attach to the record in Burma is intended to make entries in the record *prima facie* evidence of title. Therefore if the surveyor is not to follow the record of rights, but is to maintain the assessment register as a register of possession, there will be a divorce between the record of fiscal liability and the record of title, and the private knowledge of the surveyor will be substituted for the publicly attested register. This is the very state of things which the record of rights was designed in Bombay to abolish.

Particulars of tenancy should not be entered in the assessment register and I doubt whether statistical particulars should find a

place in the Registers of Mutations ; probably a separate register should be kept for tenancy, sale and mortgage statistics.

The draft form of the record of rights seems to me too long and the instructions open to criticism in several respects, particularly in the columns dealing with inheritance. Where an estate is undivided it should be sufficient to record the name of senior co-heir with the words "and others" after it. Complicated questions about stems dependent on the law of inheritance and representation should be left to civil courts alone for decision. Nor do I think the term "occupant" should be used as in column 18. It is borrowed from Bombay where it denotes a person possessing landholder's status and its use in the record seems unnecessary.

T. COUPER.

RANGOON, *the 13th July, 1921.*

APPENDIX I.

SUMMARY OF RECOMMENDATIONS.

This appendix contain a summary of our recommendations. The numbers in brackets refer to the paragraphs in which the recommendations are contained. Some reforms of wide scope involve numerous changes of detail which can be grouped under a single head; in such cases it is unnecessary to particularise the details and one reference is given to the head under which they have been grouped.

1. In framing estimates of outturns the settlement officer should utilize material which is at present neglected and observe precautions which now do not receive adequate attention. (95)

2. In place of calculating the cost of cultivation as at present the settlement officer should estimate the normal cost of production over a long period making an adequate allowance for all home labour. (104).

3. Statistics bearing on the outturn and cost of production should be carefully examined and preserved but not published without full explanation. (95, 104, 178)

4. The basis of assessment should be the rental produce, that is, the value of the gross produce less the cost of production instead of the net produce as at present defined and calculated. (106)

5. The rental produce should be calculated by tracts and one half the rental produce should be prescribed as the maximum assessment instead of as the standard. (107, 108)

6. The proposals for the actual assessment should be justified by the examination of rental and land values and other relevant considerations. (109, 119)

7. The average rental of a tract should be considered as ordinarily the best guide to its assessable capacity, but in utilising rental value special regard should be paid to the practice of buying land with borrowed money. (113, 114)

8. Mortgage and sale values should be freely used to supplement rental value in estimating assessable capacity. (115)

9. The gross produce should be used as an indication of assessable capacity where rental and land values are inadequate. (116)

10. The incidence of the current demand should be regarded as the safest measure of the proposed demand. (117)

11. The current incidence of recent settlements in adjacent districts should be examined by the settlement officer when framing his proposals. (117)

12. Enquiries into the cost of living and indebtedness should not be undertaken without special reason. (118)

13. A record of the data for classification should be prepared. (130)

14. In working out the scheme for such a record the assistance of the agricultural department should be obtained. (132)

15. The varieties of soil, position, etc., illustrated in the record, should be grouped for assessment purposes into assessment classes. (134)
16. The assessment classes for rice land should be standardised with reference to the number of baskets of paddy which the class, for assessment purposes, can be assumed to yield. (134)
17. The double classification of rice land should only be adopted with the previous sanction of the Settlement Commissioner. (135)
18. The terms Primary Tract and Assessment Tract should be abandoned and replaced by the terms Tract and Assessment Group; a tract being a geographically continuous unit; and an assessment group, a collection of kwins and villages within the tract, not necessarily continuous. (137)
19. The object of tracting should be to divide the settlement area into smaller areas so far homogeneous that rates generally applicable can be justified on considerations common to the whole tract. (137)
20. The object of grouping should be to adjust the tract rates to individual villages and kwins within the tract. (137)
21. So far as possible main kinds of cultivation should be standardised and the maps of the Land Records Department should only distinguish main kinds which need differentiation for fiscal and statistical purposes. (140)
22. In precarious areas the settlement officer should consider the desirability of increasing the elasticity of the demand by pitching rates for dry land moderately in comparison with those for rice land. (141)
23. Formal recognition should be accorded to certain principles of classification. (142)
24. Miscellaneous items of the demand such as the assessment of special crops, gardens, trees, and thathameda should be considered with reference to the demand as a whole. (143)
25. No assessments should be levied at crop rates except on land with an impermanent surface, and on some double cropped land. (144)
26. Palm trees should ordinarily be exempted from assessment in villages where the number of assessable trees does not exceed 500. (145)
27. Particulars regarding the ownership and mortgage of palm trees should not be recorded except so far as this may be necessary for the record of rights. (145)
28. No attempt should be made to determine the net or rental produce of palm tree cultivation, but it should be assessed on general considerations, particularly with reference to rents. (145)
29. The capitation-tax and the thathameda-tax should be converted into local rates and assessed as house taxes according to the quality of the building, and the date for the collection of the capitation-tax should be postponed. (146)
30. For the adjustment of thathameda no detailed enquiry by individuals should be attempted, but the rates should be framed on general considerations regarding the current incidence, the incidence in adjacent districts and the incidence of capitation-tax in Lower Burma. (147)
31. On irrigated land the total assessment including the charge for water should be fixed by the settlement officer. (148)

32. An estimate of the revenue which would have accrued independently of irrigation should be framed by the settlement officer and credited to Land Revenue. (149)

33. Either the Irrigation Department should be credited with the whole enhancement of revenue due to irrigation or only with so much as represents the commercial value of the water; on the latter alternative, the commercial value should be determined by the value of the water on the poorest soil. (150 to 152)

34. Compensation should be paid for damage to private irrigation works. (150)

35. Drainage rates should be calculated on the same principle as water-rates and the credit to the irrigation department similarly determined. (157)

36. The preparations for settlement should be conducted in two stages. In the first stage the Settlement Commissioner should examine the preliminary arrangements for survey. In the final stage the land records department should prepare the necessary map and statements. (161, 162)

37. Settlement operations should be conducted in three stages: the first stage should comprise the collection and analysis of material relevant to the assessment and the submission of assessment proposals; the second stage should be the consideration of the proposals by the public and Government; the third stage should be the introduction of the settlement by the settlement officer in accordance with the orders of Government. (160)

38. During the first recess at the end of the first stage the settlement officer should submit a report containing his proposals for assessment and for the further conduct of the settlement. (166)

39. The proposals should then be published for criticism, considered in a conference attended by representatives of the public and submitted for Government to pass orders, provisionally fixing the assessment and prescribing the further enquiries to be held. (168, 169)

40. No limitation of enhancements should be prescribed. (169)

41. For the present twenty years is a suitable period for the currency of settlements. (169)

42. The settlement officer should then introduce the settlement, classifying the soil, preparing or re-attesting the record of rights, and conducting only such further enquiries as had been directed by Government. (170)

43. Each land-owner should be supplied by the classifier with an extract from the record of classification showing the classification of his land. (171)

44. At any stage if the settlement officer considers that the total assessment of a tract should differ by more than 3 per cent. from that provisionally sanctioned he should obtain the further orders of Government. (174)

45. In other cases he should announce the demand, stating that it would not be final until confirmed, and that appeals against village assessment, but not against individual assessments, could be submitted to the Settlement Commissioner within one month. (174)

46. He should then submit the proposals to the Financial Commissioner for orders, explaining any variation by more than 25 per cent. from the provisional sanction in the assessment for any village. (174)

47. The individual assessments should be calculated during the recess and an extract from the record of rights comparing the old and new assessments should be prepared for each land-owner. (175)

48. At the same time the new assessment-roll should be prepared by the Land Records establishment under the supervision of the superintendent and the direction of the settlement officer. (175)

49. Deferred enhancements should be calculated as rebates in the settlement Office and the immediate enhancement should be limited to one-third of the current assessment, the balance being taken every 5th year by instalments not exceeding the original enhancement. (176)

50. Private improvements should be exempted from enhancement for the period of settlement. (177)

51. Paragraph 481 of the Land Records Manual should be amended. (177)

52. At the end of settlement a final report summarising the operations should be submitted. (178)

53. Direction 2 of the Land Revenue Directions should be amended to make clear the intention of Government. (184)

54. A record of rights should be prepared, in the first instance at settlement and subsequently in other districts by a special staff. (189, 191)

55. The record should contain full information regarding private rights, public rights and rights of user; public lands should be demarcated so far as possible, and private claims if the parties would pay the cost. (193)

56. The record should be maintained in the township office and kept up to date by a register of mutations. (194)

57. The revenue surveyor should annually prepare an assessment roll, based primarily on the record and corrected in the field according to the facts as he finds them; when the facts are not in agreement with the provisional entries he should enter the necessary particulars in his mutation register and in this manner report them to the township officer, as record officer. (194)

58. Registration officers and civil and revenue courts should report transfers to the record officer. A special record officer should be appointed if necessary. (195, 250)

59. In mutation proceedings the record officer should ascertain that the transfer is in order and in the event of dispute open proceedings, hold a summary enquiry and refer any aggrieved party to a civil court. (195)

60. Every entry in the record should be presumed to be correct until the contrary is proved; there should be no distinction in this respect between public and private rights. (196)

61. Copies or extracts from the record should be required in all plaints, and plans should depict adjacent holdings sufficiently for identification. (196)

62. Documents for registration should contain a description of the land according to the current record and if practicable certified extracts should be attached. (196)

63. The tax-ticket should be endorsed with a notice showing that it carried no presumption of title. (196)

64. Parties to a transfer should be liable to a penalty for failure to report. (196)

65. Statistics of cropped areas should be compiled by tracts and so far as practicable illustrated by graphs. (198)

66. The field register should furnish crop statistics by assessment classes. (198)

67. The Commissioner of Settlements should prepare the annual crop forecasts but should consult the Director of Agriculture. (199)

68. District officers should be directed to make use of non-official agencies so far as possible in the preparation of forecasts. (199)

69. Surveyors should not record wholesale harvest prices solely in their headquarters but in each kwin visited during field work. (200)

70. District returns of the prices of food grains should be expressed in viss and pounds instead of in seers and chittacks. (200)

71. The Season and Crop Report should be prepared during the recess. (201)

72. In Lower Burma the mortgage and sale statistics should be compiled separately for rice land, and rental statistics for fixed produce rents on rice land should show the rents in terms of paddy. (202)

73. Usufructuary mortgages and partnership and share produce tenancies should be included in the statistics; until this change is introduced, the publication of statistics in Upper Burma should be suspended and such particulars should only be recorded so far as is necessary for assessment purposes. (202)

74. The work of the surveyor in recording economic statistics should be simplified. (203)

75. During the year preceding settlement and also during the first year of settlement, surveyors should be relieved of survey work and required to record additional particulars. (203)

76. The rules for the preservation of permanent survey marks should be amended. (207)

77. District requirements in respect of traversers and draughtsmen should be examined and deficiencies made good. (208)

78. The special survey party should be organized on a permanent footing as a survey branch of the land records department. The officer in charge should be appointed Assistant Director for Surveys to inspect the programmes and progress of district surveys, arranging annually a three years' programme for each district, to inspect the progress of map printing and, with the help of an assistant superintendent, to conduct large scale revenue surveys. (209)

79. Arrangements should be made with the Survey of India Department for relieving the provincial survey branch of work not required for the revenue survey, for assistance in large scale surveys, and for training surveyors and survey teachers. (210)

80. Experiments in the direction of fixed assessments should be made by introducing holding settlements in certain kwins. (224)

81. Intermediate fallow rates between the full rate and the two anna rate should be abolished so far as practicable and where not abolished should be specified by Government and notified. (228)

82. Applications for the two-anna rate should bear a certificate that the land has not been used for profit or for any non-agricultural purpose. (228)

83. Where surveyors in Lower Burma are allowed to exempt crops from assessment on account of floods they should be allowed to

exempt crops totally destroyed by any cause and no distinction should be made between cultivators and non-cultivators. (230)

84. The feasibility of applying the "quarter normal rule" in Prome District and other insecure areas of Lower Burma should be examined. (230)

85. In precarious areas in Upper Burma crops assessed at the *kaing* season, unless grown on island or riverine land, should receive exemption to the same extent as crops grown at other seasons. (231)

86. Temporary surveyors should not be employed on the assessment of island crops. (231)

87. The feasibility of abolishing the quarter normal rule for dry crops in Upper Burma, and in the alternative the feasibility of abolishing remission procedure by extending the quarter normal rule should be examined. (231, 232)

88. Special officers appointed for remission work should have experience of land records work and so far as practicable be appointed from among land records inspectors. (232)

89. Remissions should be granted by individual holdings. (232)

90. In irrigated areas revenue officers should be allowed as an experiment to dispose finally of applications for remission without prior reference to irrigation officers. (232)

91. Fluctuations in the annual demand should be scrutinized by means of graphs maintained for each settlement tract in duplicate in the offices of the Divisional Commissioner and Deputy Commissioner. (233)

92. In most Lower Burma districts, and in some Upper Burma districts, surveyors should be grouped at township (or district) headquarters. (234)

93. Holding numbers should be made permanent as far as possible, but the general introduction of permanent holding numbers should be postponed until the new form of register is introduced. (236)

94. Pending the introduction of permanent holding numbers, measures should be taken to reduce the number of changes. (236)

95. The new draft Land Records Manual should be used as the basis of a new compilation which should be issued by instalments. (237)

96. The annual tax-ticket should show full details of the assessment. (239)

97. The collection of revenue should be made less summary. (242)

98. The feasibility of crediting interest on Government stock to land revenue should be examined. (243)

99. In districts where Land Records work presents exceptional difficulty, revenue surveyors should be relieved of survey work and experiments should be made in the omission of details regarding crops, assessments and occupation from the map. (245)

100. The system of fixed *kwin* assessments with distribution by *thamadis* should be abandoned and a simplified system of assessment by surveyors be introduced; where the area is too poor for this no tax other than *thathameda* should be collected. (246)

101. The system of fluctuating *kwin* assessments should be abandoned and a simplified system of assessment by surveyors introduced as soon as practicable. (247)

102. Systematic arrangements should be made for the extension of supplementary survey. (248)

103. The question of substituting fixed emoluments for payment by commission as the remuneration of headmen should be examined. (249)

104. The division of function between the revenue and land records department should be retained. (250)

105. The charges of land records inspectors should be brought into accordance with township boundaries. (250)

106. Selected inspectors of land records should be appointed deputy township officers for the exercise of revenue functions and particularly as special records officer when a record of rights is introduced. (250)

107. Superintendents of Land Records should enjoy the status of subdivisional officers, and their emoluments and prospects should be in no way inferior to those of any provincial civil service. (251)

108. The appointment of Deputy Director should be reserved for a member of the Burma Commission; a second Assistant Director should be appointed for general administration. (252)

109. The Financial Commissioner should continue to exercise the present degree of control over settlements but should become a member of Government; no change is necessary pending the introduction of constitutional reforms. (252)

110. The Inland Trade Registration Department should be made over to the Director of Industries, and the Commissioner of Settlements and Land Records should be appointed Inspector-General of Registration with an assistant to inspect registration offices and the record of rights. (252)

111. Surveyors should be eligible for a good conduct allowance. (253)

112. One-quarter of the inspectors of land records should be appointed direct from outside the department and undergo a special course of training. (253)

113. Inspectors of land records should not be confirmed in that appointment until they have served a year on probation and passed an examination. (253)

114. The pay and allowance of the subordinate land records and settlements need further consideration. (253, 255)

115. Vacancies in the superior land records service should be publicly advertised before selections are made. (253)

116. The number of assistant superintendents is inadequate. The present grading of districts should be reconsidered, and an assistant superintendent should be posted to every first class district and to second class districts so far as possible. (253)

117. Assistant superintendents on probation should undergo a course of settlement training for one year. (253)

118. The district superintendent should be appointed an assistant settlement-officer for the period of settlement. (256)

119. The arrangements for training revenue officers in land records and settlement work should be revised. (254)

120. Field clerks should undergo a course in practical agriculture before appointment as soil classifiers. (255)

121. Each settlement party should contain so far as possible one assistant from the Burma Commission, one from the Land Records Service or the Burma Civil Service, and one promoted from the ranks. Assistants from the Land Records Service should join the department for five years. (255)

122. Legislative and economic measures to improve agrarian conditions in Lower Burma are of urgent importance. (257)

123. The distinction between state and non-state land in Upper Burma should be abolished. (258)

124. The provisions for the temporary relinquishment of land in Lower Burma should be cancelled. (258)

125. The definition of a village in the Lower Burma Town and Village Lands Act should be amended. (258)

126. In Upper Burma private rights in residential lands should be acknowledged. (258)

127. Town lands should be surveyed on the field book measurement system. (260)

128. Urban areas should be constituted separate survey charges so far as practicable and experiments should be made in the appointment of special inspectors for town lands survey work. (260)

129. The demarcation and survey of fisheries requires attention. (260)

130. Experiments should be made in the licensing of surveyors for private survey work. Land Records subordinates should only undertake private survey work by permission of the superintendent; detailed instructions on this subject should be drawn up with a suitable scale of fees. (260)

131. Departmental reports should be simplified and replaced so far as practicable by charts. (261)

132. The Report on Land Records Administration should be re-arranged and apparent discrepancies between statistics in different reports purporting to illustrate the same facts should be explained by foot-notes. (261)

133. Certain minor administrative reforms deserve attention. (263)

APPENDIX II.

LAND REVENUE SYSTEM IN INDIA.

THE LAND REVENUE SYSTEM OF BOMBAY.

1.—*The Basis, Standard and Principles of Assessment.*

1. The system of land revenue in Bombay is ryotwari; the assessment is imposed, not upon the large estate or the village as a whole, but upon the separate small holdings of individuals who are regarded as occupants and not as tenants of large proprietors. This principle is laid down clearly in section 3 of the first Bombay ordinance dealing with the subject of land revenue (Bombay Regulation XVII of 1827) which runs as follows:—"The settlement of the assessment shall be made with the occupant of the land. The cultivator, when the land is held by him direct from Government, is to be considered the occupant; and when it is not so held, the person having the highest right or holding, recognized by the custom of the country or resting on specific grant, which intervenes between Government and the cultivator is to be so considered." The land revenue does not purport to represent any standard proportion of the net produce or profits of cultivation or of the assets of land owners, but, as explained more fully below, is determined by general considerations.

2. The term for which the land revenue of each district or part of a district is settled is thirty years. During this period, the revenue demand on assessed land which is occupied only varies from year to year where—

- (a) suspensions or remissions are granted owing to famine, drought and general failure of the crops, floods, etc ;
- (b) the classification is altered by Government from rice land or garden land to dry land, which very rarely happens, and
- (c) where land classed as dry is irrigated from canals, tanks or other sources maintained by Government, when it pays a water rate in addition to the land revenue and calculated independently of it.

It should be noted that the individual remissions on wet land for failure of supply in the Government source from which they are irrigated which are so important a feature in the Madras system are absent in Bombay. The reliability of the source is an important element in the classification and it was considered sufficient to fix the rates on the assumption that there would be bad years. It results, therefore, that the assessment system of Bombay is far more "fixed" than it is in Madras. A cultivator who improves land is, as in Madras, exempted from any future enhancement of revenue on that account.

3. The enhancement of revenue at resettlement is limited by rule to 33 per cent. from a *taluka* (township) or a group of villages, 66 per cent. from a single

village and 100 per cent. from the individual holding. The exact significance of the term "group" is explained below. Where the resettlement results in the assessment payable on any individual holding being enhanced by more than 25 per cent. the increase in assessment is imposed gradually. An enhancement equal to 25 per cent. of the old assessment is imposed every two years until the full new assessment is reached.

4. Expenditure by Government on irrigation is recouped in two different ways according as the land was or was not classed as dry land at the original settlement.

Water rate. Land then classed as rice land or garden land pays a consolidated assessment determined in the manner subsequently explained. Land irrigated from canals, tanks or other sources maintained by Government and constructed since the original settlement pays a water rate in addition to the land revenue. The land revenue paid by the land is the ordinary dry rate and is credited as land revenue. The water rate varies with the crop and may be as high as Rs. 45 per acre for sugarcane. It is collected in the same manner as the land revenue but separately from it and a receipt form of a distinctive colour is given for it. The whole of it is credited to the Irrigation Department. The principles on which it should be calculated have never been authoritatively defined but Government have recently accepted the view that the water rate should be proportional to the increased rental value due to the supply of water. If a cultivator requires water, he applies to the Public Works Department for it, stating the crop he proposes to grow and the area for which water is wanted. An order is then passed permitting him to take water for so many acres at the rate prescribed for the crop.

5. Cesses for local purposes are calculated at one anna in the rupee on the land revenue, including occasional water rate credited to land revenue such as the rate on land irrigated by Government wells and penal rates for unauthorized irrigation, but not water rate creditable to the Irrigation Department. Where any item of land revenue is remitted, the proportionate cess is also remitted. The practice in both respects differs from that in Madras where the cess is levied on the gross demand and water rate payable, without regard to any remission which may have been granted, and where remission of land revenue does not ordinarily carry with it remission of cess.

II.—Settlement.

6. A very brief description of the development of the Bombay settlement system may enable the way in which the three distinct processes comprised in an original settlement were carried out in that province to be more clearly understood. These three processes are—

- (1) the classification of soils and the collection of the data required for the determination of the demand,
- (2) the determination of the demand, and
- (3) the introduction of the settlement.

7. In 1827, Mr. Pringle, then Assistant Collector at Poona, was placed on special duty to devise a system of survey and settlement for the Poona and surrounding districts. The system evolved by him comprised two main operations; a survey of all the cultivable lands field by field, and an assessment of every field so measured. The second of these operations was a highly complicated one. Stated briefly, Mr. Pringle's system was based on the theory that the relative capacity of different classes of soils to bear assessment is in proportion to their average net produce, meaning by this expression the surplus of the gross produce which remains after deducting the cost of cultivation. His first measures therefore were—

- (i) to divide the soils he met with into classes,
- (ii) to ascertain the average gross produce of each class,
- (iii) to discover the average cost of producing this amount, and
- (iv) to find the net produce of each class by deducting (iii) from (ii).

The result of these calculations would be to give him a scale in terms of net produce which would express the relative assessment bearing capacity of each class from the highest to the lowest, as obviously the surplus over the cost of cultivation varies with the productive capacity of the soil. The number of soil classes varied locally but was usually fixed at nine. The average gross produce of each class was determined by local enquiry from the ryots, by crop experiments, etc. The cost of cultivation was calculated in the most extraordinary detail including not only the expenses of labour, seed, bullocks, etc., but also such items as insurance against loss of cattle, fees to artificers and even the cost of propitiating the local deity at harvest time. So minute were the enquiries that some of the *kaifiats* as they were called, ran to rolls of paper 30 yards in length. The average gross produce was then converted into money at an average of prices for past years and the net produce found by deducting the cost of cultivation. This system, which was extended over the whole of the Poona and several surrounding districts, broke down, partly owing to its complexity, but mainly because the resulting assessments were too high. In 1836, therefore, Mr. Goldsmith of the Civil Service and Lieutenant Wingate of the Engineers as survey expert, were directed to commence operations anew in the Poona District. The system worked out by these officers was the basis of all subsequent operations. The essential difference between it and the Pringle system is that it worked from aggregate to detail instead of in the reverse direction. A succinct account of the procedure is given in a Joint Report by Messrs. Goldsmith and Wingate published in 1840. "The present condition of the agricultural classes, the state of particular villages, the amount of the Government realizations, the prices of produce and similar considerations compared with those of preceding years afford us the chief groundwork for determining satisfactorily what abatement or addition should be made to the existing Jumma. We also by a similar process arrive at an opinion of what the rates of the different soils should be and by applying these to the ascertained area and classification we find what amount of Jumma these

rates will produce and by examining whether this is as much in abatement or excess of the existing Jumma as our previously formed opinions had led us or think necessary, we are enabled to correct our first estimate of the appropriate amount of the Jumma and thereby finally settle our rates."

8. Started originally as a local experiment, the "Survey" on the lines laid down by Messrs. Goldsmith and Wingate had been extended from Poona to Nasik, Sholapur, Ahmednagar and the Southern Mahratta country. But no guiding principles had been laid down for the conduct of the operations and in 1847, therefore, the Bombay Government directed the three Superintendents, Messrs. Goldsmith, Wingate and Captain Davidson, to hold a conference at Poona "for the purpose of taking into consideration the best means of bringing the somewhat diversified operations of the several revenue surveys of this Presidency into conformity as far as practicable" and also "for ensuring the results of the surveys being turned to the best account and maintained in their original integrity in the future management of the districts." The result of their deliberations was the "Joint Report" which has been described as "the source of plenary inspiration for the guidance of the extended operations." The subjects with which the Report dealt may be divided into the three main heads of (a) the Unit of Assessment, (b) the Assessment of the Unit and (c) the Revenue system to be based thereupon, with special reference to the important question of tenure. With the latter we are not here concerned and it will be discussed in dealing with the Record of Rights. For the Deccan districts to which the rules laid down in the Joint Report were expressly meant to apply, the standard unit of assessment laid down was 20 acres of light dry crop soil and 4 acres of rice land. Many changes were made subsequently in the principles by which the size of the survey number as it was called were regulated. The principles laid down in the Joint Report in regard to the assessment of the unit were that the relative value of survey numbers should be found and expressed by means of classification and that the absolute rate of assessment should be fixed in accordance therewith by maximum rates settled by the system of "aggregate to detail."

9. Though there were variations in details, especially when settlements were extended to Gujarat and the Konkan, the main principles as laid down in the Joint Report were preserved in all the subsequent settlements. A general description of the system of classification can, therefore, now be given.

Lands were classified at settlement as rice land, garden land or dry land. There were three orders of dry land, Black, Red and Light. In the Black and Red orders there were seven classes, in the Light order there were only five. The Black order comprised classes 1 to 7, the Red order classes 2 to 8 and the Light order classes 6 to 10. The depth of the soil was regarded as the most important consideration. The first class comprised black soil $1\frac{3}{4}$ cubits deep; for any diminution of the depth by a quarter cubit, the soil was reduced a class. The relative value of the highest class was reckoned as 16

annas, of the second class as 14 annas and so on, down to 2 annas. Thus black soil $1\frac{1}{2}$ cubits deep would be reduced one or more classes if the surface were uneven or the soil alkaline. Its relative value, in such circumstances, might be 14, 12 or even 10 annas. Limestone nodules, sand, clay, excessive slope, and scouring by water-courses were all regarded as "faults" reducing the relative value of the class, and one, two or even three such "faults" would be assigned when the fault was exaggerated. First class black soil in a good position as regards level or sub-soil water would be raised above the 16 annas class to 18, 20 or 22 annas.

Each survey field was divided into compartments, originally of about 1 acre each, which were separately classified. The average classification of the compartments represented the classification of the field. Thus a survey field 6 acres in extent might contain one acre of first class land valued at 16 annas, one of second class valued at 14 annas, two of fourth class valued at 10 annas and 2 of fifth class valued at 8 annas. The classification of the whole field would then be obtained as follows:—

1	compartment of	16 annas	=	16
1	compartment of	14 annas	=	14
2	compartments of	10 annas	=	20
2	compartments of	8 annas	=	16
				66
6	compartments	...		66

and the valuation of the field would be 66 annas. The assessment of the field was supposed to be fixed on the arable land, areas uncultivable owing to rock or swamp (known as *pot kharab*) were therefore deducted in working out the total classification value of the whole number. These areas were not measured but were calculated by eye-estimate at the time of classification. To take another example, a field of 4 acres of which a quarter of one compartment and a half of another were uncultivable; the classification of such a field would be valued as follows:—

1	compartment of	14 annas	=	14
1	compartment of	12 annas	=	9 (quarter share deducted for <i>kharab</i>).
1	compartment of	10 annas	=	10
1	compartment of	10 annas	=	5 (half share deducted for <i>kharab</i>).
				38
4	compartments less three-fourths deducted for <i>kharab</i>		=	38

and the average valuation of the field would be 11 annas 8 pies which would be rounded off to 11 annas 6 pies.

10. At the revision settlements which began in 1868 various technical improvements were introduced, the most important of which was the revision of the soil scale. The necessity for this revision arose from the overassessment of the poor soils as compared with the richer soils at the original settlements. In most districts the change took the form of adding what were called "scale increases" to the anna classification. The classers were permitted to do their work in the

ordinary way and the necessary reclassification was made in office by making proportionate additions to the soil annas of the highest classes in accordance with scales fixed by the Superintendent. A large number of such scales were fixed by the Superintendent according to the needs of particular cases. The following will serve as an example :—

Original.	Scale increase.	
	As.	P.
16-12	2	0
12-10	1	6
10-8	1	0
8-6	0	6
6	Nil.	

This meant that a dry crop field, the classification value of which according to the soil scale was 16-12 annas would have an addition made thereto in the office of 2 annas, the practical result being an increase of from 12½ to 16½ per cent. in the assessment and so on throughout. The effect of this system was "to widen the difference between good and bad soils so that the increase of revenue under a given maximum shall fall more on the good soils than on the bad."

A further change introduced at the Revision Settlements was the introduction of the position class and subsoil water class; this meant that if a field were in a good position as regards level or sub-soil water it would receive an additional two annas or more. The position class and subsoil water class were not applied in the same tract. The former was used in the Deccan and Karnatak and the latter in the Gujarat plains. The main features of the position class system were that dry crop lands were divided into four classes in accordance with their valuation, ranging from flat low lying lands situated in the valleys and thus receiving the best drainage from the high grounds which were placed in class 1, to ridges and steep slopes retaining neither rainfall nor moisture which were placed in class 4. An anna scale of the usual type was drawn up by which additions were made to the soil annas of dry crop land in accordance with the class in which they were placed. At the time of classification a note was made by the classer as to the situation of the survey number and the necessary additions were made to the soil annas subsequently in office. This system, naturally, was peculiar to hilly country.

The chief features of the sub-soil water class system were as follows:—In every village, after an inspection of existing wells and their phenomena bearings on the question of the quality of the sub-soil water and its depth from the surface, the village lands were divided up into areas homogeneous in respect of sub-soil water supply. Thus in one village there might be four such groups:—

- (1) in which sweet water might be obtained at a depth of about 10 feet.
- (2) in which the water was brackish and its depth about 15 feet.
- (3) in which the water was again brackish but only available at 20 feet.
- (4) in which there was no sub-soil water stratum within 40 feet.

Additions were then made to the soil classification annas of the fields in the first three groups according to a "subsoil water classification" based on (a) the depth of the water from the surface, (b) the quality of the water, and (c) the soil classification annas of the field. Thus if the soil classification annas were from 12 to 16, an addition of four annas might be made if sweet water were found 10 feet from the surface, which would be reduced to two annas if the water were brackish. If the soil classification annas were from 5 to 8 and brackish water were found at a depth of from 10 to 20 feet below the surface the addition would only be one anna. This system implies level homogeneous plains.

Both at the original and revision settlements the classification further depended upon distance from the village and on the size of village. One anna might be added to the soil classification annas if a field were within a quarter of a mile of a small village and two annas if it were within a quarter of a mile of a medium sized village and so on. This system was not applied to the Konkan where the people generally live in houses situated on or near their lands or in scattered hamlets. In other districts it was only applied to dry crop lands and not to rice or garden lands; the reasons for this are not on record but were probably the smaller bulk and greater value of the crops grown on these classes of land which made the "distance factor" of less importance than in the case of dry crop. At the original settlements the distance scale was sometimes diverted from its legitimate use and made to serve the purpose of altering the normal assessments for reasons other than contemplated in the Joint Report. Thus in the Bardoli taluka of the Surat District the villages of the inferior castes, in addition to having the benefit of lower rate of assessment had distance scales applied to their fields which still further reduced their assessment relatively to those of the villages of the higher castes. At the revision settlements the special conditions which had led to the manipulation nearly all ceased to exist. The old scales were therefore abolished and new scales substituted framed on the theoretical principles.

To sum up therefore by an illustration the effect of the different scales, a dry crop field with a soil classification of 12 annas which enjoyed moderate advantage as regards subsoil water might receive an extra anna on that account and might receive an additional anna if it were also within a quarter of a mile from a small village making 14 annas in all.

11. The description given above applies to the classification of dry land. For the classification of rice lands two systems were adopted; the rupee scale system in Gujarat, the Konkan and parts of the Deccan, and the "Dharwar" system of the Southern Mahratta country which was subsequently introduced into parts of the Deccan and was adapted for use in Kanara. Under the rupee scale system, the soil and water factors were considered to have a generally equal value, as the rainfall of the tract is heavy, certain and of a uniform character; 8

annas were assigned to soil and 8 annas to water. Under both these and the original Deccan system the classification annas of each factor were added together and one maximum rate was applied to the combined annas in working out the assessment. In Gujarat, on the other hand, where the relative value of the two factors of soil and water varies far more greatly than in the southern districts, the device was adopted of having separate maximum rates and, therefore, separate assessments for soil and water, the relation between the two being expressed not in the classification but in the rates, which were varied from district to district in accordance with the changes in the relative value of the two factors.

Under the Dharwars system, the one most generally adopted both for rice and garden land, six water classes were arranged. These were—

(1) Low lands under sources with supplies lasting to the end of March or April, or capable of growing sugarcane every second or third year.

(2) Higher lands under such sources capable of growing a second rate crop of sugar cane with certainty.

(3) High and distant lands under such sources and low lands under sources with supplies lasting to the end of December or January capable of growing sugarcane only when the rains were very favourable.

(4) High or distant land under sources with supplies lasting to the end of December or January not capable of growing sugarcane but of growing a second crop.

(5) Very high or distant land under such sources and land under small tanks on which no second crop was possible. The reliability of the source was an important element in fixing its class, both as to volume of water and its annual appearance.

The average water class was worked out from the whole field in the same way as if the figures of the water class were annas. Thus if in a field the water class of one share was the third and if the other share the fourth, the calculation would be

Class.	...	Shares.	Annas.
3	...	1	3
4	...	1	4
		—	—
Total	...	2	7
		—	—

Average water class 3—6

The water and soil factors were then combined on a sliding scale which was fixed by the settlement officer separately for each group or perhaps for each village so as to produce an equitable result but were, therefore, not always adjusted quite in mathematical uniformity. An illustration will show how the combination worked in practice. If the maximum rate for a village were Rs. 9, this would only be paid by land classed as 16 annas with first class water supply. Second class soil, *i.e.*, land classed as 14 annas, with second class water would pay Rs. 6-12-0. Second class soil with fourth class water would pay Rs. 4-12-0. Fourth class soil, *i.e.*, land classed as 10 annas, with first class water would pay Rs. 7-6-0. Fourth class soil with fourth class water would pay Rs. 2-13-0.

12. It has already been stated that the Bombay Settlement System is one which works from aggregate to detail. The system of classification is merely a device for distributing the total demand determined for the area under settlement. Three operations were involved in the process of determining the assessment. These were—

(a) the division of the villages of *talukas* (townships) into groups ;

(b) The determination of a total amount for the area under settlement by an examination of the revenue history of the tract ; and

(c) The distribution of the aggregate for the whole area over the groups by means of maximum rates for the various classes of land.

The object of grouping in Bombay as elsewhere was to divide the *talukas* into homogeneous group of villages comprising those parts of the whole area, the relative conditions of which called for a variation in the "standard of assessment" in order to allow for advantages and disadvantages. The necessary variations were made by graduating the pitch of the maximum rates for the several classes of lands between group and group in accordance with the estimate of the settlement officer regarding the allowance necessary to be made in each case. But within each separate group the same maximum rates were applied to the different classes of land, difference in fertility having been already taken into account by the classification. The principles according to which villages were to be grouped were laid down very clearly in the joint report ; these were that the basis of differentiation was to be "marked and permanent distinctions" such as climate, situation and, in the background, as "in a great measure temporary," the state of husbandry. It was distinctly stated that neither caste nor the condition of the cultivators should be taken into consideration in this connection but in practice at the original settlements it was found impossible to avoid doing so, especially in Gujarat where the system of caste assessment had prevailed from time immemorial. The grouping at the original settlements was therefore generally of an essentially transitional character.

The determination of the demand was obviously the touchstone of the success of the settlement. In coming to a conclusion regarding a suitable demand the settlement officer had to examine it from two standpoints. He had to enquire into the suitability of the existing assessment to the existing conditions, whether it was too high or too low or might be considered equitable. He had also to forecast the effect of probable future changes. He had to consider how far the existing conditions were likely to be permanent before coming to his final decision. His conclusions on these points were based on a careful study of the revenue history of the tract.

The earlier settlement reports were of a somewhat vague and confused character but in the later reports this study was made in a systematised form. It comprised—

(i) A description of the general and physical features of the whole settlement area both in itself and also with relation to other neighbouring tracts, if any, previously settled.

(ii) A consideration of the general state of communications such as roads, railways, etc. and of impediments to transit such as unbridged rivers, etc.

(iii) A description of the various classes of cultivation including the facility for irrigation and also of the state of husbandry.

(iv) An account of the condition of the population with reference to caste, general prosperity, amount of agricultural stock, health, education, etc.

(v) An enquiry into the statistics of land revenue, including those of the actual demand collections and remissions for as many years as was possible, with an estimate of the incidence of the assessment.

(vi) A concomitant enquiry into the statistics of occupation and its bearing upon the question of the pressure of the assessment.

(vii) A study of prices.

(viii) A study of the statistics of leases, sales, mortgages, etc., if available.

The final operation was the distribution of the aggregate over the individual survey numbers. This was done through the medium of maximum rates fixed for the different classes of land. It should be noted that the maximum rate is not the same thing as the maximum assessment. The maximum rate is the rate applied to 16-anna land. But land may be classed, on account of various advantages, considerably above 16 annas. In the case of tank irrigated rice the classification of soil may be as high as 32 annas. If the maximum were Rs. 2, the maximum assessment would be $\text{Rs. } 2 \times \frac{32}{16} = \text{Rs. } 4$. In order to make the necessary differentiation between the groups of villages the general pitch of the maximum rate was varied between group and group, the allowance necessary being determined by the settlement officer according to his opinion of what was reasonable. The determination of the maximum rate, therefore really involved two operations "land rating" and "group rating". The latter has been sufficiently explained. As regards land rating the object of the maximum rate for the different classes of land was to provide a rate which when applied to the classification values, would produce a suitable assessment for each class in comparison with other classes. The settlement officer's decision as to the rate "depended not upon the final working out of results based on theory, but rather upon the subjective impressions of local knowledge and experience". Sufficient has perhaps been said to show the overwhelming part played by general considerations in the fixation of the demand under the Bombay Settlement system. Before passing on to describe resettlement operations, a concrete illustration of the application of the system to an individual village and to a group of villages may be given. After the settlement officer had determined with reference to the general conditions described above, of which the most important would be the existing settlement, what the village as a whole could pay, and had decided that Rs. 250 would be a suitable amount, he would then estimate what the soil could stand and decide that

Rs. 1.50 for the best of 16-anna soil and proportionately for the soil classed above or below 16 annas would be the appropriate rate. The assessment arrived at in this way might be Rs. 210. The difference between this and Rs. 250 would necessitate a revision of the estimate and the settlement officer might eventually decide on Rs. 230 which would give a rate of Rs. 1.60 on the best soil; this would be the maximum rate though not necessarily the maximum assessment. This would be the maximum rate for similar villages similarly situated and all villages with the same maximum rate would belong to the same group. But the group would contain large and small villages. First class land with no advantage or defect would pay rather more near the largest villages. It would probably be classed at 18 annas and would therefore be Rs. $1.60 \times \frac{18}{16}$ or Rs. 1.80 per acre. It would pay rather less near the smallest villages and would probably be classed at 14 annas. It would therefore pay Rs. $1.60 \times \frac{14}{16}$ or Rs. 1.40. Near a medium sized village it would pay the exact maximum rate of Rs. 1.60. First class land at some distance from a medium sized village would, however, only be classed as 14 annas and would pay Rs. 1.40 per acre, while first class land at some distance from the smallest village would be lowered to 12 annas and pay Rs. 1.20 per acre. The rate would similarly be differentiated for land with natural advantages of position or sub-soil water level.

The minuteness of differentiation which the system permitted is shown by the fact that in one small village taken at random there were no less than eight rates on dry land alone and none of the land in the village had been classed higher than 6 annas. An important adjunct to a Bombay settlement should here be mentioned, the *jantri*, which in its original form was merely a ready reckoner of assessments showing the acre rate for the different classification values according to the sanctioned maximum rates, which were worked out ready to hand in order to save the trouble of calculation separately for each survey number. The acre rates shown in the *jantri* were thus simply those which a clerk or other subordinate could have worked out for himself. Later, while the *jantri* still continued to serve the purpose of a ready reckoner, the rates shown in it were not such as could have been calculated by a clerk, but were modifications of them drawn up by the superintendent personally and embodying his ideas as to what the rates ought to be.

13. As already stated the period of revision settlements began in 1868. The original revision settlements were, in everything but name, original settlements and the whole work of survey and demarcation was done afresh. As time went on and the districts which fell in for revision were those in which the later and improved methods had been brought into operation, the field work at revision settlement was first reduced to a test of the old measurement and classification and finally abolished altogether and the original work continued in its entirety. When this point had been reached the only operation to be performed by the settlement officer was that of fixing the assessment rates. The proviso to section 100 of the Land Revenue Code, which was substituted for the original clause by Bombay Act IV of 1866, lays down that when

a general classification of the soil of any area has been approved by the Governor in Council as final, no such classification shall be again made with a view to the revision of the assessment of such area. In 1892, the separate "Survey" establishment, *i.e.* the separate settlement department, was abolished and the work of settlement handed over to the revenue department. The work of resettlement is now usually undertaken, ordinarily for a *taluka* at a time, by an Assistant Collector, who in most cases the Subdivisional Officer. He is given the assistance of one clerk only for the collection of the statistical information he requires. He has nothing to do with classification. If he comes to the conclusion that, over a whole tract, some error or misapprehension has occurred, he submits a report and Government may authorize reclassification directed to a particular point for that particular tract, but merely with a view to a lowering, not to a raising, of the classification. A few instances of this kind have occurred. For example, if the classers assumed that the water of a particular tract was not brackish and lasted on to the hot weather and it was subsequently established that the water was brackish and failed in January a good case would be made for reclassification. Riverine and tidal action might also justify reclassification. The only way in which a settlement officer can now revise the relative assessment of two villages is by changing their grouping. The new assessment on the group must not exceed the former assessment by more than 33 per cent. By taking two villages from a high group, the maximum rate for which is Rs. 3'4, and including them with eight villages of a low group, the maximum rate for which is Rs. 2'8, he can enhance the revenue on the new group as a whole by 33 per cent. and by leaving the two Rs. 3'4 villages unchanged, he can raise the demand on the other villages by more than 33 per cent. without raising the revenue for the whole group by more than that figure. *Vice versa* by transferring several villages from a lower to a higher group, he might prevent himself from raising the demand on the main block of the group by so much as 33 per cent.

14. In framing his proposals, the settlement officer relies on the past revenue history of the tract; for example; he pays special attention to the question whether the revenue has been collected without difficulty or not. He also pays special attention to rental values.

The proposed rates are published with a summary of the reasons on which they are based. A period of two months is allowed for objections. These are freely submitted, but tend to be stereotyped in form, more especially as they are usually drawn up by a vakil. They seldom touch on the question of rental values which is one of the most important considerations in determining the enhancements. The new rates are then introduced by the Collector. The new *Akharband* (classified area statement) is prepared in the office of the Superintendent of Land Records for survey fields and subdivisions. The new assessment on each field or subdivision is intimated to the village accountant who prepares the individual *Khatas* accordingly. These *khatas* are supplied to the cultivator on payment of one anna and show every item of the fixed assessment.

III.—The Collection of Revenue.

15. The revenue on ryotwari lands is payable in instalments, usually two, the date fixed for which varies in different districts. The land revenue demand of each year on each individual survey number ordinarily remains unchanged for the period of settlement unless there are suspensions or remissions. The village accountant makes out annually an account (*khata*) showing the assessment due from each ryot for the year, including arrears and fluctuating revenue if any such as rents and fines for unauthorized occupation, cultivation in village sites, payments for wood or fruit collected from communal lands, and excluding remission and suspensions. The ryot is verbally informed of the demand and on payment of his dues obtains a receipt for the amount on which he is informed that he is entitled to see the *khata* for the year, but he receives no statement showing the details of the annual demand. This receipt form has recently been substituted for the receipt book formerly in use.

16. If the revenue is not paid punctually a maximum penalty not exceeding one quarter of the amount overdue may be imposed. The methods by which land revenue are recovered are:—

The recovery of arrears.

- (i) the service of a written notice of demand ;
- (ii) the forfeiture of the occupancy right on which the arrear is due ;
- (iii) the distraint and sale of moveable property ;
- (iv) the sale of immoveable property ;
- (v) the arrest and imprisonment of the defaulter.

Nothing is said as to the order in which these processes are to be applied nor is it said that the one is resorted to only in case of failure of another. It is left to the Collector to adopt any process or more than one at his discretion. If forfeiture is the method adopted, the Collector may dispose of the holding by sale or otherwise as, for example, by the grant of the land to a pauper cultivator. Ordinarily notice of demand is issued by the Tahsildar (Township Officer) ten days after the arrear has accrued. If a distress is made against moveable property, such articles as household utensils, grinding stones, cots or cradles and ploughing cattle and implements of husbandry are exempted as if the provisions of the Code of Civil Procedure applied. If a defaulter is arrested, he may be detained in custody for ten days in the office of the Collector or Mamlatdar and on the expiry of the ten days, if the arrears are still unpaid he may be imprisoned in the civil jail. The total period of detention may not exceed six months when the arrears, penalty, costs and subsistence money exceed fifty rupees, and six weeks when they are less than this amount. When moveable property is brought to sale, written notice of the time and place must be published at the Collector's and Mamlatdar's Office and at a public building in the village as well as at the defaulter's house, and at least 30 days must elapse between the publication and the auction sale. The purchaser must deposit at once 25 per cent, of his bid and the balance within 15 days from the date of sale. The Collector may on application

set aside the sale within 30 days if he considers that material irregularity, mistake or fraud in publishing or conducting the sale has wrought substantial injury to the applicant. He may also set aside the sale for any reason which he thinks sufficient, whether on application or his own motion, recording his reasons in writing. Otherwise the sale is confirmed after 30 days.

17. There is no system of darkhastā or applications to take up unoccupied lands as in Madras. All unoccupied land is sold by auction. A partial exception to this rule is provided when a subdivision of a survey number is relinquished. It is first offered to the holders of the remaining subdivisions of the same survey number. If they refuse it, it is then sold by auction. When a subdivision of a survey number remains unoccupied and unassigned, the holders of the remaining subdivisions of the same survey number are responsible for the revenue on it, but, in practice this never occurs.

18. A ryot may continue to hold the fields he has for as long as he likes, but he can relinquish his entire holding or any entire survey number or a recognized share in a survey number provided he does so by giving written notice to the Mamlatdar. If the remission is absolute, notice must be given before the 31st March or other date fixed by the Government and takes effect after the close of the current year. The occupant remains liable for the revenue for the remainder of the year.

IV.—Land Records.

19. The definition of occupant in the first Bombay Survey and Settlement Act, I of 1865, was "the person whose name is entered authorizedly in the survey paper or other public accounts, as responsible to Government for payment of the assessment due upon any field or recognized share of a field." He was not, however, in virtue of this position, by any means necessarily the sole holder of the survey number or share, since any co-owners of the occupancy could make application and have their names entered as joint occupants. At the same time by the terms of the law the occupant proper was still held responsible for the assessment of the whole number, the joint occupants merely having the right to have their names entered and their shares shown in fractional parts of a rupee, being responsible for their share of the assessment to the occupant. But, while recognizing the fact of subdivision, the Act refused to allow the original survey number or recognized shares to be divided into smaller numbers or shares even though this might be absolutely necessary to carry out a partition order passed by a competent court. In the end, however, it was found necessary to amend the law and by Act IV of 1868 the subdivision of survey numbers and recognized shares for this purpose, subject only to the limit of a minimum of area was permitted. Further, permission was granted to survey officers at revision survey to subdivide any

survey number or share, subject to the limitations of area imposed. "The effect of these provisions was to break down the corner stone of the Joint Report System, *viz.* the indivisibility of the original survey numbers." The permission thus granted was fully taken advantage of especially in the separation of clubbed occupancies. Those persons whose names appeared in the original records merely as "joint occupants", subordinate to a principal occupant, now had their lands separately measured and made either into survey numbers or if below the minimum area for a standard survey number into *pot* (recognized share) numbers. In 1894 the separation of clubbed occupancies was put a stop to on the score of expense and henceforth subdivision was not done except on application by and at the cost of the ryots.

20. Previous to this however, the law of occupancy had been still further revised by the enactment of the Land Revenue Code (Act X of 1879), with which was incorporated, with modifications, the Survey Act of 1865. In this the two classes of rights were separated under the heads of "occupancy" and registered occupancy. An "occupant" was defined as "a holder of unalienated land, or where there are more holders than one, the holder having the highest right in respect of such land or where such highest right rests equally in more holders than one, anyone of such holders" while "registered occupant" was defined as "the sole occupant or the eldest or principal of several joint occupants whose name is authorizedly entered in the Government records as holding unalienated land whether in person or by his co-occupant, tenant, agent, servant or other legal representative." Under the provisions of the Act, the registered occupant was directly responsible for the payment of the assessment, the occupant was only responsible in his default; the occupant could not relinquish a number or effect a transfer, while an application to use lands for non-agricultural purposes had to pass through the registered occupant.

This double system of occupancy lasted for over 25 years. It saved Government from the trouble of minute enquiries into land possession which tended to become more and more complicated with the increasing subdivision of land. The system of paying the assessment through the registered occupant further relieved Government from the necessity of keeping up to date an enormous number of small accounts. It worked well enough so long as there were no suspensions and remissions but it broke down hopelessly in the famine years which began in 1899. The revenue assessed on the "registered occupant" had in practice been distributed over the actual occupants by the village accountant according to his private knowledge of the circumstances. When the system of suspensions and remissions was introduced, the accounts soon became a tangled mess. In a poor year half the revenue might be suspended. In the following year, with a ten-anna crop, the collection of half the suspended revenue might be ordered. "The result was the hopeless confusion of the village accounts. "The system collapsed under the sheer weight of arithmetic." Further it was defective in that it failed to provide any material for the study of agrarian conditions. No

information was available regarding the actual state of agricultural economy, the size of holdings, the area rented or mortgaged, what proportion of land was held by agriculturists, or by moneylenders. The Famine Commission commented strongly on these defects and held that an enquiry into the conditions of landholders by the preparation of the Record of Rights was essential to proper administration. Accordingly in 1901 two officers were sent to the Punjab to study the system in that Province and the result was the introduction of a Record of Rights in Bombay by Act IV of 1903.

21. For reasons which it is not necessary to describe in detail it was decided that the Record of Rights as brought into operation by Act IV of 1903 should be purely a statistical record, the *Khatedar* or registered occupant, being still retained for revenue purposes. Provision was made for an enquiry into and registration of title separately in the case of *Khatedars* (including all those having a possessory title to land) and tenants. In the case of survey numbers held by several occupants, the area in the possession of each was entered approximately without measurement. The Act also made provision for keeping the record up to date by means of a mutation register, in which all changes were to be entered as they occurred, the duty of reporting all changes being laid on landholders under penalty for failure to do so. These mutations were to be incorporated into the record after due notification, the whole record being rewritten and brought up to date at such intervals as might be necessary.

The introduction of the record of rights in its present form is due to Mr. (now Sir George) Curtis who held that unless and until the record of rights became also a record of liability it would never be anything more than a "statistical incubus; a useless piece of work to be got through as soon as possible and, when finished to be put away and forgotten with all possible speed." His views prevailed and the changes they involved were incorporated in the Land Revenue Code by Act IV of 1913. The then "registered occupant" was abolished and "occupancy" was made to depend upon possession by the following definitions:—"Occupant," means a holder in actual possession of unalienated land other than a tenant; provided that where the holder in actual possession is a tenant, the landlord or superior landlord as the case may be, shall be deemed to be the occupant. "To occupy land" means to possess or to take possession of land. "Occupation" means possession. The primary liability for the payment of the land revenue was diverted from the original "registered occupant" and laid upon the new possessory occupant. These two reforms necessitated a third, the recognition of a new unit of holding. By the old law, the only subdivision of the survey number recognised had been the "recognized share," a term including the "plot number." This, however, was a survey unit and under the old system could only come into the revenue accounts by way of the survey records after actual survey and map correction. Such an area could not serve as the new unit of holding which was to be based upon possession and not upon entry in the survey records. Hence it was necessary to create a new type of unit, the "subdivision" which was defined as follows:—"subdivision of a number" means

a portion of a survey number of which the area and assessment are separately entered in the land records under an indicative number subordinate to that of the survey number of which it is a portion. The term "recognized share of a survey number" was abolished. The splitting up of the survey number into such subdivisions was, at the same time authorized by section 117B. These subdivisions became necessarily the unit of relinquishment in place of the survey number or recognised share of the old law. This change was only possible upon measurement and mapping of all parcels of land separately 'held.' This operation has been effected by Mr. F. G. H. Anderson's introduction of the Plane Table survey method with which over ten million plots have been mapped since 1913.

The record of rights was not introduced at resettlements but under the supervision of the Collector of the District. Experiments were made in a few *talukas*, and after the difficulties there revealed had been satisfactorily met, it was introduced *taluka by taluka* in every district.

The Register of Holdings is now the Record of Rights. It contains columns showing the serial number, the survey number, the area, the ordinary or special assessment or quit rent on *inam* lands (lands held free or on favourable tenure), the subdivision number, the area, assessment, assessment on *inam* lands, the name of the person in actual enjoyment, the nature and origin of his title, particulars of other rights or encumbrances with the names of the rightholder or encumbrancer, reference to the mutation register and remarks. If land be mortgaged with possession, the name of the mortgagee will appear in the column showing the person in possession, and the name of the mortgagor will appear in the column of "other rights or encumbrances." Similarly, if land be mortgaged without possession, the name of the mortgagor will be shown in the column for person in possession and the name of the mortgagee will be shown in the column for encumbrances. Mutations are recorded in a separate register. At present it is the practice to re-write the main register every five years but a method has been devised by Mr. R. Maxwell, I.C.S., for making the record continuous and permanent; this is now under the consideration of Government. Under this method there will be a permanent and continuous register in which every change of right as it occurs will be entered in sequence, detailing the parcels of land it affects, and a brief 'index' periodically revised and re-written, showing for each parcel of land in serial order the last and former transactions affecting it. The village accountant is required to ascertain all changes in possession. These should be reported to him and persons who fail to report within three months are liable to a penalty imposed on summary enquiry in the village by the Mamladar which may not exceed 25 rupees. Mutations effected by registered instruments are reported by the Sub-Registrar to the village accountant and as civil decrees affecting land are executed by the Collector they are thus brought to the notice of the village accountant. No civil or other suit relating to land may be instituted unless an extract from the record is attached to the plaint and any change found necessary by the Court is certified to the Collector. If the village accountant notices an unreported

transfer, he is expected to enter it in the register and publish the fact that he has done so on the village notice board. All entries in the mutation register are supposed to be notified on the village notice board but this provision of law is carried out strictly only in some villages and in others it is not carried out at all. The procedure it involves appears too laborious for exact compliance and a simplified procedure has been suggested under which the accountant would publish only a schedule of "persons whose rights have been lost or reduced by mutations recorded" since a certain date with a notice that persons interested can see the details in the mutation register. All mutations by succession are first recorded in a separate register for successions and when approved are transferred to the mutation register. Similarly disputed cases are recorded in a register of disputes to be disposed of by superior officers. No entry in the mutation register can be transferred to the record of rights until it has been certified (attested) by the Mamlatdar's first *karkun* (head clerk) or some higher officer.

It is important to notice that the record is a record of possession. Any complicated question of title would be referred to the civil courts. If a person registered in the record as in possession were to sell his land by registered document but the vendor remained in possession and both the parties admitted to the village accountant that, by an oral agreement, the transaction was really a mortgage, the vendor would still remain as occupant and a note would be made in the appropriate column of the registered deed of sale and as to the admission by both parties as to its being in reality a mortgage.

22. As in Madras, there are no statistics to show the proportion of land held by agriculturists, and non-agriculturists, residents and non-residents, or to show the area mortgaged at any given time or the area alienated by sale or mortgage or the area rented or the pitch of rents. No one has yet produced a working definition of 'agriculturist,' and although statistics of the areas sold can be obtained, in the absence of such a definition, they have been discarded as valueless. Information on these points is available in the Record of Rights and the Mutation Register. In Part II of the latter (Village Form 12) the village accountant enters details regarding tenancies and cropped areas and the register is preserved for thirty years. The information in this register, as well as that in the Record of Rights and the Mutation Register, is said to be of great use in ascertaining the features of agricultural economy. The Tenancy Register shows all leases and rents, in cash, kind or otherwise, and the Mutation Register shows all sales, the settlement officer examines the statistics in detail and excludes from them those which represent abnormal transactions and so gets a trustworthy and probable sale value and rental value (in terms of multiples of the assessment) which is of great assistance to him in indicating a suitable assessment. The information available in the registers has, however, to be searched for as it is not compiled. The settlement officer has this as his chief task: all else is ancillary. If he orally checks only 20 transactions a day for 4 months, that is 2,000 authentic figures, which would give a very fair basis for valuation. Though he has only one clerk, village and *Taluka* officers and the Land Records staff are also called upon for contribu-

V.—Survey and Miscellaneous.

23. The original survey number in Bombay was an artificial unit constituted by dividing village lands into areas of reasonable size based on some fixed principles. This principle as laid down in the Joint Report was that the unit should be the area that could be cultivated by a pair of bullocks, as farming could not be prosecuted at all with a less number than this. As already mentioned the standard unit in the Deccan varied from 20 acres of light dry crop soil to 4 acres of rice land. While the majority of the original survey numbers represented individual holdings or property units, many of them contained several small holdings lumped together. The subsequent history of the "survey number" has been given in connection with the Record of Rights and need not be repeated here. As to the method of survey, the measurement of the survey number at the original settlements was carried out by chain and cross staff and, except for improvements in the style and finish of the work done, there was no change in method from start to finish. Notable advances were however made in the methods of measuring whole villages and in the construction of village, *taluka* and district maps. The chief improvement in the village map was effected by the introduction of a system of measurement of the village-tracts upon main "base lines" run through the village from one boundary to another with subsidiary base lines branching off therefrom. By setting up such lines with the theodolite and plotting the survey numbers through which they passed, a skeleton map was formed into which the remaining numbers could be fitted. In this way the accuracy of the village map was much increased and it became a fairly correct topographical record. Until 1864, however, no attempt was made to construct an accurate *taluka* or district map; in that year the system of traverse survey of village boundaries by the theodolite was introduced. This enabled a highly accurate *taluka* map to be constructed by fitting together the traverses of individual villages. Later the topographical value of the maps was greatly enhanced by connecting them by measurement with the stations of the great trigonometrical survey. At the earlier revision settlements, it was necessary to make an entirely new survey of the whole settlement area. In all tracts however the survey of which was carried out subsequent to the introduction of the Joint Report system, a test showed that the original work had been done so accurately that no general re-survey was necessary. The work was conducted on the system of "partial re-measurement" by which fields not needing re-measurement for particular reasons were compared with the village map and only measured again if the boundaries on the field were found not to agree with those delineated in the map.

The recognition of the subdivision of a survey number as the unit of holding has necessitated the mapping and measurement of all subdivisions; Section 135 of the Land Revenue Code, Amendment Act IV of 1913 made provision for the recovery of the cost of measurement from the occupants. The survey of subdivisions is now being carried out on the plane table system. A base line of, say, 5 chains is laid down along any level ground free from obstruction.

within or without the survey field. Flags are planted to mark the property limits or periphery of the subdivisions and these are sighted by rays drawn on the plane table map by the sighting rule from each end of the base line on the mapping paper which are centred over the corresponding ends of the base line, and the map base line is kept truly aligned along the ground base line. Thus the intersection of a pair of rays exactly fixes the position of each point in the periphery. The measurements are not recorded as no measurements are made or required except for the base. There is now no minimum limit for subdivisions. Until recently the law required that survey numbers should be kept permanently distinct but the amalgamation of adjacent subdivisions of different survey numbers is now permissible, if they are owned by the same person. Hitherto it has been regarded as essential to maintain every field demarcation mark, but in consequence of the adoption of the plane table system of survey, it is proposed to reduce the number of survey marks to a few pivotal pillars in villages where these have been established at a new survey. In such villages, the numerous marks set up at the chain and cross staff survey will be replaced by marks at field corners only: with the aid of the plane table maps of the subdivisions of survey numbers the smallest bends and curves of fields can be identified or restored. The cultivators will be at liberty to remove the remaining survey marks if they choose.

The village map, which may be in two or even three sheets for a large village, shows the whole survey numbers but not subdivisions. The map is always printed, the number of copies struck off depending on the size of the village and the probable demand. The usual number is from 10 to 15. The map printing is done by the Photographic office at Poona, which is under an expert recruited from England; the work of this office is under the general control of the Commissioner of Settlements. In addition to the village map, field atlases are prepared in which the subdivisions of survey numbers are shown on a much larger scale. Sometimes only one survey number is given to a page or sheet; sometimes a block of survey numbers is shown on each page. The main difference between the Field Atlas and the Field Measurement Book of Madras is that the latter gives measurements. The field atlas is prepared by hand. Two copies are prepared one of which is kept by the village accountant and the other in reserve.

24. Bombay has no Board of Revenue or Financial Commissioner and there is thus no revenue authority for the Revenue organization. whole Province. There are four Divisional Commissioners (including the Commissioner in Sind). Below the Collectors are Assistant and Deputy Collectors in charge of subdivisions; these are stable administrative units though the officers in charge of them do not reside within the limits of their jurisdiction but at the district headquarters. The subdivision consists of one or more *talukas* (townships) in charge of a Mamlatdar (the tahsildar of other parts of India). The Mamlatdar occasionally has an Assistant or Deputy known as a Mahalkari. Subordinate to the Mamlatdar as far as their revenue work is concerned, and the District Inspector of Land Records so far as their land records work is concerned, are the Circle Inspectors of whom there are two to four to a taluka. These

inspectors have about 40 villages each. The principal village officers are the headmen and the accountant. When the accountants are stipendiary they are known as talatis, when they are hereditary and receive their remuneration in the form of land held on *watan* right, they are known as *kulkarnis*. The talati until recently received Rs. 14 to Rs. 24. Their pay has recently been raised to Rs. 20 to Rs. 30 but they were still unsatisfied and many of them struck unsuccessfully for a minimum pay of Rs. 30, the minimum for clerks in taluk offices. The *kulkarni* right is often held jointly, in which case the rightholders hold office in turn for periods of five years. This is often reduced by illness, resignations or misconduct and in any case the shortness of the period renders it impossible to train them as surveyors. Efforts are being made to bring the *watan* system to an end by commutating the *watan* right.

The Commissioner of Settlements is in charge of Settlement, Land Records and Registration. Subordinate to him on the settlement side are usually five or six settlement officers. Their reports are noted on by the Collector and go from the Commissioner of Settlements to Government through the Divisional Commissioner. On the Land Records side, the officers immediately subordinate to the Settlement Commissioner are the four Superintendents of Land Records, one to each Commissioner's Division. Of these usually two are Indian Civil Service officers and the others are recruited from the Deputy Collector's cadre. In each district there is a District Inspector of Land Records, an officer of Mamlatdar's grade who is subordinate to the Collector. Under him is a survey staff comprising of a head surveyor on Rs. 70 to Rs. 90 and measuring circle inspectors on Rs. 35—80. It is by this staff that the mapping and measurement of subdivisions is being carried out. On the Land Records side, therefore, the Commissioner of Settlements and Land Records is an inspecting and advising officer.

THE LAND REVENUE SYSTEM OF THE CENTRAL PROVINCES.

(This Note does not apply to Berar unless expressly stated.)

1.—*The Basis, Standard and Principles of Assessment.*

1. In the Central Provinces, except for a few ryotwari villages in which Government deals directly with individual cultivators, the system of land revenue is zamindari; Government deals ordinarily not with the individual cultivator, but with the holder of a property cultivated by tenants. He may be a zamindar, holding a large estate, but is, typically, a man known as a malguzar, holding or owning a share in one or more properties (mahals) of some 500 to 1,000 acres each. The mahal and the village are generally in effect identical; one and the same unit is a village in its administrative aspect and a mahal for the purpose of assessing land revenue. Single villages are, however, sometimes "perfectly partitioned" at settlement into two or more mahals.

2. The conditions of occupancy in the Central Provinces are so distinctive and complex that a brief account of them at this stage appears necessary for a clear understanding of the revenue system. It would seem that a malguzar was originally a collector of revenue, but the British Government converted him into a landlord responsible for the land revenue of the village. A village usually covers 500 to 1,000 acres, though villages of 2,000 acres and more are not uncommon.

For the most part a village is cultivated by the malguzar's tenants. Of these there are three classes, absolute occupancy, occupancy, and tenants at will called "sub-tenants." Absolute occupancy right is heritable and transferable subject to pre-emption by the malguzar. Occupancy right is heritable within certain limits and can be transferred to certain heirs. Transfer to others requires the malguzar's consent and if made without such consent is voidable. It can also be annulled through the Deputy Commissioner on application by the heirs of the transferring tenant. If an occupancy tenant wishes to dispose of his right to an outsider, he has therefore not only to pay consent money to his malguzar but also to secure the acquiescence of his heirs, if any. Occupancy tenancies may not be mortgaged, but sub-letting for a year is permissible.

Absolute occupancy and occupancy tenants cannot be evicted so long as they pay rent and do not use their land for non-agricultural purposes. The rents of absolute occupancy tenants are fixed by the settlement officer and can only be enhanced during the currency of the settlement in very exceptional circumstances. The rents of occupancy tenants are also fixed by the settlement officer but may be enhanced at

intervals of not less than ten years during the currency of the settlement, either by agreement with the landlord, or by a revenue officer on an application by the landlord, showing that the rent fixed at settlement was less than the full rent assessable, or that, since settlement, there has been a rise in prices, or a permanent increase in the total area under cultivation within the holding. Enhancement of occupancy rents between settlements is now exceptional.

Land cultivated by a malguzar himself is called his home farm. Home farm is of two kinds, "sir" and "khudkasht." Continuous self cultivation for six years entitles home farm to be called "sir." This may be let to tenants at will and hence, to avoid excessive creation of such tenants, the area of "sir" permissible is limited to 25 per cent. of the occupied area of the village. Khudkasht cannot be leased, even for one year, without the lessee acquiring occupancy right in it. Sir land is highly valued as it gives a chance of rack renting. The typical village contains both sir and khudkasht.

Although the malguzar is the proprietor of the village there may be independent plot proprietors in it who are separately assessed to land revenue and hold, not from the malguzar but from Government. These are known as malik-makbuzas. Their revenue is fixed by the settlement officer at the same time as he fixes the rents to be paid by the malguzar's tenants. The malguzar is responsible for its collection and for its credit to Government except for the drawback of 10 to 20 per cent. which he retains as remuneration. He may recover arrears of malik-makbuza revenue either by a civil suit or through the Deputy Commissioner under section 157 of the Central Provinces Land Revenue Act. In practice he resorts freely to either alternative.

3. The revenue is based on the assets of the mahal. The "gross assets" include the payments of plot-proprietors; the "net" or "malguzari assets" do not. The malguzari assets consist of (a) the rents of tenants (not sub-tenants), (b) the rental value of the home farm and (c) *siwai*, i.e. forest and miscellaneous income. In typical villages the "assets" consist chiefly of "rent"; but both terms of this statement have a purely technical significance and unless carefully interpreted are apt to prove misleading.

The rents *actually paid as such* are customary and rarely have any close relation with the economic rent, while there is a general and increasing tendency on the part of malguzars to leave them at the same *nominal* figure from one settlement to the next, and to take advantage of the rise in land values by exacting heavy premium on new leases of surrendered holdings or the leasing of new land. Thus the revenue, if based on rents, actually paid, would tend to remain stationary. It is therefore necessary for the settlement officer to fix rents, and this is one prime operation of settlement. The rent resembles a ryotwari assessment fixed for a period of years by the settlement officer.

Even the rents fixed by the settlement officer bear no systematic relation to the economic rent. It is the accepted policy and ultimate aim of rent fixation that rental disparities based on custom shall be abolished and rents fixed solely with reference to economic considerations; but it is equally an unquestioned tradition that this must be accomplished gradually. Although a time is contemplated when the

rents actually paid shall be in some degree proportional to competitive economic rents, the prospect is so remote that no standard has yet been laid down, and economic rent grows so rapidly that settlement rents always tend to lag behind still further. General conditions such as the rise of prices and the pitch of those rents which have been determined in part by competition, indicate the degree of enhancement suitable; but the main task of the settlement officer is to fix a new rent for every holding, bearing in mind, not only such general considerations, but also the existing pressure of rent and other individual circumstances particular to that holding.

When the settlement officer fixes the rents to be paid by tenants he also fixes on a similar scale the rental valuation of the home farm and of land held free of rent by village servants in lieu of pay, and estimates the miscellaneous income (siwai) from fisheries, water dues, fruit trees, grazing and timber rights, riparian dues, etc.

The "Malguzari" or "Net" Assets thus comprise:—

- (a) rents fixed by the settlement officer to be paid by tenants;
- (b) rental value of land cultivated as the home farm by or on behalf of the malguzar, or rent free by village servants.
- (c) the miscellaneous income (siwai) from fisheries, water dues, fruit trees, grazing and timber rights, house sites, etc.

Of the Assets as thus calculated 50 per cent. represents the normal proportion to be taken as land revenue; in practice the proportion may exceed half, or, for good reason, be less than half. But if the fraction taken at the last settlement was less than half, it is never raised above one-half.

The revenue from plot proprietors is calculated as if they held from Government at the same rate as prevails among the tenants of the estate.

Thus, so far as rents are concerned, the revenue is based, not on the net assets, the rent which under competitive economic conditions could be paid; nor on the actual assets, the rent which actually is paid; but on the rent which the settlement officer, having regard to general and particular circumstances, considers a reasonable enhancement on the rent already paid, and therefore fixes as the rent which shall be paid.

4. The bulk of the revenue assessment is fixed. In malguzari villages extensions are not assessed between settlements. In ryotwari villages the revenue is fixed on the survey numbers, but fluctuates according to the survey numbers under occupation. Water rate for water from Government irrigation sources varies with the area for which water is supplied. Apart from this and a few cases of shifting cultivation in forests, the only fluctuating ryotwari revenue is that assessed on impermanent alluvium in ryotwari areas, such as temporary patches of melon cultivation; shifting alluvial cultivation of this kind is of little importance in malguzari villages as regards assessment because it is reckoned among the miscellaneous assets (siwai).

5. The rent or rental valuation is assessed as a lump sum per holding, which is calculated with reference to acre rates framed for the different classes and qualities of soil. Unculturable land is excluded in calculating the rental

value, similarly an allowance is made for such fallow as may be incidental to good husbandry, considering the class of soil. But, if good soil is left fallow, no allowance is made merely on the ground that it has been left uncultivated for a long period; formerly it was the practice to exempt such land as "old fallow" but this is now regarded as a premium on laziness and, indirectly, a tax on industry.

6. The necessity for temporarily deferring the full enhancement of revenue at re-settlement is partly obviated in the Central Provinces by the attention paid to the current demand in framing the new assessment; but, partly for the same reason, the provisions relating to this point are rather complicated. Deferred enhancements may be employed when the *net* enhancement, that is, the gross revenue enhancement minus the rent enhancement, exceeds 33 per cent. of the old revenue. A net revenue enhancement not exceeding 33 per cent. should be taken at once, the balance up to 66 per cent. after five years, and anything beyond 66 per cent. after ten years. By recent legislation it has become permissible similarly to defer the enhancement of rent.

7. Private improvements by embankments or irrigation works are exempted at the next following settlement from enhancement on account of the improvement, provided as regards embankment that the work has cost Rs. 50 in all and not less than Rs. 15 per acre; minor improvements are dealt with by classification. Allowances may also be made for improvements, such as drinking wells, intended to promote rural amenities rather than to yield profit. The instructions prescribe that the rules should be liberally interpreted, and for large works which cost not less than Rs. 5,000 special terms may be applied.

8. Expenditure by Government on irrigation is recouped in two ways, by a rate for the use of water, and by the enhancement of revenue which is justified by the increased stability of assets resulting from the construction of an irrigation work.

For each work a schedule of water rates per acre for different crops is prepared by the Executive Engineer in consultation with the Deputy Commissioner, and notified after consideration by Government. The rates are not fixed with mathematically accurate reference to the increase in production resulting from the use of water, but are intended to encourage people to use water; the rates should be as remunerative as possible without discouraging the spread of irrigation. The rate varies with the crop, but for rice the water may either be taken on an annual agreement before cultivation, or on demand, as water is required, at a considerably higher rate. By a recent innovation villages may enter into a long term agreement by which they undertake, for a period, usually of ten years, to pay a water rate on the whole cropped dry rice area within their village which the work commands. The long term agreement is only for rice. If a man were to grow cane or other crops in his rice area he would be charged separately for it but such a case has never been known. Panchayats or Village Committees usually under the mukaddam (headman) as sir-panch have been appointed to assist in the assessment and collection of irrigation dues, and a Canal Deputy Collector has been appointed as

revenue assistant to the Executive Engineer and "liaison officer" between the Irrigation Department and the people and revenue authorities.

The improvement of land by Government irrigation is considered by the settlement officer in fixing rents. For improved land he can fix a higher rent than otherwise would have been possible; all the land has been rendered secure, and some, prior to irrigation, would have been uncultivable. The settlement officer estimates this so-called indirect increase of revenue due to the improvement and for statistical purposes this revenue is placed to the credit of the Irrigation Department, but in the provincial accounts it appears as land revenue from irrigation. In ryotwari villages the practice is similar, but land newly brought under cultivation is immediately assessed to revenue and it is unnecessary therefore to delay until settlement the credit of the revenue as due to irrigation.

9. Local Cesses are calculated at $5\frac{1}{2}$ per cent. on the revenue; formerly they comprised a charge of 3 per cent. for roads, 2 per cent. for schools and half per cent. for the Post Office and there was an additional rate of 6 per cent. for the pay of patwaris, but now this cess has been abolished and the remainder have been amalgamated to form one general local fund.

II.—Settlement.

10. A settlement roster is maintained showing the routine order of districts for re-settlement. Two years before operations are due to begin the Settlement Commissioner reports whether there are grounds to extend the existing settlement. Unless sufficient grounds to the contrary exist arrangements are made for re-settlement.

The operations of settlement in the Central Provinces, as elsewhere, fall under three heads; the collection of data, the approximate determination or forecast of the revised demand, and its distribution. The material is examined, a forecast is framed, the general lines and limits of assessment are laid down, but the whole process of distribution is dominated, and the demand itself in no small degree determined, by the minute attention bestowed on the rent-paying capacity of each cultivator. This is the distinctive character of settlement procedure in the Central Provinces; within the general limits indicated by the group, the particular circumstances of each village are considered, and within the general village limits the circumstances of each cultivator, thus gradually building up the aggregate demand. It is perhaps a natural corollary of this practice that more than elsewhere the operations are broken up into separate stages and closely scrutinized. Hitherto, an important preliminary of settlement has been an extensive revision of the survey, but with the survey operations the settlement officer has no immediate concern. The first stage is the preparation of the Forecast Report. For about six months the settlement officer is studying the district, arranging his plan of operations and supervising the compilation of statistics. He summarises his results in a Forecast

Report containing his proposals for the conduct of the settlement and his estimate of the financial results. The report is published for unofficial criticism and submitted for orders. As it is submitted about June there is little for the settlement officer to do until the next field season begins in October or November, and he may be temporarily employed on other duty, for example, as an officiating Deputy Commissioner.

In the second stage, after receipt of orders on his forecast, the settlement officer works out his detailed proposals for the fixation of rents by holdings and villages. This corresponds to the stage of distribution in other systems; but, as just remarked, in the Central Provinces there is no distribution of an aggregate demand. The analysis conducted in the forecast shows that in a certain tahsil an enhancement of, say, 30 or 40 per cent. would be justified; this estimate is framed on general considerations. For any single group of villages within the tahsil an enhancement of 30 per cent. may be expedient, for another 35 and for another 45; for any single village an enhancement of 25 per cent. or 50 per cent. may be suitable; for any individual holding an enhancement of 10 per cent. or 100 per cent. may be required. In many villages no rental enhancement at all is imposed as rents are already high enough. The forecast only gives wide limits and the general line; in the second stage the forecast is put aside and the settlement officer works from detail to aggregate. The principal operations of the second stage are the attestation of the annual record, and the fixing of individual rents. Attestation is the basis of the record as a legal document but does not bear on the settlement of the revenue. As regards this, the settlement officer submits for approval proposals for the formation of groups, for classification of the soils, and for the relative valuation of his soil classes. On these points he obtains the orders of the Settlement Commissioner as he proceeds. Then, group by group, he classifies the soil and, by applying the soil unit system described below, he gauges the pressure of rent and proceeds to fix new rents. As he works out his proposals for each group he submits them for orders.

On receipt of orders he announces the assessments; announcement is the last stage of field work. But office work remains. As the settlement officer completes each tahsil he furnishes a statement of the financial effect and at the end of the settlement, when all the rents have been announced and all the tahsil figures submitted, he compiles an elaborate report explaining and justifying his settlement.

11. The Forecast Party comprises the settlement officer—
The settlement estab- designate with four clerks. The strength of a
lishment. Settlement Party is tabulated below:—

One settlement officer, normally from the Commission.

Five assistant settlement officers, of whom one is usually of the Provincial Service and the others tahsildars and naib-tahsildars.

Ten additional revenue inspectors on Rs. 40—60.

About fifty temporary additional revenue inspectors on Rs. 30 and 35.

Up to twenty paid candidates on Rs. 15.

There is also an office and clerical staff of fifteen men, including a head clerk and a statistical superintendent each on Rs. 80—2—100, a record keeper, and clerks. During settlement the settlement officer is in charge of the district land records establishment.

12. The settlement officer is not required, for the practical purpose of assessment, to determine the competitive economic rent, representing the value of the produce less the cost of cultivation, and only needs this information to assist him in fixing rents with regard to their existing pressure; elaborate enquiries into outturns, prices and cost of cultivation are, therefore, unnecessary.

Standard outturns for the main crops in each district have been compiled by the revenue staff aided by the Agricultural Department; these do not recognize any distinction by soil classes but are assumed to represent the whole area. Experiments are conducted annually, and, during the forecast year, the settlement officer is expected to examine the results, and to perform personally a few careful experiments. But the results of a few experiments over a wide area with numerous distinct qualities of soil can only justify very wide and general conclusions as to the probable course of deterioration or improvement, and beyond this so little weight is attached to such experiments that the settlement officer may omit to mention them in his forecast report. Outturns recorded in estates under the Courts of Wards may also be examined. For the principal crops a table of prices is compiled from official printed returns, from the examination of account books, and from enquiries among cultivators. General considerations affecting the cost of labour are then examined.

On the foregoing material the settlement officer calculates to what extent the rents fixed at last settlement might, in theory, be enhanced; but he makes no pretence of ascertaining with any degree of accuracy the net value of the total tract or district outturn, or of comparing it in any detail at settlement and at revision. He aims solely at obtaining general figures indicating the maximum limits for enhancing rents.

13. Another important feature of the forecast is the examination of the land values and rental history. Here again the settlement officer is not expected to make any systematic enquiry over the whole settlement area. He is instructed to collect a certain number of specific cases rather than to accumulate with the assistance of the land records staff a mass of statistics of doubtful accuracy and uncertain content. Indebtedness is similarly dealt with. Enquiries in the field are supplemented by inspection of the land records and registration offices. Just as the enquiry into produce values and cost of cultivation indicates the maximum enhancement on the rents, as fixed at last settlement, which could in theory be taken; so this enquiry into land and rental values indicates the maximum enhancement on the rents, as they now stand, which it will be expedient to take. Suppose that prices would justify an enhancement of 33 per cent. on rents fixed at the former settlement, whereas a comparison of the rental then and now shows in the aggregate a rise of 10 per cent., a further enhancement on the original rental is justified.

On this material the settlement officer prepares his forecast. This has hitherto been submitted through the Local Administration to the Government of India for sanction and any subsequent divergence from the sanctioned estimate by more than 15 per cent. must be reported for further orders.

14. In the next stage of settlement the formulation of assessment proposals and the fixation of rents are effected by Grouping and Soil Classification. These operations correspond with the distribution of the assessment in other systems of settlement. It is more convenient to describe the process of classification first. The main classification relates to the inherent properties of the soil, but there are subordinate heads dividing the soils into sub-classes according to their crop capacity and position.

Ordinarily eight or ten classes of soil are recognized as typical of the district; for example at the settlement of Nagpur in 1890-95 there were, nominally, six types of soil: recent alluvium (*kachhar*), black clay (*kali*), brown loam (*morand*), gravelly or sandy loam (*khardi*), gravel (*bard*) and sand (*retari*). These were graded in 8 qualities, two qualities of black clay and of brown loam being recognized. Abnormal varieties and qualities of soil were fitted into these eight classes according to common sense and the discretion of the settlement officer rather than with strict reference to their physical or chemical composition. The so-called "soil classes" were not rigidly distinguished by soil differences but were rather "assessment classes" of which the contents were ordinarily determined by the nature of the soil.

Crop capacity signifies the particular fertility of certain soils for certain crops: a typical example is sand with an impenetrable sub-soil which, given ample water, will yield good crops of rice, but is naturally and in general infertile. Similarly there may be two soils, possibly even two soils indistinguishable in appearance, one of which yields excellent wheat or cotton and the other will not grow these crops. For an equitable assessment it is necessary to distinguish between such qualities of soils where they are on a scale deserving consideration. Land is subdivided therefore according to its crop capacity, for example, as Rice land, Wheat land, Garden land and Minor Crop or Open Field land; the Rice land may be further differentiated as Dry Rice land and Irrigated land. (It will be noticed that the distinction by crop capacity corresponds approximately to the Burma practice of recognizing different Main Kinds.)

The conception of position classes does not seem ever to have been very clearly defined; classification by position is in practice a modification of the soil class value by a variety of advantages and defects, some of which relate to the position relative to the general level, some to the position relative to the village, some to the nature or position of the surface, and some to the water advantages. Thus in Nagpur, wheat lands were differentiated as low-lying (*laun*), level (*sadharan*), or high-lying or cut up (*pathar* or *wahuri*), and also as *khari* (land well manured owing to its proximity to the village site) or *ran* (jungle land), and also they might be irrigable, or embanked, with large embankments (*bandhan*), or with small embankments (*bandhia*).

Similarly Rice land was classed as Irrigated or Unirrigated, and the latter as low-lying (*jhilan*), level (*saman*), or high (*tikra*). Garden land was classed as Irrigable or Unirrigable, and as near to or far from the village. In modern settlements there is a tendency also to recognize three zones, modifying the soil value according as it is near or distant from the village; under this scheme the jungle position (*ran*) is abolished.

Formerly it was the practice only to note the classification in a register but now every feature is illustrated on a map. Ordinarily the soil class boundaries are outlined in red, irrigation limits in blue and position limits in green, the names or appropriate symbols of the soil classes and other distinctions are entered in pencil.

15. Obviously classification on these principles renders minute "The soil unit" system. refinement possible and full advantage has been taken of this; a simple device for estimating, recording and utilizing these numerous shades of value is therefore essential. Such a device has been found in the soil unit system. A soil unit is a measure of the productive capacity of soil, just as an area unit; a square foot, is a measure of area. In the soil unit system the relative value of different soils is expressed by soil factors of a varying number of soil units. The value of land is assumed to depend on the average net profits of cultivation, and for each class of soil in every position a factor is assigned expressing its value relative to other soils. For example, with five soils, A, B, C, D, E, let the factor 32 be allotted to C; then if the value of A be double that of C, and B occupy a median position, and similarly E half that of C, with D between, the relative values will be 64, 48, 32, 24, 16. The relative values can be altered for different positions, thus A in a defective position can be reduced from 64 to 56 and B in a favourable position raised from 48 to 56. If, as is ordinarily the case, soil values vary with crop capacity the particular fertility of any given soil under a certain crop can be recognized by varying the factors. It is claimed that on this system, by careful enquiries over wide areas, and particularly by examination of the figures of sub-rents, or new rents, of holdings which are homogeneous in soil, the relative values of all soils in all positions can be established with a considerable degree of accuracy, sufficient at all events for practical comparison between villages and groups, and even to a certain extent for comparing one district with another.

16. For convenience the matter of grouping has been reserved until the soil classification had been described; Grouping. in practice the formation of groups precedes classification. Both grouping and classification have one object: to facilitate the comparison of rental pressure. Suppose that one holding is found on classification to contain 436 soil units and another 296 units, if both let for Rs. 21 or 336 annas the rent per unit or unit-incidence on the first is .77 and on the second 1.13. If the unit incidence for the village as a whole be 1.00, the former is lightly and the latter heavily rented. But if the latter holding be in a village where land values are high and the former in a jungle tract the pressure of rent may be less on the holding which has the higher unit incidence. Such anomalies are forestalled so far as possible by dividing each tahsil into groups of villages more or less similar in character, each group

ordinarily containing from 50 to 80 villages. As will be seen below there is a further classification of the villages at a later stage.

17. The processes just described, grouping, the selection of soil classes and positions and the allotment of their relative values or soil factors are disposed of by the settlement officer under the orders of the Settlement and Financial Commissioners between the forecast and the first submission of detailed proposals. They are dealt with in correspondence and the printed reports do not contain any justification of the system of grouping and classification but in certain cases the settlement officer has left on record for his successor suggestions for improvements at the next revision.

18. The settlement officer is now in a position to fix the standard unit rate for the whole group, and to propose unit rates for each village and rents for each holding.

a. The group rate. This he does as follows.

For each group the total number of units in each cash-rented holding is determined by compilation and addition, and similarly the total cash rental. Dividing the number of annas in the rent by the number of soil units he arrives at the rent per soil unit over the whole group expressed in annas; this is the unit incidence for the group. He takes this as the basis of his proposals for enhancement. Suppose that the existing rent per unit, *i.e.*, the unit incidence, is 75 anna. The settlement officer, after examining general conditions in the light of particular circumstances, proposes a new standard unit rate for the group, say, 100 per unit. The forecast has given the probable enhancement for the tahsil, determined by general considerations; this is further considered and may be modified during detailed inspection, but if the forecast is maintained the settlement officer must decide whether the group under consideration is typical of the tahsil, or can stand a higher enhancement than the average, or requires lenient treatment. He will consider the pressure of rents, the rental history during the expiring settlement, the stability of the tract in bad years, the general character and condition of agriculture and the cultivators, markets, the demand for land, and *lastly* the forecast estimate. These general considerations suggest a suitable standard unit rate, but before framing any proposal he will test its detailed application in a few villages. This examination of general conditions and particular circumstances will enable him to propose a standard unit rate for the group. (It may appear in the course of these enquiries that the villages should be divided into two or more classes and if so this is permissible.)

The next stage is to consider village rates, the rate suited for each village in the group. Any one village may have better soil, be closer to the market or the railway, or the existing rents may be above or below the average. The settlement officer has to determine what percentage of enhancement should be taken in each village. At the end of this stage he fixes the unit rate which will give the desired result and applies this to his soil factors to give acre rates which are rounded to the nearest anna. (It will be noticed that the acre rate for the same soil class differs from village to village with the variations in the village unit rates.)

The settlement officer has fixed the group rate with reference to the general conditions of the district and the particular circumstances of the group, he has fixed the village rate with reference to the general conditions of the group and the particular circumstances of the village; it remains for him to fix the actual rent of each holding with reference to the general conditions of the village and the particular circumstances of each cultivator. The application of the acre rate to each holding gives what is known as the "deduced rent," but in practice the deduced rent is frequently not that actually fixed. The rent fixed may be above the deduced rent, if the existing rent is already above it (in which case it is not enhanced); or below it, if the deduced rent is too heavy to be applied. Using the deduced rent as a guide the settlement officer fixes the rent of each holding on a consideration of the existing rent and *all* the other circumstances of the holding and the tenant. In fixing these the settlement officer relies principally on the *fard mazariem*, a confidential document classifying the cultivators into five classes according to their rent-paying capacity; for example a man with a money lending or cotton growing and pressing business, or a big pension from Government, can pay a higher rent than a man who has mortgaged his cattle, or a widow who supplements the income from her holding by labour for other people.

The settlement officer then submits his proposals for the assessment of the group as a whole and for each village which it contains. These proposals are printed with a brief report and go through the Settlement Commissioner to the Financial Commissioner for orders. The Financial Commissioner can alter the rate for the group as a whole or for any particular village; if he alters the rate for the group he will probably alter the rates for certain villages so that the general effect is to give the demand produced by the group rate as revised by him. In every village for which the unit rate is altered it becomes necessary for the settlement officer to re-calculate all the individual rents.

19. The last stage of field work is the announcement of the new rents and revenues. This is conducted group by group as the orders of the Financial Commissioner are received. The rents for each holding have already been calculated and entered in pencil; if the Financial Commissioner approves the group and village rates the pencilled figures are inked up. The cultivators are summoned to convenient camps and the assistant settlement officer in the presence of the settlement officer presents each cultivator with a patta or rent certificate containing full details regarding the registration of his land, its area and the rent fixed. As shown below the cultivator has an opportunity for objecting to the contents of his patta or may even refuse to accept it on the rent stated and surrender it, but there is very rarely any difficulty on this score. Similarly the payments to be made by malik-makbuzas are fixed and an acceptance taken, and the revised assessment is then offered to the malguzar and his acceptance (*kabuliat*) is taken. As each tahsil is completed the settlement officer submits an Assessment Statement comparing the forecast and results, and after the last tahsil statement he submits his report on the whole operations.

This report is printed for the general public and they can also obtain the tahsil reports on payment.

20. Objections to settlement proposals can be raised at two stages.

The publication of settlement proposals.

Under section 57 of the Land Revenue Act it is obligatory on Government, before notifying the inception of settlement, to publish proposals for the standard enhancement of rents, the percentage of assets to be taken as revenue and the term for which the settlement is to be made. To this end the officer responsible for the forecast draws up a resumé of his proposals, in which he explains, as simply as possible, the proposals and their effect, with illustrations giving the present and proposed acre rates on typical soils. This is published and brought to the notice of the people interested, after which the deputy commissioner and the settlement officer convene a representative public meeting where the proposals are explained, discussed and criticised. This provides for effective criticism of the general considerations underlying the proposals; the same material on which Government will pass orders is before the people who will be affected by the orders.

But while this procedure guarantees a convenient opportunity for discussion of the proposals in general, and the facts and arguments on which they rest, the application of these principles is a particular interest and provision is also made for the consideration of individual representations. When the subordinate staff and junior officers visit the land every individual has an opportunity of discovering all the facts relating to the registration, survey, classification of his holding and a further opportunity when the settlement officer comes round. Ordinarily people are little interested however until they receive their patta at announcement, when, as a matter of course, a show of objection will be made, even before the details are examined. If there is any serious grievance the cultivator will maintain his protest, the settlement officer will then see informally whether there has been any obvious mistake in classification, calculation of area, or otherwise, and rectify it if discovered. The applicant if not satisfied can present a written petition on which the settlement officer will pass a formal order. Any matter relating to the record may be a subject of complaint; there may be a complaint that unirrigated land has been classed as irrigated, that sand has been classed as clay, or poor loam as good loam; there is no restriction. But usually the complaint is, vaguely, that the land has been over classed. Against an order by the settlement officer an appeal lies to the Settlement Commissioner, and so on upwards by appeal or revision. Thus in the second stage objection may be taken to the particular application of the general principles which have been formulated and accepted in the first stage.

21. The procedure described above has been found rather elaborate

A simplified system.

for backward tracts. The soil unit system is complicated and difficult for the people to understand, and it involves a long delay between the settlement enquiries and the announcement of the rent. Under the simplified system lately introduced the settlement officer varies the factor scale from village to village and announces the rents provisionally before they have been reviewed by the Settlement Commissioner

or approved by the Financial Commissioner. This system is considered suitable for any area where the limits of enhancement are governed by the low pitch of existing rents.

III.—The Collection of Revenue.

22. Land revenue receipts fall under three heads—

The annual demand. (i) Ordinary Land Revenue on the Roll, *i.e.* the fixed collections,

(ii) Ordinary Land Revenue not on the Roll, *i.e.* chiefly ryotwari collections and fluctuating revenue.

(iii) Miscellaneous Land Revenue.

As regards Land Revenue on the Roll, the procedure of collection and account, so long as there are no suspensions or remissions, is very simple; a register called kist bandi is maintained showing the revenue as fixed at settlement and this entry remains unaltered until (*e.g.* by acquisition for a road) the total alters. From this a Register of Demands and Collections (the Khationi) is prepared, showing the demand for the current and three preceding years. On the fixed date or dates the headman (lambardar) is required to produce the revenue fixed at settlement as payable by him and his co-sharers and by the plot proprietors for whom he is responsible. In most villages, there are two harvests, the autumn (kharif) and the spring (rabi), and, for the convenience of payees, revenue is collected in two corresponding instalments. The settlement officer proposes these with reference to the harvests of each village. The revenue may be collected entirely after the kharif harvest or entirely after the rabi harvest. Half may be collected after each harvest or the proportions may be $\frac{2}{3}$ and $\frac{1}{3}$ or $\frac{1}{2}$ or $\frac{2}{3}$. If, and for example, the village were almost entirely under wheat, the revenue would be collected at the end of the rabi season.

In the case of Land Revenue not on the Roll, due from ryotwari cultivators, the patwari is required, annually during November, to prepare an Assessment Roll (Jamabandi) in which he includes all holdings under cultivation. An abstract is furnished to the headman who collects the money and pays it into the treasury on a chalan, which serves also as a record of the people who have paid. The abstract and chalan are filled up by the patwari on his visit to the village.

As regards most of the revenue, it is unnecessary to furnish the cultivators, with a notice of the amount due, as the demand is fixed at settlement or, in the case of ryotwari extensions over new lands, is made known when the land is taken up. The tenants and cultivators should, and mostly do, obtain receipts in receipt books with which they are supplied on payment. The receipt books contain on a fly leaf full particulars of the settlement registration and assessment and in the body a series of double-paged entries showing on one side the details of the annual demand including arrears, and on the opposite side the details of collections and the balance outstanding. The entries regarding demand are written up by the patwari, usually about October, before the first instalment of revenue falls due; entries regarding payment may be made by the patel or lambardar at time of payment but are usually made by the patwari at some convenient time, usually

during the rains, after all the revenue for the year has been paid. Thus the cultivator remains for some time with no written acknowledgment for revenue which he has paid.

23. The procedure in recovering arrears differs in malguzari and ryotwari areas. In malguzari areas no one is responsible for the revenue but the lambardar and his co-sharers in the estate; if the lambardar wishes to recover revenue from a plot proprietor he must file a civil suit or apply to the Deputy Commissioner under section 157 of the Central Provinces Land Revenue Act. The revenue payers are few and will ordinarily be personally known to the tahsildar. A register is maintained therefore in which the character of each lambardar is placed on record, and showing whether the action for recovery should be strict or lenient. Where a man pays regularly it will be sufficient in case of an arrear to issue a notice of demand; where he is casual in payment the tahsildar may, without previous notice, issue a warrant attaching his moveable property, or even a warrant of arrest. No one has power to attach immoveable property except the Deputy Commissioner who may attach and take under direct management any land in respect of which an arrear has accrued but may not sell it without sanction from the Local Government. The procedure in ryotwari areas is similar; warrants of attachment may issue but action under the warrant is rarely necessary. Thus in the township office visited there were 137 processes last year for ryotwari defaults, in 18 cases notices of demand were issued, in 118 warrants issued to attach moveable property and in 1 case a warrant of arrest issued; but no attachments or arrests were necessary.

24. One minor point deserving notice is that the survey number in ryotwari areas is ordinarily indivisible. With permission one ryot may admit another ryot as a partner, but the original occupant remains solely responsible for the whole revenue.

25. The collection of water rate proceeds on quite different principles. The matured area is measured up by the canal patwari or amin who gives a demand statement or tax-ticket to each cultivator. The amount due is collected by the sir-panch or irrigation headman who pays it into the treasury. For lands where no irrigation amin is appointed the patwari, under the supervision of the revenue inspector, performs the duties of the amin. For this they receive commission at a rate not exceeding 6 pies in the rupee. The irrigation panchayat is remunerated at the rate of 3 annas per acre irrigated.

26. In years of crop failure revenue may be suspended or remitted. Revenue which has been suspended for three years is ordinarily remitted. But there is a stage beyond cure by remission, when settlements break down and abatements become necessary. An abatement is a remission of rent and revenue which is due to extreme deterioration, such as may result from a series of famine years, and must therefore be extended over a term of years, so that the country may recover. The period of abatement may be for two or three years or for the whole remaining period of settlement. Thus the whole round of settlements

between 1898—1900 broke down. An instance has been known in which abatement was made immediately after the announcement of rents as people offered to surrender their land rather than pay the rent (or revenue) demanded. But it is very doubtful whether they would have carried out this threat, and such an occurrence is of extreme rarity.

IV.—Land Records.

27. The Record of Rights in the Central Provinces comprises the following documents which are drawn up at settlement and revised at each succeeding settlements :—

(a) The Statement of Proprietors (Khewat) showing the name of each share holder (including lessees and mortgagees in possession but not plot proprietors) together with the nature and extent of their interests;

(b) the Field Book (Khasra) in serial order of field numbers, showing for occupied land, the name of the person cultivating, his rights and the rent, if any, paid; also, for every field, the soil classification, cropping, and new and old fallows; and for unoccupied land the area and description, e.g. as nala or waste;

(c) the Holding Register (Jamabandi, columns 1 to 10) a list of persons cultivating or occupying land, with their fields grouped by holdings, and the rent they pay—

(d) the Field Map, and

(e) the Village Administration Paper (Wajib-al-arz).

The record as thus defined, unless challenged in a civil court within one year of completion, obtains an evidential value; on certain matters, generally speaking, those of public interest, the entries form conclusive proof, on others, of private interest, they carry a legal presumption of accuracy. This generalisation must not be pressed too far; the law is contained in section 80 of the Land Revenue Act of 1917 of which the broad effect is that the civil courts must accept as conclusive proof of what they state practically all entries except those regarding rents and *muafi*, or freedom from payment of land revenue.

Certain of these documents, the Field Book, Holding Register and Field Map are carried on as "Annual Papers" and are brought up to date annually, but these annual corrections have no legal value except as secondary evidence. (In Berar they have, and annual corrections form part of the record of rights.)

The following paragraphs describe first the compilation of the record of rights and then its maintenance.

28. The two stages in the preparation and correction of the record are map correction and attestation; the correction of the map has hitherto been a separate operation, antecedent to attestation, carried out by a special map-correction staff. This staff provides the attestation parties with accurate maps and these rarely have to make further map corrections. The map correction party enters a district a year before settlement begins. It is hoped in future to keep the annual map correction so up to date that special map correction as a preliminary to settlement will be unnecessary. The work of attestation is one of the two chief operations of settlement, and it is important not only intrinsically as

the compilation of a valuable legal record but also indirectly as the basis of assessment. The object of attestation is to record the area, the tenure, occupant and owner of each field or, in ryotwari villages, each survey number.

A field is ordinarily the whole of any single parcel of land held by the same person on the same tenure; an aggregate of such parcels forming a single property or occupancy is termed a holding. On open field land, corresponding with *ya* land in Burma, the field would cover 5 to 15 acres, and might extend to 50 or 100 acres. Formerly a single field, comprising both rice land and open field land, might have been surveyed as two separate fields though contained in a single parcel, but even then the practice varied, and now the two would always be included in one field, the rice land being separated by a dotted line and indicated by a conventional symbol. A single field may and ordinarily does contain several different classes of land assessed at different rates. There is no distinction between a field and a survey number, except that the former term is used in *malguzari* areas, and the latter in *ryotwari* areas. In the assessment registers prepared at settlement, the acre rates are quoted separately against each soil found in the holding but are not allocated to the individual fields in the holding. The rent is fixed on the holding as a whole, not separately on each field in it. The separate agricultural plots, the actual fields as this term is understood in Burma, are not distinguished on the map; although this was formerly the practice in the case of rice land, even then no survey number was allotted to each plot and now the survey of these plots has been discontinued and rice land is indicated conventionally.

For attestation, unless the village has been re-surveyed, the additional revenue inspector works on the annual papers of the *patwari*. The entries are all verified by the additional revenue inspectors and checked and signed by the assistant settlement officer; this gives them legal validity, but the records are not regarded as complete until the settlement officer has passed them. Thus at re-settlement the record of rights is based on the annual papers of the *patwari*, after preliminary re-survey if necessary, verified by the settlement establishment, and attested as correct.

29. The maintenance of this record is the duty of the district and land records establishment. The *patwari* is And maintenance. required to keep it up to date annually on the basis of actual possession. He is not assisted (nor is he encumbered) by reports from the Registration Department or from Civil Courts, nor are occupants of land required under penalty to notify him of changes. Although the Transfer of Property Act is in force, many transfers are unregistered, especially partitions, but the legal effect of a transaction is no concern of the *patwari*. Similarly certain transactions are illegal and can be nullified within the year, but the *patwari* is expected to record the transfer, with a note during the first year that the transfer is provisional. The *patwari* is not expected to register legal rights but to record the facts existing on the ground as evidenced by occupation and the admissions of the parties.

Ryotwari areas form a partial exception. In such areas mutations can only be effected before the *tahsildar*; the *ryot* cannot take up a

new survey number without formal orders of the Deputy Commissioner or relinquish one without giving formal notice. Two men, if they obtain permission, may jointly occupy one survey number, but only one is responsible for the revenue.

The record of rights is considered very accurate. But extensive check and correction of existing maps are still necessary before re-settlement, "this work proved very necessary, even in a district like Nagpur, which is much more developed than some." The need for this is ascribed chiefly to survey errors or changes and with the exception of partitions the record of mutations is held to be remarkably correct, so that a week's inspection might fail to reveal a single material error of registration.

30. The records prepared by settlement and maintained by the Land Records Department provide detailed and up-to-date information regarding the ownership and occupancy of agricultural land and its produce. Statistics are annually published showing for the province as a whole and for each district the area held by the several classes of landlords and tenants, the revenue and the rent paid and the area of land transferred by sale, mortgage or otherwise. But the utility of these masses of statistics is vitiated by the fact that none of the terms mean what they seem to mean. It is perhaps impossible to cope with the complexity and artificiality of tenures in the Central Provinces by any statistical apparatus. To adopt the words of the latest Nagpur settlement report, in discussing the economic of agriculture in the Central Provinces one must forget all that one has read elsewhere on the subject, discard experience and buy a new dictionary. What is termed "rent" in the statistics is not rent, but a ryotwari payment; in many cases but not in all, the tenant is a raiyat. True rent exists in the form of interest or under the name of sub-rent (it may even by accident be recorded under the name of rent). In undeveloped tracts, even "sub-rents" are far from representing the true rent using the term to signify the most that a tenant could afford to pay. Cotton land in the Chanda district, for example, is so plentiful that it is sublet over large areas at under Rs. 2 per acre. Rent in the form of interest is not recorded and rents under the name of sub-rent are not compiled. Moreover, the severe restrictions on rental enhancements by landlords have obscured land values. It is impossible therefore except by a course of special study to ascertain the conditions of agricultural economy. But it should be noted that one school of thought, possibly the school now predominant regards the peasantry as spoon-fed, protected to such an extent that they have lost their native vigour and are helpless now in spite of their protection, perhaps have become the more helpless on account of it.

V.—Survey and Miscellaneous.

31. The fixed demand remains unaltered from one settlement to the next and failure to maintain survey does not affect the revenue. Probably for this reason, the maintenance of survey has always been unsatisfactory and prior to re-settlement re-measurement has been necessary. In order to bring the survey up to date an assistant settlement officer for Map Correction has hitherto been posted to a district due for settlement with a

staff consisting of a Settlement Superintendent, two Assistant Superintendents of Land Records and eight additional Revenue Inspectors. With the object of keeping the maps up to date so as to avoid special map correction, four officers of superior status have recently been appointed as Deputy Directors of Land Records and a great improvement is believed to have resulted.

The original traverse was performed by the Survey of India Department and in two districts the cadastral work also. But as cadastral work on this plan proved too expensive, it has since then been handed over to a local staff. The traverse is maintained and extended as required by an officer on deputation from the Survey of India Department. The cadastral details are mapped and corrected on the basis of the traverse. For areas where accuracy is expensive and unnecessary a simpler scheme has been devised; this is explained below in the section dealing with undeveloped areas.

32. The Financial Commissioner has hitherto been the chief revenue Revenue Organiza- authority under Government, and in general tion. control, through Commissioners and Deputy Commissioners of the Divisional and District Revenue Administration; the Settlement and Land Records Department, subject to his control, are administered by one officer who is both Commissioner of Settlements and Director of Land Records. As the result of the Reform Scheme, the post of Financial Commissioner has been abolished and his work has been taken over by the Revenue Member of the Governor's Executive Council.

There are four Divisional Commissioners and 18 Deputy Commissioners (or 5 and 22 respectively, reckoning in Berar). Below the Deputy Commissioners are Assistant or Extra Assistant Commissioners in charge of subdivisions; these however are not stable administrative units, but aggregates of tahsils, differently constituted as convenience may require and the officer in charge almost without exception resides at the Headquarters of the district. The district is divided into tahsils each under a tahsildar charged with the revenue and magisterial administration of the tahsil, assisted by one (rarely by more than one) deputy or naib-tahsildar and sometimes supported by an additional tahsildar. The unit of revenue administration, as already mentioned, is the estate or mahal under a lambardar, except in ryotwari areas where Government deals directly with the actual cultivator aggregated for administrative purposes into the village under a patel. The lambardar receives no commission from Government on the payments of the revenue assessed on the malguzari or net assets, but is entitled to receive a commission of 5 per cent. from the other co-sharers in the mahal on the revenue he collects from them. On collections from plot proprietors he receives a drawback or commission of 10 to 20 per cent. The patel is paid by a similar commission on ryotwari payments. The lambardar is generally also the headman (mukaddum). If the lambardar is an absentee, his duties as head of the village are discharged by a nominee known as the mukaddum gumastha. The Commissioner of Settlements is in charge of settlement operations and land records work. He is assisted in traverse survey by a Survey Officer and by a Deputy Director for survey work; in land records

1. These have now been reduced to one as the outcome of a Resolution by the Legislative Council that they were an unnecessary extravagance.

work (in the Central Provinces only) there are four deputy directors, one for each Division. The Commissioner of Settlements appoints, promotes and removes Revenue Inspectors (in the Central Provinces but not in Berar) but otherwise, on the land records side, he is primarily an inspecting and advising officer. The district land records staff comprises one Superintendent of Land Records (in one district there are two), one to three Assistant Superintendents and on an average 15 Revenue Inspectors, about three to a *tahsil*. There is one patwari for every 7 or 8 villages.

33. The relative position of the village officers is rather complicated. A patwari, though nominally a village accountant, is charged on an average with 7 or 8 villages and the number may rise to 10 or more. A village however need not contain a residential area (*abadi*) but may comprise solely agricultural lands. Such an unoccupied "village" is also termed a "rith". For each rith, as well as for each inhabited village, there must be a *lambardar* who will also be the headman or appoint an agent. The *mukaddum* and all the cultivators of the rith may live in one or more of the adjacent villages. Similarly every village and rith is in the circle of a *kotwar* or village policeman; the circle of a *kotwar* usually comprises two or three villages.

34. The Revenue Inspectors are promoted from among patwaris. The ordinary course of promotion is from patwari to Settlement Additional Revenue Inspector and from that to a permanent post as Revenue Inspector. The Settlement Commissioner is in close touch with the men as Additional Revenue Inspectors and is thus able to select the fittest for promotion. The superintendents are recruited from *tahsildars* who join the land records department on deputation for three years. The *tahsildar* appointed to the land records department has hard out-door work and no executive influence; he does not become expert in land records work until at least a year has elapsed and when his three years are up his future career will be little influenced by his work in the land records department. According to rule the patwari is subordinate to the *tahsildar*, but that officer knows very little about land records work and is hardly capable of supervising him. The real controllers of the patwaris' work are the revenue inspectors, the superintendents of land records with their assistants and the deputy directors of land records. These report patwaris for reward or punishment to the Deputy Commissioner.

The Deputy Directors draw Rs. 250—25—600; the Superintendents draw Rs. 175—275 with a deputation allowance; Assistant Superintendents draw Rs. 80—5—120, and Revenue Inspectors draw Rs. 40—1—60 with a horse allowance of Rs. 15 to Rs. 20 and a good conduct allowance of Rs. 5 to Rs. 10 which may be granted to not more than one-third of the total number. Patwaris draw Rs. 17 to Rs. 23 in three districts, Rs. 14 to Rs. 20 in two districts and Rs. Rs. 12 to Rs. 18 in all other districts, together with an allowance of Rs. 4 per mensem as compensation for high prices.

35. Patwari candidates are usually men with relatives in the land records service as patwaris or in some higher rank. They have rarely passed any examination.

higher than the IV Standard Vernacular. Annually during the recess a survey class for patwari candidates is formed at the headquarters of each revenue inspector. At the end of the rains they are examined by the superintendent in survey and the patwari rules. They receive no further training but wait until an officiating vacancy occurs which does not ordinarily take long.

Revenue inspectors are selected patwaris who receive ample practical training while additional revenue inspectors on settlement. Assistant superintendents of land records are promoted revenue inspectors. Every tahsildar and Extra Assistant and Assistant Commissioner receives a course of land records instruction, and every Assistant Commissioner is also supposed to receive two month's training on settlement; Superintendents of Land Records are taught their work by doing it under the supervision of the Deputy Director of Land Records.

36. The general procedure both of settlement and land records work has been simplified for remote and backward areas. The simplified system of settlement has already been mentioned. The simplification of survey consists essentially in surveying independently of traverse stations until cultivation extends sufficiently to justify accurate survey. In certain areas the system is even more primitive and some villages in the Melghat area in Berar are assessed without survey on the yoke assessment system according to the number of cattle used.

THE LAND REVENUE SYSTEM OF MADRAS.

1.—*The Basis, Standard and Principles of Assessment.*

The system of land revenue in Madras outside permanently settled estates is known as the ryotwari system. Under Tenures and the basis and standard of assessment. this system the person whose name is registered in the revenue accounts as holding any land is liable to pay the assessment on that land direct to Government. He is known as the pattadar. Though a patta is no document of title, the pattadar is actually the owner of the land wherever the revenue registry is up to date. In many cases he is also the actual cultivator, but land is sometimes leased to tenants, especially in rich wet tracts. Until 1915 the assessment, in theory, represented half the net produce, *i.e.*, the balance left after deducting the cost of cultivation from the value of the gross produce. In practise however the assessment represented a much smaller fraction and in 1915 it was laid down that a half should represent the maximum limit and not the normal standard.

2. The land revenue of each district or part of a district is settled Fixed and fluctuating assessments. for a term of thirty years. During this period, although the water rate, where this is charged separately, fluctuates from year to year, the revenue demand on assessed land which is occupied does not vary except—

(a) where a general suspension or remission of the assessment is granted owing to famine, drought and general failure of the crops, floods;

(b) where individual remission of assessment is granted to lands irrigated from a Government source owing to failure of the water supply;

(c) where the irrigation of land is improved at the cost of Government subsequent to settlement;

(d) where land classified at settlement as dry land, which includes all land whether embanked or unembanked not irrigated from a Government source, is reclassified, at the request of the pattadar, as wet land, or land classified as single crop wet land is transferred to double crop wet land.

3. A cultivator who improves land is entirely exempted from any Improvements and enhancements. future enhancement of the revenue on that account.

Where the settlement results in the assessment payable on any individual holding being enhanced by more than 25 per cent., the increase in assessment is imposed gradually, *i.e.* by increases spread over a series of years. An enhancement equal to 25 per cent. of the old assessment is imposed in the first year and the remainder is generally levied by instalments equal to 12½ per cent. of the old assessment.

4. Irrigated land which has a secure supply of water from a Government source is classed as wet land and pays a consolidated charge for water and land revenue; a share is subsequently credited to the irrigation department. If the supply is insecure the land is classified as dry land and pays a water rate if water is taken. Similarly land classified as single crop wet land is liable to an extra charge if a second crop is grown.
- Water rate.
5. A cess for local purposes is levied on the land revenue at a rate which differs in different districts. The cess is levied on the gross demand, including water rate, without regard to any remission which may be granted. Suspension of land revenue does not ordinarily carry with it suspension of cess.
- Local cesses.

II.—Settlement.

6. An original settlement comprises three distinct processes in two separate stages :—
The processes of settlement,

- (a) the classification of soils and the collection of the data required for the determination of the demand ;
- (b) the determination of the demand ;
- (c) the introduction of the settlement.

During the first stage the settlement officer classifies the soils and collects the data required for the determination of the demand. The results of the classification and of the enquiries made by the settlement officer are embodied in a Scheme Report and on this basis the demand for the settlement area is determined. In determining the demand the settlement officer attempts to minimize any abnormal increase or decrease in the existing demand which will follow from a too rigid application of the data collected by him. The report is then submitted to Government through the Collector of the district and the Board of Revenue. After orders are passed by Government on the scheme report the settlement is introduced in each village. During this stage the pattadars are afforded an opportunity of preferring objections to the demand fixed on their holdings at the settlement and their objections are heard and disposed on their merits.

7. At an original settlement the data for determining the demand fall under two heads :—
The determination of the demand.

- (a) the calculation of the net produce, and
- (b) the general economic condition of the tract.

The calculation of the net produce comprises four elements, the selection of standard crops, the determination of the outturn, the valuation of the produce and the cost of cultivation. As the outturn varies with the fertility, the soils have to be classified with reference to their nature, composition and properties. The general principles on which the soil classification have been carried out in the various districts are indicated in the next paragraph.

8. The soils are divided into five main series—alluvial, regar or black, red or ferruginous, white or calcareous, and arenaceous. Each main series is divided into classes according to the mechanical composition as clay, loam or sand. The distribution of these classes is shown in the following table:—

Alluvial—

I.—Clay; II.—Loam.

Black (Regar)—

III.—Clay; IV.—Loam; V.—Sand.

Red (Ferruginous)—

VI.—Clay; VII.—Loam; VIII.—Sand.

White and grey (Calcareous)—

IX.—Clay; X.—Loam; XI.—Sand.

Arenaceous—

XII.—Loam; XIII.—Sandy loam; XIV.—Sand.

Each class is generally divided into five sorts—1 best, 2 good, 3 ordinary, 4 inferior and 5 worst. For purposes of classification the land is divided into survey fields. Each survey field is classified generally on its merits according to its place in the system described above. Thus a survey field consisting of ordinary red loam is classed VII-3, while a field of best black clay is classed III-1.

It will be seen that the Schedule provides for nearly 70 sorts of soil. From experiment and enquiry it has been found unnecessary to frame a separate rate for each sort of soil and they are therefore grouped together in "*tarams*" or assessment classes. Thus for dry cultivation in Tanjore the worst black clay (III-5) inferior black loam (IV-4), ordinary red loam (VII-3), good black sand (V-2), good red sand (VIII-2), good arenaceous sand containing from one-third to one-tenth clay (XIII-1) are grouped in the same *taram*.

The relative productivity of different soils does not remain constant when irrigation is applied. This fact has been recognized and the grouping of soils in the assessment classes is therefore different for wet and dry lands. Thus clayey soils, which retain moisture for a long time, are classed higher than loams for dry cultivation, but the position is reversed in regard to wet rates, as the former soils are rendered very soft by irrigation and are consequently difficult to plough. Thus in the case of wet lands in Tanjore, worst black clay (III-5) has been placed two *tarams* lower than ordinary red loam (VII-3), although both these soils have been grouped together in the same *taram* in the scale for dry cultivation.

Ordinarily land is classed as wet, only if it is irrigated from a Government source. As the success of wet cultivation depends largely on the certainty of the water-supply the assessment on wet lands is based not only on the soil classification but also on the nature of the irrigation source. Irrigation sources are classified according to the nature and the quality of the water-supply. The classification has varied but the following grouping is now generally adopted:—

First class.—Large perennial rivers, and well supplied tanks connected with them.

Second class.—All sources, river-fed or rain-fed, ordinarily affording a supply for eight months and upwards.

Third class.—All sources, river-fed or rain-fed, which ordinarily afford a supply for less than eight months but not less than five months.

Fourth Class.—All sources, river-fed or rain-fed, which ordinarily afford a supply for less than five but not less than three months.

Fifth Class.—All other sources.

In theory lands with the same soil classification, which are irrigated by the same source, should be assessed at the same rate. Lands remote from the irrigation source are however less likely to receive water than those which are nearer. This hardship is generally allowed for by adjusting the soil classification; thus soil which would strictly be classed as good red loam, VII-2, might be classed as ordinary red loam, VII-3, or, it would seem, that a black soil might be classed as red, or a loam as a sand. Only lands classed as wet have a right to water from a Government source of irrigation, outside the areas classed as wet, water-rate is levied in addition to land assessment in the years when water is supplied from a Government source of irrigation.

Only in Malabar and South Kanara is there any considerable area of wet land which is not irrigated from Government sources. Wet lands in these districts are classified on principles similar to those applied elsewhere, but the facilities for irrigation are determined by the level of the lands and not by the supply in the irrigation source. Thus in South Kanara first class wet lands are those which yield two wet crops and are ordinarily irrigated by direct flow. The second class comprises lands which yield two wet crops, the second irrigated mainly by baling; lands yielding one wet and one dry crop; and other low lying wet lands which owing to their position have an unfailing supply of water for the first crop. All less favourably situated wet lands have been placed in the third class.

Apart from such exceptional conditions, land is classed as wet or dry according as it is normally irrigated from a Government source or not. Dry land may be embanked (*manavari*), or unembanked. Embanked dry land may, and often does, grow a dry crop, but can also grow a wet crop; it is classed according to its value in the dry scale, but is generally assessed one *taram* (assessment class) higher. Thus in the first group villages of Tanjore ordinary black clay (III-3) and ordinary black loam (IV-3) which have been placed in the sixth and seventh *tarams* respectively in the dry scale, will, if embanked, be assessed at the rates applicable to the fifth and sixth *tarams* respectively; whether a wet or dry crop is grown on embanked dry land the rate of assessment remains the same.

(iv) Wet lands are classed as 'single crop,' 'registered double crop,' or 'compounded double crop.' 'Single crop' wet lands are lands for which in all ordinary seasons the supply of water is sufficient to grow only a single wet crop. 'Registered double crop' lands are wet lands which in all ordinary seasons have an unfailing supply of water for two crops and are therefore compulsorily registered as 'double crop,' the charge for the second crop being one half of the single.

crop assessment. 'Compounded double crop' lands are wet lands for which the supply of water is not ordinarily unfailing; on these the ryots are permitted to compound the charge for the second crop at rates varying from one-third to one-sixth of the single crop assessment according to the classification assigned to the irrigation source.

9. For the determination of outturns food crops alone receive consideration; industrial crops are excluded and among food crops those most widely cultivated are selected as standards on which to base the relative valuation of the soils. The instructions contemplate that the relative productivity of the different soils in each series under the standard crops shall be determined by measurement and enquiry. From the outturn as determined on this basis an allowance of 15 to 25 per cent. is made for vicissitudes of season and unculturable patches.

10. The outturn per acre for each assessment class is converted into money at the average price of the last 50 years excluding years of famine. A deduction, ordinarily about 15 per cent., is allowed for cost of carriage and merchants' profits. The result is taken as the cash value of the gross produce for the purpose of calculating the assessment.

11. From the gross value calculated in this manner the cost of cultivation deducted. According to the instructions the cost of cultivation should be calculated on the assumption that all the labour is hired; thus it included an allowance for the labour of the cultivator and his family. The balance remaining after the cost of cultivation has been deducted represents the net produce on which the rate of assessment is calculated.

12. These rates of assessment apply only to the most favourably situated villages. The villages are grouped according to their natural advantages and in the groups less favourably situated or naturally poorer the rates are reduced.

13. Thus in an original settlement the rates of assessment were in theory determined by mathematical calculations on a scientific basis of experiment. But almost every factor contained an element of convention and the rates of assessment arrived at in accordance with the principles enunciated above were sometimes varied with reference to local conditions and the existing demand.

The theory and practice of settlement. The original scheme of classification was drawn up in 1858. In 1879 it was thought that the relative valuation of the different varieties and qualities of soil had definitely been settled and from 1882 to 1889 crop experiments were suspended. The standardisation was premature and in 1889 it was laid down that further experiments should be conducted. But the Tanjore Scheme Report shows that the outturns finally adopted for that district were not based solely on crop measurements and that the results obtained by such experiments were modified with reference to the outturns adopted for adjoining districts. Similarly in the South Kanara Scheme Report of 1898, it is not possible to trace any close relation between the assumptions

and the experimental results, and the officer who introduced the settlement is of opinion that not much reliance was, or could have been, placed on the experiments. Even where the experiments were utilized in framing assumptions for the better qualities of soil the outturns assumed for the inferior qualities were based on a conventional reduction. In the same way conventional reductions were made for inferiority in the water-supply.

Similarly the classification has become conventional. As mentioned above a standard scale of relative valuation was drawn up in 1879. In this scale all the different varieties of soil were arranged with fixed relative values and, although in 1884 it was abandoned as a standard of exact relative valuation, it remained until the end of the series of original settlements as a normal scale, showing not the relative values of different *tarams* but the grouping of soils in *tarams* and the order of the groups. For sufficient reason it might be varied, but ordinarily it was generally accepted as ranging the different soils according to their relative productivity. The classification included another element of convention. Any soil say ordinary black clay (III-3) will be more productive near the village and less productive further off. Near the village it may be classed III-2, at a little distance it may be classed III-3 and still further off III-4 or even III-5. Similarly, when cultivated with a wet crop, it will be more productive near the source of irrigation with ample water and less productive further off, and identical soil will be classed differently according as it is near to or far from the source.

The estimation of the expenses of cultivation "used to be one of the more difficult and most conjectural of the various steps in connection with a settlement. . . . The usual practice was to work out the expenses for the best soil and then to proportionally diminish this standard." 1. The cost was not determined by averaging the results of enquiry from cultivators but by recording separately each item of ordinary expenditure. This gave the cost for the best soil; the cost of cultivation on inferior soils was reduced by making deductions proportional to the reductions in the assumed outturn.

The grouping is also to a certain extent a matter of convention. Ordinarily the highest assessment in the second group will be the same as the second assessment in the first group, and the highest assessment in the third group will be the same as third assessment in the first group, and so on. Corresponding reductions are made in the lower assessment classes. In practice the grouping (which is not applied in the case of wet lands) is determined chiefly by market facilities and it is rarely found necessary to form more than two or perhaps three groups.

The assessment of wet lands adopts a similar convention. Ordinarily the highest assessment under a second class source corresponds to the second assessment under a first class source with corresponding reductions in the lower assessment classes.

14. The procedure in classification and framing rates has been described as follows: The classifier first of all Settlement procedure: blocks out the lands according to its series as The scheme report. Black or Red, Loam or Clay. He then asks the

cultivators to point out their best soil ; this may be a black clay which he will class as best (III-1) or good (III-2) according to his estimate of its quality. - He continues on the same lines until all the land in the village has been classified. Rates are then calculated on the classification of this village and if the result appears likely to produce an equitable assessment the classifier proceeds from village to village, keeping the line as uniform as possible. When a suitable area, for example a taluk, has been completed, the settlement officer examines the results village by village in comparison with the previous assessment. If any village shows a conspicuous enhancement or reduction on any abnormal feature, he scrutinises the classification. The discrepancy, between the new and old demand may be due to erroneous classification. He can then change the classification, reducing III-1 best black clay to III-2 good black clay, or he can change the series from clay to loam or sand. This reduction of the highest class entails a corresponding automatic reduction of all the classes in the village. This is all done before the Scheme Report is submitted. Another method which is sometimes adopted for the purpose of mitigating abnormal differences between the old and the new demand is to alter the grouping of the villages in which such differences are noticed.

The general effect of the whole initial stage of an original settlement is that the land is blocked out into a certain number of assessment classes mainly but not entirely with reference to the nature of the soil ; the relative productivity of these assessment classes is estimated as the result of experiments and enquiries and on the results obtained in similar adjacent districts. The assessment is distributed over these various classes in correspondence with their relative fertility so as to produce such an aggregate demand over the whole area as is justified on general considerations with particular reference to the existing assessment. That is the first stage which terminates in the Scheme Report summarising the proposals.

15. As regards assessment, the essential feature of the second stage, the Introduction of the Settlement, is the opportunity which is given to every assessee for filing an objection against the demand to be imposed on his land under the proposed rates. Already the effect of the proposed settlement has been considered village by village before the preparation of the scheme report ; during the introduction every individual can represent his case, singly or in groups. After orders have been passed by Government on the scheme report a notice called a 'rough patta' is issued to each pattadar through the village headman ; this shows for each field or subdivision included in a holding, the area, assessment, description of land, etc., both according to the revenue accounts and according to the settlement. Where a holding is registered jointly in the names of two or more individuals notice is issued to all of them. Absentee pattadars are required to make their own arrangements for receiving the pattas. In South Kanara (and presumably in other original settlements) objections were numerous ; there were 58,000 petitions out of less than 84,000 cases. Many of them were frivolous but all definite complaints not evidently frivolous were given for enquiry. Where the classification appeared too high it was reduced, and the total relief

granted during the introduction of the settlement amounted to Rs. 1,08,173 or representing a decrease of 4.4 per cent. on the assessment originally proposed. The settlement officer was not required to obtain the orders of Government before making this reduction of the demand contemplated in the scheme report.

16. Re-settlements are conducted in the same two stages.

Re-settlement. In the first stage the settlement officer collects the data for his proposals. He tours through the district examining in detail the working of the last settlement and its effects and enquiring into the cost of cultivation and general economic conditions in several villages. The results of his enquiries are compiled and tabulated and on these, and on his personal impressions, he frames his proposals for revision of the settlement. No crop measurements are conducted; the classification of soils is ordinarily left unchanged. Even although the relative valuation may be incorrect on account of mistakes in the original classification, or has been rendered inappropriate by the introduction of new crops, the classification would be left unchanged unless a serious mistake affected a large area. If the settlement officer considers that any reclassification of soils is essential he has to give full justification for his opinion. Reclassification of irrigation sources has however been a more common feature of re-settlements. The proposals for the revision of assessment are generally based on the variations in the prices of the staple grains of the tract. The economic position of the holders of agricultural land in the tract, as evidenced by rents and land values, is also taken into account. Other important points to which the settlement officer directs his attention are the effect of any large improvements in the means of communication or in the sources of irrigation, the increase or decrease of population, the extension or contraction of cultivation the increase or decrease in area under the more valuable crops, the extent to which it has been necessary to resort to coercive measures in the collection of land revenue, and the general character of recent seasons. As the result of these enquiries he submits in the scheme report his proposals with regard to revision of the classification or grouping, the enhancement, if any, and its distribution over the various assessment classes by revision of the rates. Thus if he proposes an enhancement of 20 per cent. over the district as a whole he may propose 25 per cent. on the two highest assessment classes, on the lower classes 20 or 15 per cent. and in the lowest classes he will probably propose that the rates be left unchanged. In the Bellary Scheme Report a precedent has been created by the proposal of the settlement officer that an enhancement of 3 annas in the rupee be taken on the black soils and only two annas in the rupee on the red soils which he considers less secure. The proposals are published, and the people affected have an opportunity, of which they avail themselves, to represent their case before Government passes orders. Their representations are considered and orders are passed.

The settlement is then introduced. Any revision of classification sanctioned by Government is carried out and in such cases individuals again have an opportunity to object against the new classification and the rates. In other cases no objection to the rates

is entertained; the classification was confirmed at the original settlements, the enhancement only takes the form of a percentage-increase which Government has already approved and no grounds for an objection lie.

III.—The Collection of Revenue.

17. The revenue on ryotwari lands is payable in two to four monthly instalments which vary in different districts. The annual demand fixed at settlement on individual fields, as explained above, ordinarily remains unaltered during the currency of the settlement. This demand is intimated to the pattadar in the patta issued to him during the introduction of the settlement. In the usual course he receives no further intimation of the amount due each year except a verbal demand from the headman as each instalment falls due. But if the demand varies he is entitled, on application, to obtain a statement of the account, showing how much is due under every head, land revenue, water-rate, arrears, if any, and cess or other miscellaneous items. For each instalment he obtains a receipt in a receipt book. According to the rules he may inspect the village accounts and, if he wishes to dispute the amount, he has an opportunity for doing so at the annual overhauling of the accounts conducted by a gazetted officer and known as *jamabandi*.

Water-rate, second crop charge and remissions are fluctuating items. If land classed as 'dry' is cultivated with the aid of water from a Government source of irrigation or if a second crop is grown on land classed as 'single crop wet' with the aid of Government water, there is an addition to the demand fixed at the settlement. The pattadar is also liable to pay an extra charge on 'single crop wet' land if he grows a crop such as sugarcane which occupies the land for more than six months. These additional demands are made on the report of the village accountant whose work is checked by the revenue inspector. If, owing to deficiency of water, dry crops are cultivated on wet land, only the dry assessment is charged. On 'registered double crop wet' lands only the 'single crop wet' assessment is levied if only one irrigated crop is secured and, owing to excess or deficiency of water, the other crop fails. This concession however is not applicable to 'compounded double crop' lands. Remission of the assessment is granted in respect of all classes of wet lands if, owing to deficiency or excess of water, no crop is grown or the crop is a total failure. A ryot who desires remission must apply for it in writing and his application is disposed of on the report of the revenue inspector. Ryots who fail to apply do so at their own risk. Individual applications are not however required in very exceptional circumstances as when famine, drought, or flood, entails a general remission of dry assessment.

18. If each instalment of the revenue is not paid by the 10th of the month in which it falls due, a written notice to pay may issue from the taluk office on the application of the village headman. This notice is an order to distrain the moveable property of the defaulter.

If the arrear of revenue is not paid on presentation of this order, moveable property, as nearly as possible proportionate to the amount of the arrear, is distrained. If the amount still remain unpaid, the property so distrained is sold. Should any arrear still remain, the landed property of the defaulter may be attached and sold after the prescribed notices are issued. It will thus be seen that although the land does not prescribe any order in which moveable and immovable property should be proceeded against for the realization of arrears of revenue, steps are taken against immovable property only as a last resource.

IV.—Land Records.

19. In Madras there is no record of rights. The villages are divided into survey fields ordinarily comprising not more than five acres of wet land or ten acres of dry land. A survey field may contain several properties and each property forms a subdivision ; as a rule no survey field should contain more than 20 subdivisions and where such divisions are minute the survey field may be less than 5 acres. At survey each of these fields is demarcated, surveyed and separately plotted in a field measurement book which shows each subdivision. On the basis of these field plots a Village Map is prepared. At original settlement a Diglott Register is compiled purporting to show the person in actual ownership of each subdivision. Subsequently, during the period of settlement, the village accountant is supposed to report changes as they occur and on receipt of orders, to enter them in an annual register, the Adangal. Although there is no record of rights this register ought to show at any time the existing position as regards ownership. Owing to various causes it has not however been found possible to maintain the registry up to date, but more attention is now paid to this branch than formerly.

20. One of the principal operations carried out in connection with and verification at re-settlement. resettlement is the revision and correction of the village permanent register. The work involved necessitates the prolonged employment of a large staff of subordinates. The survey is ordinarily conducted by a survey officer independent of the settlement officer. In two recent experiments an attempt has been made to conduct the work by a branch of the settlement party. In Tanjore, a closely populated delta district, the experiment has definitely failed and been abandoned : in Bellary, an upland district of dry cultivation, the experiment, still in progress, promises to be successful. Similar experiments have been fairly successful in Coimbatore and Vizagapatam. The work of revising the registers is conducted with the most scrupulous regard for the interests affected. When the enquiries have been completed, the settlement officer, as, already explained, issues to each pattadar a notice called 'rough patta'. This notice shows the time and place at which objections to entries in or omissions from the patta will be heard by the settlement officer or one of his assistants. It is generally considered that after this enquiry the resettlement register shows with substantial accuracy the persons in

actual enjoyment of each holding; but it does not purport to show their legal title and does not pretend to be a record of rights. It has recently been decided that an attempt should be made to develop a system of registry of titles through the agency of the Registration Department. This system has been introduced in an experimental and tentative form in selected areas.

21. Although there is no record of rights, communal and public lands are protected with the most punctilious care. These are demarcated by stones at every bend and plotted in the field measurement book which contains a record of all the measurements taken. The village-site and land pertaining to it, tanks, burial grounds, roads, waterways and paths are recorded so that any encroachment on communal or public property can at any time be detected and resisted.

22. There are two alternative methods of conducting economic enquiries. The enquiry may be extensive, directed to obtaining a general survey over a wide area, or intensive, confined to the detailed examination of a limited area or of selected features. In Madras the extensive method is not employed; it has never been the practice to collect annually information regarding the agricultural economy. Such information is only available in settlement reports describing the enquiries conducted during settlement, or in the reports on special investigations conducted when occasion may require. There are no statistics to show the proportion of land held by agriculturists, and non-agriculturists, residents and non-residents, or to show the area mortgaged at any given time, or the area alienated during the year by sale or mortgage, or the area rented, or the pitch of rents. The only feature of the agricultural economy for which there are annual statistics covering the whole province is the area cultivated with the different crops.

23. Even at resettlement the enquiries into such matters and even into the cost of living and cost of cultivation are not exhaustive. The settlement officer does not attempt to collect or compile statistics of this nature dealing with the district as a whole. His enquiry is not extensive, but intensive. He selects villages or areas which he considers representative and collects such information as he considers necessary to provide him with the material for revising the assessment. Thus in Tanjore, Mr. Jackson chose six Registration Offices, and tabulated all the documents relating to sales, mortgages and leases for certain periods, chiefly with a view to examining the change in land values since settlement. He suggests incidentally that the best land pays four-fifths of the produce to the landlord and the poorest land one-half, but there are no figures to show even for the villages taken as representative the area rented and the pitch of rents. In Bellary although the settlement officer has made a very detailed investigation of economic conditions in about 5 per cent. of the villages and in another 15 per cent. has enquired into indebtedness, in the remaining villages no enquiries have been held. The only economic feature which generally receives systematic treatment in resettlement reports is the position as regards indebtedness. To this a great deal of attention is devoted.

V.—Survey and Miscellaneous.

24. As mentioned above the unit of survey is the survey field separately surveyed and demarcated, with a sub-division for each property or class of land which it contains. Although all the subdivisions are surveyed only public lands are demarcated. The survey fields are connected up with theodolite stations, so that at any time the exact position of each demarcation stone can be accurately determined. The whole province been surveyed except some of the large estates on which the interior detail is no concern of Government. These are now being brought under survey.

25. The maintenance of the survey and demarcation devolves primarily on the village accountant, but he has not been found capable of maintaining them satisfactorily. The check of the demarcation stones, and their replacement or repair if missing or damaged, has within the last few years been allotted to a special officer, the land records inspector, who does no other work. Since this appointment was created the maintenance of demarcation stones has been considered satisfactory. The maintenance of the survey by the measurement and record of new subdivisions is the duty of the revenue inspectors. It is however now proposed to entrust these officers with the duty of maintaining the demarcation also and to abolish the land records inspectors.

26. At the head of the executive revenue department is the Board of Revenue consisting of four members, one of whom is in charge of Land Revenue and another, as Commissioner of Settlements, in charge of Settlements, Land Records, Survey and Famine. The settlement officers are immediately subordinate to the Commissioner of Settlements. The Survey Department is administered by a Director under the general control of the Commissioner of Settlements. This department is only concerned with original surveys or such resurvey as is required in connection with resettlement; it has nothing to do with the maintenance of survey. For the maintenance of survey and land records there has hitherto been a separate Land Records Department administered by a Director under the general control of the Commissioner of Settlements. Under the Director there were five Assistant Directors each charged with the supervision and inspection of maintenance in about five districts. In each district there was a Land Records Tahsildar who was primarily charged with inspecting the maintenance of registers and demarcation work and over-checking the maintenance work of Revenue Inspectors and Land Records Inspectors. He was under the administrative control of the Collector of the District and under the technical control of the Assistant Director and the Director of Land Records. The officers of the land records department also devoted much attention to the maintenance of a correct and up to date revenue registry; they scrutinized the several registers kept in taluk offices bearing on the maintenance of the revenue registry, survey and demarcation and reported defects in their maintenance to the Collector. On the abolition of the land

records department with effect from 1st May 1921 the technical supervision of the land records work has devolved on the Collectors, Divisional Officers and Tahsildars. In each district there are two or more Divisional Officers between the Collector and the Tahsildar (Township Officers) and ten or more taluks (townships). In each taluk there are ordinarily four to five revenue inspectors each with about 30 villages. A village ordinarily comprises about 1,000 to 1,500 acres of occupied land. The village officers comprise a headman who collects revenue and a village accountant (sometimes with an assistant) for maintaining the registers and preparing the assessment. The revenue inspector enquires into changes of registration and, in undisputed cases which do not involve the formation of new subdivisions, effects the mutation; he also inspects land assessed, or liable to assessment, at the wet-rate. Any matter connected with the ordinary revenue routine which the Revenue Inspector cannot dispose goes up to the Tahsildar of the taluk which in Madras is the primary unit of general revenue administration.

Note on the Standard Scale in Madras.

1. A scheme for the classification of soils was first laid down in the Manual of Classification prepared in 1858. By 1879 this scheme had been adopted in 23 settlements, but the different settlements exhibited great diversity in the grouping of soils and the framing of rates.

2. The scheme provided for five series of soils containing 14 classes and 66 sorts. The sorts of soil recognized in each district were grouped under a certain number of *tarams* or assessment classes, but the contents of each assessment class varied from district to district; only in three districts, Chingleput, Coimbatore and North Arcot was there any degree of uniformity. In these three districts the soil classification had been conducted by a single officer on the basis of experiments in Chingleput, and for some reason his grouping was accepted (with one small exception) as the most suitable basis for a standard scale of relative values.

3. The rates of assessment exhibited equal diversity. In the districts settled up to 1879 thirty-five rates varying from Rs. 12 to Re. 1 an acre had been adopted for wet lands and rates varying from Rs. 20 to As. 4 an acre for dry lands. The standard scale was framed with a view to standardise the values of the various classes and sorts of soil. This was effected by omitting rates which had rarely been adopted and were unlikely to be required in future. This process left 13 standard rates for wet lands ranging from Rs. 12 to Rs. 2 and 13 standard rates for dry lands ranging from Rs. 5 to As. 4.

4. Thus the standardization comprised two processes—

(a) the standardization of soil groups; and

(b) the standardization of the relative value of the groups.

The idea was that in future it would be necessary to determine (by experiment or otherwise) a suitable assessment for any single soil-group or assessment class, and that the suitable rates for the remaining

assessment classes would follow by applying the relative values of the standard scale.

5. The method of application was as follows. The 13 rates for wet lands were distributed in five groups, each group containing 9 of these rates. These groups were based on the classification assigned to the irrigation source and must not be confounded with soil groups or assessment classes. The second rate of the first group was the highest rate of the second group; the third rate of the first group was the second rate of the second group and the highest rate of the third group. This is illustrated in the marginal table. During the

Group	1		2		3		4		5	
Rates	Rs.	A.	Rs.	A.	Rs.	A.	Rs.	A.	Rs.	A.
	12	0	10	8	9	0	8	0	7	0
	10	8	9	0	8	0	7	0	6	0
	9	0	8	0	7	0	6	0	5	0
	8	0	7	0	6	0	5	0	4	8
	7	0	6	0	5	0	4	8	4	0
	6	0	5	0	4	8	4	0	3	8
	5	0	4	8	4	0	3	8	3	0
	4	8	4	0	3	8	3	0	2	8
	4	0	3	8	3	0	2	8	2	0

settlement of the Madura District the rates of assessment arrived at by the application of the standard scale were verified by comparison with those worked out by the adoption of (a) the outturns and cultivation expenses of the sanctioned settlements of adjoining and similarly situated districts, and of

(b) a commutation rate deduced from the price returns of the Madura District. This comparison showed that the standard scale of relative values gave too low a rate for the better and too high a rate for the poorer soils. The idea of determining relative values by a standard scale was therefore abandoned.

6. But this did not involve the abandonment of the standard grouping of the soils into assessment classes. This has remained as the standard system and been generally adopted, with local modifications where necessary. But the attempt to standardize the relative values of the assessment classes was abandoned.

THE LAND REVENUE SYSTEM OF THE PUNJAB.

1.—The Basis, Standard and Principles of assessment.

1. The system of land revenue in Punjab is, in theory, zamindari } Government does not collect revenue from individual cultivators, but from the holders or joint holders of a large estate, normally coinciding with the administrative village. Ordinarily, however, the proprietary body consists of a group of families, not necessarily of common ancestry, who occupy severally quite small holdings, often of no more than a few acres ; and, although the heads of these families are recognised as joint owners, in theory jointly responsible for the revenue and represented by one of their number as headman or lambardar, in practice, the share of revenue due from each proprietary family is severally distributed and separately recoverable. Thus as a general rule the so-called landlords are in fact peasant proprietors each cultivating his own land.

2. The land revenue is settled by periodical enquiries into the } The basis and profits and circumstances of agriculture and the standard of assessment, } agricultural population. The assessment is fixed according to circumstances but may not exceed half the value of the net assets of cultivation, the average surplus which the land may yield after deducting the expenses of cultivation from the value of the gross produce. This surplus is generally estimated on the basis of recorded rentals, whether in cash or in kind, most frequently the latter. The net assets and rent are not identical, but generally for purposes of assessment a full fair rent paid by a tenant at will is regarded as a sufficiently near approximation to the net assets and the safest guide and measure in estimating them. So that in effect assessments are based on rents. Proposals to take less than half the value of the net assets were formerly supposed to require justification. The rule now is that the assessment must be according to circumstances but must not exceed half the net assets. In practice the assumptions made in calculating the net assets are very cautious ; in recent settlements, during last 12 or 15 years, the half net assets standard has scarcely ever been reached and the assessment represents a much smaller fraction than one half, often falling below a quarter.

3. The demand may either be fixed, or fluctuating, or partly fixed } and partly fluctuating. During the period of a settlement the fixed revenue remains un- Fixed and fluctuating assessments. } changed from year to year, unless exceptional circumstances render suspension or remission necessary, or a permanent reduction of revenue is granted for loss of land by fluvial action ; the fluctuating revenue varies from year to year with the area cultivated or the area harvested. The comparative merits of these two

systems have been the subject of a prolonged controversy. Originally the whole demand was fixed. But this was found to entail a needless loss of revenue in areas where cultivation was extending. Also in precarious areas, dependent on inundation or hill torrents, or on a and extensive suspensions and remissions; the demand had to be scanty and capricious rainfall, a fixed demand necessitated frequent pitched low to be recoverable in poor years, and suspensions and remissions were still found necessary. The alternative of a fluctuating assessment was long regarded with suspicion and disfavour, not only by revenue officers but by the cultivators. Fixity of demand was appreciated and every one mistrusted annual assessments on measurements conducted by subordinate officials, particularly if they were to estimate and assess on matured areas. But experience, and improvements in the records of crops and in the crop recording establishment, have gone far to rebut these objections and it has been found that, whereas people may accept a system of fluctuating assessments with reluctance, they prefer this system when they have grown accustomed to it. Thus fluctuating assessments are now a normal feature of the revenue system and the revenue annually collected on this principle approaches $1\frac{1}{2}$ crores and exceeds one-third of the total land revenue.

4. In calculating the fixed demand an allowance is made for uncultivated and unculturable areas and the assessment on the normal cultivated area is the principle constituent of the demand; but profits from the waste, from spontaneous products of cultivated land and from water power are also liable to assessment if they constitute an important item in the income of the proprietary group, although assessment on waste land in respect of pastoral profits is now very rare.

5. The duration or period of a settlement varies according to the stability of agricultural conditions; the last operation of settlement is the announcement by Government of the period for which it is to be in force. Where conditions are unstable the period (as for the Thal and Mohar Circles in Shahpur) may be no longer than 15 years; where conditions are stable the period (as in the rest of Shahpur District outside the Jhelum colony) will ordinarily be 30 years. Under the new constitution there are signs of a movement for extension of the period.

6. There is no prescribed limit to the enhancement which may be taken on re-settlement, but it is accepted as a principle that deferment, if granted, should not be too short. As a matter of practice the enhancement would usually be restricted, for a period of five years, to an addition of one-third to the previous revenue; then, if necessary, to an addition of another third; and the full demand under the new settlement, if it exceeded the old demand by more than two-thirds, would not be reached until the end of the tenth year from the first introduction of the settlement.

7. Improvements by landowners during the currency of a settlement are protected, if the demand is fixed, by the terms of settlement; at re-settlement, as regards newly sunk wells and in some other cases, this

The exemption of improvements.

protection is continued until the improvement has been working effectively for twenty years. Thus, if a well be sunk, converting dry land into wet, and be first brought into work ten years before a settlement elapses, the assessment will not be raised on account of the improvement during the remaining ten years; at re-settlement the land will continue for another ten years to be assessed at the rate sanctioned under the new settlement for dry land, and, on sufficient grounds, the period of twenty years may be extended. It is proposed to introduce a considerable degree of differentiation in the period of protection with reference to the varying cost of well construction in different tracts. For unlined wells no exemption is ordinarily granted, but partially lined wells may receive a concession. Other expensive irrigation works, such as canals, permanent dams, or reservoirs, are treated similarly. The same principles are applied in the case of fluctuating assessments. But no exemption or concession is granted for improvements other than irrigation works, except where land is reclaimed from waste with the aid of a loan from Government. The general spirit and purport of the rules is to grant concessions in cases where a considerable outlay has been incurred and such cases in effect consist solely of improvements in irrigation. In one village visited, Saidpur, the demand fixed at settlement in 1916 was Rs. 401, but at the time of our visit the actual revenue was only Rs. 389, the difference representing the balance of exemption due on wells constructed before re-settlement.

8. Where land is improved by Government irrigation a share of

Water rate.

the enhanced yield is taken as a water rate, a service payment for the use of water; this is levied on the occupant of the land who uses the water. A share of the enhanced yield is also taken, as water advantage revenue, from the enhanced rent or increment of the surplus produce (*i.e.* net assets or economic rent) which accrues to the owner by reason of the improvement of his land. In some cases land has been improved by private irrigation; in such cases the occupant is not liable to Government for any water-rate, but the owner is liable to pay revenue on his land in its wet aspect as water advantage revenue.

The water-rate is assessed on the sown area according to the crop grown, the actual rates for different crops varying with the different irrigation systems. Remission is granted on application if there is an almost total failure. The settlement officer is not concerned with the assessment of water-rate although he will frequently be asked for an opinion. The water-rate on major canals is fixed by Government in the Public Works Department, and by the Deputy Commissioner with the sanction of Government on minor canals and other irrigation works which are under the care of the revenue department. If, as often happens, occupiers' rates are varied at settlement, the settlement officer invariably frames the initial proposals on which orders are passed by Government after the views of the irrigation department have been considered. In any case the proposals emanate from the revenue and

not from the irrigation department. For several years back the rates have been fixed empirically with reference to the rates current on systems previously in existence. There is no definite standard for occupancy rates; but it is now usual to consider the proportion which such rates, as proposed, bear to the estimated value of the tenants' share of the produce.

9. The water advantage revenue is assessed by settlement officers.

Water advantage
revenue.

The water-rate is treated as part of the cost of cultivation, and the net assets form, as usual, the basis of the revenue demands. But even after allowing for water-rate the net assets are larger on irrigated than on unirrigated land and a revenue demand based on these net assets will be proportionally higher. The difference between the revenue on irrigated and unirrigated land represents the water advantage revenue. On works maintained by the irrigation department the water advantage revenue is credited to the department by book transfer.

10. Where canal irrigation has become certain the water-rate is consolidated with the water advantage revenue.

Assessment by the
irrigation department.

Elsewhere both the water-rate and the water advantage revenue are assessed on the fluctuating system, according to the irrigated area matured (or in some cases according to the irrigated area sown). The water-rate (but not the water advantage revenue) further varies according to the crop cultivated. On systems under the charge of the irrigation department the demand on individual fields is calculated by the irrigation surveyor (canal patwari). In areas where a fluctuating water-rate predominates, any other portion of the demand which may be fluctuating is also assessed by the irrigation surveyor. On systems under the charge of the revenue department the demand is calculated by the village surveyor, but pre-audited in the district office before collection. The procedure of assessment and collection is described below; the point of immediate importance is that on the large perennial canals and on some inundation canals the assessment of irrigation dues by irrigation officers has long been and still is, the accepted principle. The expediency of using professional engineers as tax collectors, and the degree of confidence attaching to assessment statistics prepared by irrigation subordinates, are matters which have been long in controversy, and from remarks in settlement reports they are regarded by many revenue officers as still open to question.

11. The Cesses levied in addition to the land revenue fall under

Local cesses.

two heads; the cesses imposed by Government, and the *malba*, or fund raised by customary contributions towards village expenses. The cesses imposed by Government comprise a cess of 5 per cent. on the land revenue for the remuneration of the headman (lambardar) and of one anna to two annas in the rupee for local amenities provided by the District Boards, such as hospital and educational facilities and local communications. With customary contributions it has been the policy of Government to interfere as little as possible; out of this common fund the village pays for the cost of repairing survey marks, fees due on warrants for default of revenue, expenditure incurred by the headman when paying in the revenue, the cost of taking the

Page 346, (line 6).—After "produce" insert " or to the estimated value of the gross produce."

*Page 346 (paragraph 10).—Cancel first sentence, and substitute " Where canal irrigation is of old standing and there is comparative fixity of supply and its distribution, the water advantage is sometime' assessed at a moderate rate (*nahri parta*) as a fixed sum which is liable to periodic adjustment to permanent changes in the irrigation.'s*

Page 346 (paragraph 10), line 9.—Before "calculated" insert "generally."

Page 346 (paragraph 10), line 13.—After "department," insert "and on certain others."

census, the entertainment of strangers who put up in the village rest-house. The settlement officer records the local customs regarding contributions to the *malba*, and the method of spending it, but in his official capacity he does not go beyond the making of this record.

II.—Settlement.

12. A settlement of the land revenue, purely in its fiscal aspect and apart from the incidental preparation or revision of land registers, comprises three distinct processes; the collection of data for determining the demand, the determination of the demand by the analysis and application of these data, and the distribution of the demand over individual villages and holdings. Incidental to these proceedings are the measurement or re-measurement of occupied or cultivated areas, and the registration or scrutiny of occupancy and titles. When complete and accurate maps have been prepared at the previous settlement and changes in boundaries have not been excessive, the measurement or re-measurement is not properly a survey but an amendment of the existing field map. There is no system of registration of titles in the strict sense of the term. The entry of a right in the record is presumptive evidence, not a complete title. In the Punjab a re-settlement is preceded by a forecast in which the district officer estimates the probable financial results of settlement operations, and discusses other grounds, if any, for re-settlement; orders on the forecast are usually determined by financial considerations. The actual settlement is conducted in two separate stages. During the first stage the Settlement Officer makes a close personal study of the area for settlement and at the same time carries out any re-measurement which may be needed, and collects, compiles and analyses the material which will form the statistical framework of his proposals for assessment. On the more important matters, as will appear below, he obtains preliminary orders as the work proceeds, and at the conclusion of his enquiries he submits an Assessment Report dealing ordinarily with a single tahsil. This Assessment Report gives an account of his proceedings, a review of the statistical and other material bearing on the assessment, and his proposals for assessment. An abstract of his proposals with a brief statement of their basis is published for information and public criticism. The Assessment Report is then submitted through the Divisional Commissioner to the Financial Commissioner who considers any objections which may have been received and drafts orders for approval by the Local Government. In the second stage, after the orders of the Government have been received, the settlement officer introduces the settlement, distributing the demand over individual villages and holdings. This introduction of the settlement is an important matter but it takes very little time as the bulk of the work, all the re-measurement and registration, has been done before the submission of assessment proposals. Ordinarily in each tahsil a year is allowed for re-measurement and about six months for inspection; in practice the settlement of each tahsil seems to take about two years, but the work overlaps, measurement in one tahsil coinciding with inspection in another. The second stage need only take

a couple of months from the date on which orders are issued by Government, but if orders have been delayed, as happened in one tahsil of the Shahpur District, extensive re-measurement may be required and introduction would occupy five or six months. When the new settlement has been introduced in all the tahsils a final report describing the operation is submitted.

13. A Settlement Party normally consists of the Settlement Officer and one Assistant Settlement Officer, with one Tahsildar and three to five Naib-Tahsildars for each tahsil and about one kanungo to every four patwaris. The kanungos include those of the ordinary revenue establishment but about four times as many settlement kanungos are introduced. These is also a staff of temporary patwaris and a small office staff.

14. The net assets of the landlord form the theoretical basis of assessment and half of these may in theory be taken as the revenue. The Settlement Officer is required therefore to calculate the net assets and to analyse the the general economic conditions with a view to determining what proportion to the net assets should be taken. The procedure which he adopts and the principles on which he acts derive ultimately from the methods of settlement in the North-Western Provinces before English rule extended over the Punjab. In the early days the procedure was complicated by "elaborate calculations to ascertain what the landlord's assets should be. It was not till nearly 1833 that it occurred to Government to ascertain what the net assets actually were." But the convention that a full fair rent may be taken to represent that net assets has simplified the calculations. The estimation of the average net rental (*i.e.* surplus produce or economic rent) of land based on actual data enables him to avoid calculations which must necessarily be based on nebulous and more or less conventional data. It is still necessary to estimate the value of any contribution by the landlord towards the expenses of cultivation but the settlement officer need attempt no detailed estimate of the actual cost of labour, cattle and material in the various processes of agriculture. In place of estimating the net assets by calculating and deducting the expenses of cultivation the settlement officer is required to estimate the true rent. But in the Punjab about half the total occupied area is cultivated by the owner and of the rented area more than two-thirds is leased on the share produce system. Thus little use can be made of cash rents as a basis for determining the rental value and an estimate of the rent is a compound process with three factors: the outturn, its value and the share taken by the landlord.

15. On certain points of prime importance it is possible, and therefore convenient, for the settlement officer to obtain preliminary orders. The fixed demand under the old settlement rests on the old survey; it has to be decided how far the old measurement, as maintained and brought up to date during the expiring settlement, can be used without re-measurement as a basis for the new demand, and

how far re-measurement will be required. The conduct and results of the settlement will also depend largely on the framing of classification categories and assessment circles. To choose any single year as the basis for estimating the area under different crops would be unsound; if the whole area was under sugarcane one year and under rice the next, the value of the gross produce would differ greatly in the two years. Records of cropped areas during recent years must therefore be scrutinised to arrive at a normal figures as basis for the outturns, for the areas under various crops and for the ratio of matured to cultivated areas. The demand will depend also upon the prices at which the produce is valued. On these points therefore the settlement officer is required to obtain orders of the Financial Commissioner as early as conveniently possible.

The first operation undertaken by a settlement officer (it may even be taken up before his arrival) is a special Re-measurement. girdawari or crop inspection to determine what re-measurement is needed. Riverine areas always need re-measurement, in other areas partial lines are run and percentages calculated to show:—

- (a) the number of field unchanged;
- (b) the number of field where only the tenancy has changed;
- (c) the number of mutations involving no change in the external boundary;
- (d) the number of mutations involving a change in the external boundary.

These statistics form the basis of the preliminary report which the settlement officer submits containing recommendations about re-measurement.

In an area of mixed crops it is not sufficient to determine the outturn per acre for each crop, it is necessary also to determine the normal proportions sown and matured under each crop. The settlement officer therefore selects a cycle of years which he thinks will give a true normal, regard being had to the pace at which cultivation is expanding, and, excluding obviously abnormal years, frames a preliminary report on the years to be chosen as the basis for the produce estimate.

To ascertain the value of the produce the settlement officer examines the fortnightly reports published in the Produce Prices. Gazette, the records of trade prices at the principal markets, and local prices as ascertained by himself and his assistants. These figures are used to support his recommendation concerning the commutation prices to be used in the produce estimate. (Further analysis is still required to ascertain the general change, *i.e.* the effective rise in the prices of agricultural produce since the last settlement.)

16. The outturn varies with fertility and it is required therefore to classify the land into categories within each of which, for purpose of assessment, an average or normal outturn may be assumed. In the Punjab however there is no soil classification as this term is understood in other parts of India; irrigation is considered all important, and qualities of soil as comparatively

negligible. Thus the land is classed according to the source of irrigation as—

Canal irrigated	...	...	(Nahri)
Well irrigated	...	...	(Chahi)
Spring irrigated	...	...	(Abi)
Inundated	..	...	(Sailab)
Other unirrigated or 'dry' land	...	...	(Barani)

Unirrigated land would include not only dry cultivation on unembanked uplands, but also cultivation in fields embanked to impound and store water for the cultivation of the wet crops, for example, rain-fed rice. Such embanked and unembanked lands might be differentiated, or all dry barani land might be included in one class and assessed at a uniform rate. Large portions of the Province are arid or semi arid, and the presence or absence of irrigation over-shadows all other distinctions, while on the other hand the actual differences in soil texture, chemical composition, etc., are not great. Thus in such tracts the soil classification follows irrigation. Elsewhere—in the hills and submontane tracts—where irrigation is not of such paramount importance and rainfall fairly abundant, considerable physical differences exist which are of importance and are used as a basis of classification. The assessment resulting from classification is adapted to local conditions by the formation of assessment circles, and is further adapted to individual villages and holdings in the subsequent distribution of assessment during the second stage of settlement. Thus although a greater degree of refinement in classification formerly obtained and is still advocated the need for it is not considered urgent. In the arid or semi-arid plain districts anything like a general minute classification based on physical difference would be decidedly unpopular. Such differences, where they occur, affect large blocks generally and not individual fields or holdings and adjustment, so far as necessary, can be, and is, made in the internal distribution.

17. Besides this classification of land according to the kind of irrigation, the country is also divided into assessment circles which are more or less homogeneous groups of villages normally in continuous blocks. The distinctive characteristic of an assessment circle is that throughout the circle the rates by classes may be utilised as guides to the actual rates to be imposed for these classes in each constituent village. From village to village the normal circle rates will require, adjustment, but they should be capable of application as a guide and basis for the village rates.

18. In the determination of outturns all crops which cover an appreciable area, whether food or non-food, industrial or non-industrial, are taken into consideration, and an outturn is fixed for each crop for every class of land on which it is cultivated. The assumption for outturns depend on:—

- (a) the estimates of the previous settlement ;
- (b) the records of crop measurement conducted during the expiring settlement by local officers ;

(c) the assumptions approved in recent settlement of similar or adjacent districts;

(d) the outturns estimated for the district by the Director of Agriculture (which are revised from time to time in accordance with annual crop measurement and with information regarding exports),

(e) the recorded outturns over large areas from the accounts of large estates, such as those managed by Courts of Wards, or owned by the wealthier zamindars, or military farms, and

(f) crop measurements conducted by the settlement officer and his assistants during the course of operation.

Very little weight is attached to crop measurement as a means of determining the outturns. "Since the attempt to record soils with any minuteness has been abandoned it is quite usual to find all the land dependent on rain in a large circle put into a single class. Obviously the thousands of acres so classified will vary widely in natural fertility and the average outturn will be affected by the degree of skill and industry possessed by the cultivators. The yield of different harvests also varies to an extraordinary extent, especially in the case of unirrigated crops." Crop experiments therefore are primarily regarded by most officers as means for defining and correcting their personal estimates and they are used in the Reports to illustrate rather than to prove or support their assumptions. Thus in the settlement of the Shahpur District, Statement XIII in the Assessment Report on the Khushab Tahsil, which summarises the data for determining the outturns, contains figures to show the outturns arrived at by experiment; but for many crops there were no experiments, for some the experimental result differs widely from the outturn adopted, and in no case is any information given regarding the number of experiments or the area which they covered. In the Assessment Report on the Berar and other tahsils of the same district, although outturns are discussed in some detail in the body of the report, the table of produce estimates gives no information whatever concerning the basis for the outturns assumed. There is however a more or less definite system of crop experiments (see Financial Commissioner's Standing Order No. 9, paragraph 8) but the results are not as valuable as they might be. This is due to the paucity of the agricultural department staff, and to the fact that the attention of district officers has for many years past been necessarily devoted to matters other than revenue administration. Owing to frequent accidents of season and other causes the short period occupied by settlement operation does not give settlement officers sufficient time to form satisfactory conclusions on the experimental data which they collect. Such data are inevitably scanty as, generally, the settlement officer has one or at the most two years to collect them before he has to frame his assessment. What is really needed is systematic, scientific and continuous experiment, and collection of the resulting data by agricultural experts, not only during settlement but also between settlements. It is considered useless to expect much from comparatively spasmodic experiments conducted only during settlement operations.

19. These preliminary operations provide material for estimating the money value of the gross produce, Calculation of the rental value. The landlord ordinarily takes a definite share of the gross produce, usually, a half, one-third, or two-fifths, but in certain cases he makes contributions towards the expenses of cultivation, especially the water rate, and on the other hand the tenant may make payments in addition to the share of produce, especially towards the water advantage rate. By adding or subtracting such miscellaneous items from the landlord's share, the true net assets can be calculated; half of these net assets represents the maximum which may theoretically be taken as the revenue demand. The rent calculated by this process is checked by comparison with the rents statements of estates, under the Court of Ward, with the accounts of Military farms, and with such trustworthy figures for fixed cash rents or fixed produce rents as may be available. By this procedure the settlement officer is enabled to frame an estimate of the net assets over the whole of each assessment circle. The assessable capacity as thus determined has to be further considered with reference to general economic and political conditions which have always received great attention, and to local circumstances.

20. It deserves notice that so far as possible, and ordinarily to a very large degree in practice, the assessment Revision settlements. circles, the classes of land and the estimates of outturn are left unchanged. The frame work of settlement is based on natural physical conditions, and, once these have been accurately interpreted, is little less enduring than the physical elements on which it rests. The classification is entirely based on obvious unquestionable facts; only the accuracy of the record can be questioned. This is made known to each landowner at the time that the registration and re-measurement of his land is notified, so that, if there is any error in

Page 352 (paragraph 21).—Cancel second sentence and substitute "For each village he prepares an abstract, which is a sheet rather than a book, though the sheets of all villages are subsequently bound up in book form."

sheet rather than a book. This contains such elements of his estimate regarding the assessable capacity as he can put on paper. For each village he has a detailed village assessment statement containing (in the form which we saw in the Montgomery district) figures for:—

- (i) the area cultivated and uncultivated, irrigated and unirrigated;
- (ii) the cultivation and rents,
- (iii) the number of wells,
- (iv) the status of owners and other particulars of ownership,
- (v) the land revenue paid,
- (vi) the population, man and beast,
- (vii) the transfers of land, and
- (viii) the averaged cropped areas during the years selected as the basis for the produce estimate.

The abstract is illustrated by a sketch to show the sources of irrigation, *e.g.* wells, and at least such classes of land as are differentiated under the existing distribution over holdings. Thus the settlement officer might note that in the north there was a block of good or average or poor friable loam under dry cultivation, in the south, well-irrigation, and the south of this inundated land. He would especially note whether the land in each class was good or bad as compared with the average of that class over the assessment circle. In theory the principal object of these inspection notes is to facilitate distribution of the assessment over villages *after* Government has sanctioned the proposals for assessment. But in practice they are taken into consideration when the proposals are originally framed. The inspection of individual villages and the consideration of their circumstances, revenue paying capacity, etc. (with the totals thus attained for a whole assessment circle) constitute a most essential element or guide for the settlement officer in finally deciding the total assessment appropriate for the circle with reference to its statistics and the results of his theoretical calculations of its half net assets. Briefly the work of assessing a circle is a gradual movement from a general view (yielded primarily by the circle statistic and data) to a view of the included particulars (yielded by the result of individual inspections) and then again from the latter view to the general view, both views mutually modifying each other in the process.

The effect of this procedure is that when the settlement officer is framing his proposals for assessment he has full command of the theoretical data for assessment in each class of land not only over the assessment circle as a whole but for every village, and has also framed already and recorded a rough but considered opinion of the practical effects of his proposals for each class of land in every village. He has also received orders on the main chief theoretical factors, assessment circles, classes of land, crop proportion and prices, and it would rarely happen that his proposals for assessment would diverge widely from the intentions of Government. At the same time he can adjust the rates with full knowledge as to the effect of the adjustment in every village which it affects. He can therefore make proposals with some degree of confidence that they will, at least as regards their general effect, meet with acceptance, and with certainty that the distribution over circles and villages will in practice correspond closely to his intentions.

22. Under recent orders, after the settlement officer has submitted his report, a brief abstract is prepared and translated into the vernacular. This gives —

(i) a short explanation of the distribution into assessment circles ;
 (ii) the main data on which the half net assessment estimate is based ;

(iii) the general consideration on which the pitch of the amount of the assessment proposed are based, and

(iv) the assessment actually proposed and the actual average revenue rates for adoption.

A period of one month is allowed from the date of publication during which anyone affected is allowed to submit representations or objections for consideration by the Commissioner

who will, if necessary, obtain the opinion of the settlement officer on them before reviewing the report and take steps to bring them to the notice of the Financial Commissioner. This procedure has only recently been introduced, and in fact has so far been applied in the case of one district only.

23. After Government has passed orders on the rates, the settlement officer is introduced. In this stage the settlement officer distributes the assessment over villages and over individuals. He is allowed to vary the total assessment of the circle to a limit of 3 per cent. above or below the sanctioned aggregate. As regards the assessment on individual villages the settlement officer has a free hand in putting any village as much above or below the figures brought out by the circle rates as he pleases. Ordinarily he distributes the assessment over the villages in accordance with his estimates previously formed of their assessable capacity. When he has finally decided what the village ought to pay he announces the demands and signs a statement certifying the amount. Objections may then be lodged. They are presented to the settlement officer from whose orders an appeal lies to the Financial Commissioner.

The further distribution of the assessment over individual properties is regarded as the most important part of settlement, but as a rule it presents little difficulty. Before this stage is reached the subordinate settlement staff has been discussing individual distribution with the village and assisting the people to arrive at a satisfactory result. All sorts of internal distribution are in vogue. The commonest is probably based on the assessment classification with perhaps a further subdivision especially of wells. Flat rates on unirrigated cultivation and cultivated areas are common in the plains districts, and indicate how little importance is attached in practice to physical difference of soil; there may even be a flat rate over the total area, including uncultivated land. Some villages assess on shares according to the geneology; some assess on ploughs or on wells (so much per well, disregarding the catch crops on rain fed lands); if the people desire a differential rating of soils (*e.g.* good and poor) even though separate rates have only been framed for classes of land (*e.g.* chahi, barani) the settlement tahsildar may be directed to classify the village on the lines desired. A special case of great importance occurs in the distribution of assessment on well-irrigated land. Ordinarily the land is assessed at the dry rate, or at some rate between the dry rate and the full chahi rate; the balance is placed in a lump sum on the well and remitted if the well goes out of use. Where grazing areas are large some of the revenue is often levied on the cattle. This can be done in two ways; either the cultivated area is assessed at a low rate per acre and the balance divided up proportionally over the cattle every year; camel, oxen and sheep or goats paying, say, in the proportion of 8 : 4 : 1 per head; or each head of cattle pays so many annas per head for each class and the balance, if any, is spread over the cultivated areas. The people generally express the distribution over soils in proportions, *e.g.* annas 8 in the rupee for the most valuable soil per acre annas 6 for the second and annas 2 for the third. These systems of internal distribution do not apply where

Page 354 (paragraph 23), line 14.—After " lies to " insert " the Commissioner and, subsequently, to."

Page 354 (paragraph 23), line 38.—Cancel " often" and substitute " occasionally, and in the past was often."

fluctuating assessments are adopted. With these the sanctioned assessments are in the forms of rate per acre sown or matured, and these rates are applied to the actual area of each harvest. With the exception however, of the fluctuating assessment, the settlement officer almost invariably accepts the distribution made by the village unless any group or any individual objects. Should there be any objection he enquires into the matter and endeavours to effect an agreement by mutual consent. In the last resort, if the people cannot agree, he himself fixes the assessment and his orders are open to appeal.

III.—The Collection of Revenue.

24. The year of assessment begins on the 1st October. During September an Annual Demand Statement is prepared in the Tahsil and District Offices for each estate or village. The tahsil copy has to be checked with the district office copy and returned before the 1st October. The Patwari about the same time prepares the annual demand statement for the village, the *farad dhal bachh*. After the kharif harvest this statement is made over to the headman for collection and a fresh statement is prepared after the rabi harvest. The demand may contain a fluctuating element. If so this fluctuating portion may be assessed either by the canal patwari, or subject to the orders of the Deputy Commissioner, by the village patwari. The water rate assessed by the canal patwari is entered by the village patwari in the demand statement until the orders of the Deputy Commissioner have been received. This is the procedure also with regard to the water advantage revenue, assessed by the canal patwari, and also with fluctuating chahi and barani if assessed by the canal surveyor. The headman collects the revenue according to the amount entered in the demand statement. For every payment he makes or is supposed to make an entry in a Receipt Book maintained by the cultivator, but the entries in these receipt books are understood not to be made very regularly and the specimen examined, although apparently complete, was certainly not very clear. The cultivator receives no certain intimation of the amount due excepting in the case of fluctuating assessments by the canal patwari; for such items he receives a tax ticket showing the crop grown, the rate per acre, the area under crop and the total water rate. Apparently, except for this item, the headman merely tells the cultivator how much is due and the cultivator pays up and obtains an entry in his receipt book. As regards the fixed portion of the demand each land owner is supplied at measurement with a *parcha*, a statement showing the area of his land and its classification, and at the distribution should receive a paper showing the old and new assessments. These *parchas* remain unaltered between settlements, even though there may be changes in the holdings. The settlement officer should also publish the distribution by preparing a record showing full details of which one copy is given to the headman and one to the patwari. If the assessment is fluctuating a similar statement, showing the area, rates, previous and current demands for land revenue and cess, has to be published in the same manner every year.

25. The headman is personally liable for the revenue and a reduction is made from his commission if it is not paid punctually in full. He therefore ordinarily pays up the full demand and applies to the tahsildar for assistance in recovering outstandings from defaulters. The tahsildar thereupon issues a writ or notice of demand directing the defaulters to pay up by a certain date. If this notice is not complied with the defaulter is liable to arrest and may be confined in the Court Lock-up for 10 days, but if detention for over 24 hours is necessary the matter must be reported to the Deputy Commissioner. No order for the attachment of property can issue without sanction from the Deputy Commissioner. In the first place action is taken against moveable property and only after this has proved infructuous is action taken against the land which is the subject of default. When land is attached it may either be transferred to another person in the village on payment of revenue and such premium as is thought necessary, or it may be sold. But in practice it rarely happens that action has to be taken against land at all and it is rarer still to proceed beyond attachment. In Dipalpur Tahsil last year 50 warrants of arrest were issued but only one man was actually arrested, and there were only five attachments of moveable property.

Revenue may be paid by Revenue Money Order through the post; these orders, however, may not be issued to anyone but the headman, although it would seem that absentees and defaulters may pay revenue by money order. This is placed on deposit and paid out to the headman when he next attends at the tahsil headquarters.

26. One feature of the procedure for collecting revenue that deserves attention is the control over fluctuating assessments (except those assessed by the Canal Surveyor). Demand statements are submitted after each harvest to the Commissioner and Financial Commissioner for scrutiny. The object of this precaution is to ensure that the revenue annually collected approximately corresponds with the estimate framed by the settlement officer.

Scrutiny of fluctuating assessments.

IV.—Land Records.

27. The Record of Rights in the Punjab is a standing record compiled at settlement. It comprises the following documents:—

- (i) An opening proceeding giving the authority for the record a list of documents comprised, etc.
- (ii) A field map.
- (iii) A genealogical tree (the Shajra Nasb).
- (iv) A register of holdings, occupancy and assessments (the Jamabandi).
- (v) A list of revenue assignments and pensions.
- (vi) A statement of rights in wells.
- (vii) A statement of rights in irrigation, if any, from other sources.
- (viii) A statement of village rights and customs (Wajib-al-arz).
- (ix) The order determining the assessment.
- (x) The order distributing the assessment.

On the basis of this Standing Record a quadrennial edition is prepared consisting of the Jamabandi, the list of assignments and pensions, and the field map corrected up to date ; although known as the annual record it is only prepared every fourth year. The following paragraphs describe first the preparation of the standing record of rights at settlement and re-settlement, and secondly the maintenance of the annual records.

28. The correction of the record is referred to in settlement. Measurement. procedure as "measurement"; as above mentioned it is one of the two main branches of work in the first stage of settlement operations. The object of measurement is to record the area, classification, occupant and owner of each survey field.

A survey number is a single parcel of land separately occupied which should not be too large for harvest inspection purposes. Every parcel separately owned by one individual or jointly by a group is given a separate survey number, as also is every parcel separately occupied, even although held of the same owner ; where any such parcel greatly exceeds one acre a separate survey will ordinarily be given for each acre which it covers. The boundaries of survey numbers follow cultivation ridges or occupancy limits. But where a single parcel, separately occupied although not exceeding one acre, is subdivided by cultivation ridges, which divide the property into portions smaller than one acre, these ridges will not be surveyed nor plotted. (Financial Commissioner's Standing Order No. 16.)

Measurement thus comprises three processes :—

- (a) The registration of owners.
- (b) The registration of occupancies.
- (c) The classification and survey of land.

29. A Register of Owners is compiled by the patwari in the form of a genealogical tree (Shajra Nasb) of all people with a proprietary right in the village. At original settlement the genealogical tree traces back their rights for three generations or, if possible, to their common ancestor. At revision settlement it traces them back to their predecessors in interest at the previous settlement. If the record at the time of revision settlement is incorrect owing to non-report of a mutation the necessary correction will be made in the mutation register before the new Shajra Nasb is prepared ; in the event of a dispute the entry will be made after summary local enquiry and usually will follow possession. As already mentioned there is no system of registration of titles in the strict sense of the term. The entry of a right is a record of presumptive evidence not a complete title. Conventional symbols are used to distinguish the lambaridar, absentees, females, and people who are deceased. Where a son holds a share separately from his father's share the name of the son is entered in red ink. The patwari then requires then each owner of land to furnish detailed information regarding its occupancy and all rights in it. For each separate occupancy he prepared in duplicate a khatauni slip, numbered serially, showing the names of the owner and tenant, the number and name of the field or fields, the name of the well or other source of irrigation, the area and class of land ; the rent, sales, and mortgages with possession,

are shown as in the record of rights, mortgages without possession are not usually shown. In revision settlements the khatauni slip gives a reference to the last jamabandi number, the former number and name of the field, and the number in the mutation register. Certain of the foregoing entries can only be made after measurement but the slips are filled in so far as possible and copies (*parchas*) distributed to the owners and occupants; each owner, mortgagee and tenant receiving a *parcha* for each parcel of land held.

The patwari then proceeds to measure and plot each field. He numbers it, enters each number on the Shajra Kishtwa, works out the area, classifies it, informs the owner and cultivator of the result, and considers their objections, if any. He then writes up the Field Book which shows the number of the field, the former number, if any, the number of the khatauni and the area, and also completes the entries in the khatauni. Village-sites and roads are also measured; if any road has no distinct bound it may be taken as 3 kadam (about 16 feet) wide, if it shifts from year to year a note should be made in the khatauni against each field it crosses. Village-sites, roads, etc., are distinctly coloured in the village map. Three copies of the village map, which is usually on the scale of 220 feet to the inch or 24 inches to the mile, are prepared. One (on cloth) is for the use of Patwari in crop inspection, one for tahsildar office, is and one for the district office. A fourth copy is also prepared for the irrigation department in canal areas, and also copies for any other department or local body concerned.

After these records have been checked and finally passed the patwari prepares the jamabandi or register of the holdings of owners and tenants showing the fields comprised in each, the revenue for which each owner is responsible, and the rent payable by each tenant. This is in the same form as the annual jamabandi, with the addition of a column to show the former field number. At the same time the patwari prepares a list of revenue assignments and pensions, a statement of rights in wells, and other sources of irrigation, and a statement of custom respecting rights and liabilities on the estate (the *wajib-al-arz*.)

These proceedings and documents are inspected by the kanungo, naib-tahsildar and tahsildar. The kanungo and naib-tahsildar are expected to verify every khatauni and the tahsildar 25 per cent. of them.

Settlement officers are particularly enjoined to bear in mind that their record work is of even more importance to the welfare of the people than the assessment, and not to sacrifice the accuracy of the record merely for the convenience of their assessment work.

30. The basis of the annual record is the jamabandi prepared at settlement. For many years an attempt was made to compile an annual record embodying all mutations but this was found impossible and, after an unsuccessful attempt to abbreviate the jamabandi, it was decided that the annual record should only be prepared anew every fourth year. The villages of each tahsil have accordingly been divided into four groups, if a patwari has four villages, each of these would be placed for this purpose in a different group.

Page 359, line 19.—Cancel "The plan of the mutation" and substitute "In mutations affecting the survey a plan of the area involved."

Mutations fall under two heads:—

(a) Those affecting rights, which may or may not affect the survey, e.g., sales, partitions, and

(b) Those affecting survey without affecting rights.

Landowners, mortgagees and occupancy tenants are required under penalty to report to the patwari any right acquired. These are entered by the patwari in the register of mutations and should be publically notified in the village, but this is not done in practice. The patwari is also required to ascertain and record (in his Harvest Inspection Book) undisputed changes of tenants at will. All other changes are reported through the kanungo to the revenue officer (usually a naib-tahsildar) competent to sanction and attest the mutation. Every year it is found necessary in some districts to sanction one or more extra naib-tahsildars for attesting these mutations; thus much of the work is done by officers of small standing and little practical experience and must be done rapidly. "These are matters of reflection considering that each Jamabandi now possesses the same authority as a record of rights drawn up at settlement."

The plan of the mutation is entered on the back of the entry in the mutation register, the new lines being shown in red ink. The area calculations are also shown on the back of the sheet. The measurements are recorded and must be checked by the kanungo; the attesting officer only sees that the plan is drawn to scale. One copy of the report and of the plan is retained by the patwari.

The attesting officer is required to take special precautions that no order affecting the share of any right holder is passed without his having an opportunity to appear. His order should show on the face of it the date, the place where it was passed, which ought to be either the village concern or somewhere quite close, that all parties interested were present or that an absentee had an opportunity to attend and that interrogatories have issued. No mutation may be incorporated in a jamabandi until it has been duly attested and special efforts are therefore required every fourth year to complete the mutations. (In Lahore 118,928 mutations were effected during settlement as compared with a total of 208,003 during the previous 20 years.)

Mutations not affecting rights are distinguished in the Harvest Inspection Book by a red cross. Every fourth year the kanungo compiles a list of these fields which is made over to the patwari for the preparation of a supplementary map, a small extract from the settlement map to be filed in the Jamabandi. Every fourth year when the new jamabandi is prepared, the patwari brings the village map up to date. He files the original map in the tahsil office and takes a tracing of it on which he proceeds to work as above.

31. The records prepared by settlement officers and maintained by the land records establishment provide detailed, and generally up to date, information regarding the ownership, occupancy and produce of agricultural land. Statistics are annually published showing for the province as a whole and for each district the area of land owned by agricultural tribes

1. Land Revenue Administration Manual, paragraph 530.
2. Final Report on the Settlement of the Lahore District, 1916, paragraph 32.

and others, the areas of land transferred by sale, mortgage or otherwise, and the area of land rented. The value of land as evidenced by sales and mortgages is also calculated but no figures are published to show rental values, nor the duration of tenancies. It is considered by the Director of Land Records that the "checking of annual records is not so careful as it should be, that the instructions regarding the annual testing of the work of field Kanungos are not being duly observed, that a sufficient supervision is not exercised over Kanungos by the superior officers, and that the diaries of district Kanungos are not examined with sufficient care", but that while there is considerable room for improvement the revenue records are on the whole maintained in a satisfactory state.

V.—Survey and Miscellaneous.

32. The fixed demand remains unaltered from one settlement to the next except for the disturbing factors of diluvion and the protection of new wells, and in areas of fluctuating assessment; thus the revenue is not affected by neglect in maintaining the survey. Formerly maintenance was considered waste of money and the survey was left unaltered until the re-settlement, but for many years the alternative policy has been adopted and endeavours have been made to maintain the survey in such condition that at re-settlement, re measurement will prove unnecessary. This goal appears to have been obtained in some, but by no means in all, districts.

The method of survey or resurvey is as follows. A base line of 200 kadams (double paces) is laid down, accurately measured, surveyed, plotted on a map and permanently demarcated. (The kadam or pace varies in different districts from 60 to 75 inches but 66 is regarded as the standard. On this is built up a square with sides of 200 kadams. This is plotted on a mapping sheet on a plane table. On each side of this another square is laid down and plotted and so on until the village lands are divided into blocks of 200 kadams square. Only the base line of the first square is permanently demarcated, the angles of the others are temporarily fixed with pegs until the survey is completed. When the villages were first laid out the trijunctions were demarcated and the trijunction stones are shown in the trigonometrical survey of the Survey of India. The position of these trijunction marks relative to the square is determined by survey and their position relative to one another can be calculated. The distances between each pair of marks as calculated are compared in the settlement office; if the figures are approximately correct, the survey squares can be accepted as accurate, if there is any serious discrepancy between the distances as calculated on the basis of the squares and as given by the Survey of India the laying out of the squares must be verified and if necessary corrected. On the basis of these squares the boundaries of these squares and the boundaries of the village and interior details are then surveyed and plotted as described above in connection with measurement.

33. There are two Financial Commissioners. The Financial Revenue organization Commissioner who has most experience of settlement work takes charge of Land Revenue, Settlement and Land Records. This arrangement dates from 1910 when the appointment of Settlement Commissioner, which had existed since 1897, was abolished. The Financial Commissioner is in general control, through Commissioners and Deputy Commissioners, of the divisional and district revenue administration, and through the Director of Land Records controls the administration of the land records department. He is in immediate control of settlement.

There are five Divisional Commissioners, and subordinate to them are 29 Deputy Commissioners. Below the Deputy Commissioner are Assistant or Extra Assistant Commissioners who are usually grouped at Headquarters but often reside at outstations in charge of subdivisions. One Assistant Commissioner, ordinarily drawn from the provincial service, is the Revenue Assistant and is entirely or principally occupied with the land revenue which he administers on behalf of the Deputy Commissioner; but Subdivisional Officers are usually the Revenue Assistants of their own subdivision. The district is divided into tahsils (townships) each under a tahsildar (township officer) charged with the revenue and magisterial administration of the tahsil. A tahsildar is assisted by one or more naib-tahsildars who ordinarily perform such duties as the tahsildar assigns to them but are usually allotted a definite part of the tahsil. The rule is for the tahsil to be divided into circles, the tahsildar taking charge of one (and general supervision of all) and the naib or the naibs taking the remainder: they are supposed to change circles every harvest.

The unit of revenue administration is the estate (mahal) usually identical with the village (mauza). These are grouped under zaildars (group headman) paid by Government out of the land revenue, about 1 per cent. of which is allotted for the purpose, and each village is represented by one or more (sometimes by many) lambardars (village headman) paid by a cess of 5 per cent. on the land revenue.

34. The Director of Land Records is appointed to assist Divisional Commissioners and Deputy Commissioners in maintaining the record of rights and revenue registers and to advise the Divisional Commissioners and Local Government. His principal duties are supervision of the district land records staff in connection with the preparation and maintenance of the records and subsidiary registers; he controls the measurement operations of settlement, and supplies the additional staff required in a district during settlement, but has no connection with the assessment work of settlement. The Director of Land Records is also Inspector-General of Registration. He has two personal assistants. The province is divided into two circles; and each personal assistant supervises both the land records and registration work of the circle in his charge.

In each district there is a district kanungo (revenue inspector), for each tahsil an office kanungo and three to five field kanungos. Each field kanungo is in charge of about 20 patwaris (village registrars), one for every four or five villages or possibly two to a

village. Hitherto the patwaris have drawn Rs. 12 to Rs. 16 a month, the field kanungos Rs. 35 to Rs. 40 with a horse allowance of Rs. 5 to Rs. 10, the tahsil office kanungo has drawn Rs. 50 and the district kanungo Rs. 75— $\frac{1}{2}$ —100. Under a revised scale of pay recently sanctioned the patwaris will draw Rs. 22 to Rs. 26, the pay of the field kanungos remains unaltered but the horse allowance will be raised to Rs. 20, and the pay of the tahsil and district office kanungos be raised by Rs. 10. The provision of office and house accommodation for patwaris has been sanctioned and the constructions of these buildings is now being systematically taken into hand. Patwaris also receive a proportion of the fees charged on mutations.

During settlement operations some of the duties and responsibilities of the Collector are made over to the settlement officer, including the appointment and removal of headmen, and suspension or dismissal of kanungos and patwaris and all business connected with records, assessments, surveys, boundaries and partitions.

35. Candidates for the post of patwari are only eligible if they have passed the Middle School Final, unless they have special hereditary claims as sons of a patwari or of an agriculturist. Before joining the patwari school the candidate must attend the rabi crop inspection (girdawari). He then enters the school opened annually from time to time in each district from 1st April to end of August. If successful at the August examination the candidate may attend kharif crop inspection and after this is entitled to a pass certificate; the rules however are not always strictly observed. He may spend about three years in the reserve, occasionally officiating, and finally is selected for a permanent appointment. Some draw pay as assistant reservists on Rs. 7 or 8 during this period. Two-thirds of the kanungos are promoted patwaris; they may also become tahsil revenue accountants. The patwari is required to live in the *patwar-khana* if habitable, but this is rarely the case. The work of the Patwari comprises Registration of the crops; maintenance of Records of Rights, writing up statistical registers, reporting calamities, outbreak of infectious diseases, encroachments, deaths of pensioners emigration and immigration and assisting in collection of revenue by preparing the *fard dhal bakh* and preparing receipts. Also the census of men and beast, electoral rolls, and much miscellaneous work connected with transport registration, recruiting, etc.

One-third of the kanungoes are men below 25 who have passed the Entrance examination; two-thirds are promoted patwaris. Those recruited by direct appointment serve two years as patwaris or apprentices and then sit for an examination held by Director of Land Records. They are eligible for promotion to naib-tahsildar and tahsildar. During settlement the kanungos work under the settlement officer, who also employs additional settlement kanungos.

All naib-tahsildars and tahsildars start their training with a period of 9 or 10 months in the settlement department during which they work first as patwari and then as kanungo. Assistant and Extra Assistant Commissioners are trained on similar lines.

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