

446. I have been asked to make some proposals for the assessment of land outside the settled area. This falls into different classes. First there is the island of Kyungyi in the Irrawaddy just below the extreme south-east corner of Tract 12 in Map III, and paying now Rs. 1.75 per acre. I endeavoured to classify this but the survey could not be finished in time. It belongs chiefly to the second and third classes of Tract 23 and might be divided into two classes rated accordingly. Then there is the new cultivation in the space south of Tracts 25 and 26 and bounded on the west by the Ywe River and on the east by the Kakayan and Pyanmalaw and Pyinzalu Rivers. This area has much salt water, is supporting the cost of jungle-clearing, suffers from the ravages of animals, and gets a price varying from that of Tract 26 to Rs. 15 less. I consider that if it cannot be left unassessed until a settlement is effected a rate of Rs. 1.50 per acre is sufficient. Some of the land towards the sea is higher and out of reach of floods, but being so distant its price is low. The next area is a small patch known as Kyetsha lying to the east of the Pyinzalu River. For this a rate of Rs. 1.25 is ample, although the present rate is either Rs. 1.75 or 2.19. (It is understood that Kyetsha is not included in the area which is about to be brought under supplementary survey and settled within a few years.) Finally there are the *taungyas* upon the domes of Myaungmya Township. Some of these are within the settlement area and have been counted under Y main-kind in Statement 19 as they are assessed at present as "Miscellaneous." They are cultivated with miscellaneous vegetables for only a year and are then abandoned. One would like to propose assessing these as *taungyas* without surveying them, but the area seem to vary largely in different parts. The areas given by surveyors are however unreliable—the smallest *taungya* in a village-tract often pays most revenue. If the Land Records Department could supervise the survey of these one season and get a correct statement of them it might be possible to fix, by circles or tracts, a flat rate per *taungya* to be applied without surveying. In some cases the clearing develops of its own accord into a *danyin* garden but then it would be brought on to the map and assessed regularly. Meanwhile the present rate of two rupees and three annas per acre applied to all except six acres (which pay Rs. 2.5 per acre) might be changed to Rs. 2.

447. The assessment of solitary trees outside the area of supplementary survey is open to special objections because it cannot be supervised) even if those within that area are taxed, as the latter are to be free this assessment should now be stopped.

RANGOON, 19th November 1919

S. GRANTHAM,  
Settlement Officer, No. 2 Party.

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**APPENDICES**

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# APPENDICES

## APPENDIX A.

### A NOTE UPON PADDY PRICES.

#### *Part I.—Introduction.*

1. It is commonly assumed that if the two methods of price determination mentioned at the beginning of Chapter X were correctly applied to reliable records—that is records sufficiently reliable for averages based upon them to be accepted—they should lead to the same result, and this assumption appears to underlie the Settlement Instructions. But it is important to observe that the results obtained represent different concepts. Deduction from the price at the central export market gives for each tract a figure representing what would have been the average of the local prices, if throughout the twenty years considered (1) the difference between that price and the price at the export market had been constant, and (2) the average prices at the export market had represented paddy of the same kind and quality as is now produced and (3) that same kind and quality (or a kind and quality of equal price) had continuously been produced by the local area considered. Method (b) gives for each tract a figure representing the average price actually received as a result of the variations of these conditions. The variations may be unimportant in the averages either because they are small or because they neutralize each other, but it is not permissible to assume that they are unimportant without enquiry, and such an enquiry is necessary to comply with Settlement Instruction 228 which requires a comparison of the results of the two methods to be made and any divergence explained. The Instruction specifies *marked* divergence, but, as the results of the two methods cannot be accepted with confidence as confirming each other if a small net divergence or even exact agreement is really the resultant of two large divergences in opposite directions, the conditions affecting each method have to be considered in every case in which it is applied. There is no justification for the common practice of claiming mutual support for the two estimates when they happen to yield approximately the same result unless it is shown that the concepts embodied in the figures in the particular area are similar. In the following notes it is proposed to indicate the most important of the considerations underlying the rejection in the report of the simple and direct application of both the standard methods of price-determination in the particular area concerned.

#### *Part II—The Central Market as Basis.*

2. The *Burma Gazette* now gives every week two separate reports of the price of paddy. One report (published by the Development Department) has only been given since 1918 and gives no help in studying the market for the past twenty years. The other report is that in which the Commissioner of Settlements and Land Records publishes the prices reported by all the districts in Burma. No indication is given in this report of the kind or quality of paddy represented by the figures for Rangoon, Bassein or any other market.

Commonly supplementary figures for "rail" or "boat" are given in the remarks column for Rangoon, but the principal figures are not explained. They are based upon figures supplied to the Deputy Commissioner by Messrs Morrison of Rangoon and appear to be generally, during the first three months of the year, the average between the lowest "rail" and the highest "boat" price. But again it is to be noted that not all the paddy which reaches Rangoon by rail is classified as "rail" paddy, some of that which travels on the Prom line is paid for at the "boat" price. Similarly it happens that some paddy coming by boat from the delta is paid at "rail" price. All kinds of paddy sent from Myaungmya District to Rangoon are classed now as *ngasein* or *midon*, but the nomenclature and the content of terms has varied. The term *ngasein* has meant different things at different times in the last twenty years. "Rail" used to mean *ngakyauk*, which covered the hard light paddies of low milling quality and with much red grain received from along the Mandalay railway line. Until recently paddies from the neighbourhood of Kanbè (Primary Tracts 24, 25, 26) and a few other parts of the settlement area were classed as *ngakyauk* on account of their large proportion of red grain; but there is no rail paddy sent now, and the *Burma Gazette* price in the later years, being influenced by "rail" prices, is therefore irrelevant. The price quoted by Messrs Morrison for "boat" paddy is for *ngaseins* which have only a very small proportion of red grains or for *midon*. All paddies from the settlement area of long thin grain are classed now as *ngasein* and all of short thick round grains as *midon*. *Midon* is entirely free from red grain and includes all varieties of *kaukgyi* and some of *kauklat*, such as *ngaseinbilu*, *yosein*, *kalogyi*, but the term *kaukgyi* is used for it by all local dealers without regard to the life period of the paddies. A pure white *ngasein* may receive Rs. 3 more than an ordinary *ngasein*, small millers sometimes increasing this difference to Rs. 5. A *midon* may receive a further Rs. 2 or Rs. 3. But these differences depend upon the varying demands in the different markets which buy the different kinds. "Mixed paddy"—that is, a mixture of kinds classed as *ngasein* with kinds classed as *kaukgyi*—is known to

local dealers as *apyu* or *bawsein*. In some parts *bawsein* gets *ngasein* price; in others if the proportion of *ngasein* is below 20 per cent it gets an intermediate price. Thus the prices quoted by Messrs. Morrison for "boat paddy" now represent approximately the prices obtained by much of the settlement area though there is variation within a range of about five or eight rupees. All the prices discussed here are "nominal prices" in terms of nine-gallon baskets and are subject to the allowance for specific gravity and modification for the condition of the grain.

For Bassein the price quoted in the *Burma Gazette* is, in the words of a Deputy Commissioner of Bassein, that "which on enquiry by the officials responsible for the preparation of the reports would represent the state of the market as affecting the producers or cultivators. . . . Enquiries made indicate that *ngasein*, *ngakyaw* and *latywasin* form the bulk of the paddies represented." This is not so reassuring as the Deputy Commissioner intended. The price should be reported more accurately at Bassein than at Myaungmya (see paragraph 18 below) because of the greater ease there in enquiring directly from brokers in the town, but there is excuse for a little hesitation before accepting the reports implicitly if one has any knowledge of the methods of subordinate "officials responsible" in such small and apparently unimportant items of their duties. The kinds of paddy represented have probably been much the same for many years. The prices quoted for 1908 and subsequent years in Bassein have been nominal prices to which allowances have been added on the same lines as at Rangoon; and by direct enquiry from millers I have learned that this nominal price given for undamaged paddy from Myaungmya District has been the same as that for paddy received either by boat or by rail from Bassein District. Up to and including 1907 there was no allowance for weight; the measure used was "a square mouthed box with a capacity of about nine gallons." This is a miller's description, but brokers in the villages talk of different measures being used according to the apparent quality of the paddy. They speak of a *nga-pyi* (ငါးပိ) basket which was a cube of 15 inches and a *nga-mat-tin* (ငါးမာတိန်) which was a cube of 14½ inches and also *le-gwe* (လှေခွေ) which was a cube of 14¼ inches. Measurement in the largest instead of the smallest of these would be equivalent to a reduction of ten per cent. in the price, but there is no means of determining to which measure the recorded prices relate, even if one could learn with certainty which basket was generally used for the paddy from any particular tract. The Deputy Commissioner of Bassein moreover admitted that the figures were liable to error through deliberate misstatement by millers for reasons connected with mutual competition. If, however, to meet this, sellers were consulted as well as millers, it is unlikely that in the first few years after the introduction of the new system nominal prices were correctly recorded; there will certainly have been confusion between nominal and corrected prices and mistaken additions and subtractions in consequence. There is thus considerable vagueness about the meaning of the prices recorded for Bassein in the early years before 1907 and room for scepticism all through. Hence their rejection in Chapter X. For later years the figures may be correct, but these are chiefly the years of abnormal conditions.

3. The average prices received by three areas similarly circumstanced in other respects but selling only in January or in February or in March respectively will be quite different. An average of the prices over the whole three months would be quite irrelevant to any of them. The intention of prescribing the first three months of the year as the period in which prices should be averaged was doubtlessly to confine the period to the time of harvest at which most cultivators sell their crop. But this intention would be frustrated by taking a three months' average in the area of the present discussion. No part of the area sells any considerable part of its crop in January, the crop of the greater part is sold in February and the first half of March. Thus the average price for this part should be based on the prices of the fifth to the tenth weeks of the year inclusive. Even so the matter is not settled because some tracts in the south sell later, and for their averages different periods must be taken if equitable treatment is to be achieved. It is perhaps desirable to observe that, even in the tracts for which February and March prices are proposed as a basis, there is a great deal of paddy sold in April or even in May and up to August; but it is not sold then by cultivators. The cargoes taken then are purchased from dealers who bought from cultivators at the ruling price earlier in the season.

4. The millers in Rangoon and Bassein take frequent samples of every consignment of paddy brought to them while it is being unloaded into the mill. Each sample is a standard basket and the average weight of the samples in pounds, calculated to the nearest tenth, is taken to represent the specific gravity of the consignment. Excess of the specific gravity above 40 is recognised by adding 2½ per cent. per unit excess to the actual measurement of the paddy and calculating the value accordingly; this is equivalent to applying to the actual measurements a price increased by 2½ per cent. per unit excess of specific gravity. For any given locality the recorded price in Rangoon must be increased by this allowance before middlemen's deductions are made in order to determine the price received by the cultivator. If the



price at Rangoon or Bassein is to be taken as a basis a figure must therefore be determined to represent the specific gravity of the paddy in each assessment tract. It is customary for the settlement party to weigh a sample of paddy in every kwin and to take the average of the weights observed. But this is unsatisfactory. The specific gravity of a particular sample of paddy does not perhaps vary to any sensible extent as the season goes on. But if the weighments are not made at the time when selling is in full swing the samples readily available may not be samples of the kind of paddy which is sold. Many tracts at the end of the settlement party's season can only offer samples of the *kaukgyi* kept for home consumption and grown in the low-lying classes of soils which produce a chaffy crop. At the beginning of the season the difficulty is even greater. In this settlement an attempt was made to exclude from the experiments all kinds not commonly sold, but with the actual settlement staffs and under the actual conditions it is difficult to obtain a representative selection of the kinds that are sold. This error would vanish if the commonest kind in each kwin were weighed, but the weigher can hardly be prevented from weighing that stored in the particular house in which he is lodging. Usually, however, this last error is probably small for the tracts treated in the selling season, especially if, as in the present operations, three samples are weighed in each kwin and the weights tabulated according to the variety of paddy. Further, all the difficulties mentioned can be met by proper organisation of suitable agents leading to proper selection of samples at the proper time. Mr Duffin avoided most of them in his settlement of a part of the district in 1910-12 but he had less than half the task of the present settlement and had a European Assistant. And the trouble is not worth while, because the variations from season to season have still to be considered. These variations are not necessarily uniform in any season throughout a tract, because the cultivators of one kwin by starting earlier or later than those of another will have managed to fit in more or less well with the vagaries of the monsoon. Neither are the average variations necessarily equal from tract to tract because the physical differences of tracts give different reactions to the differences of seasons. The distribution of the fields amongst the soil-classes is also a factor. One must enquire for the average variation of each individual tract in the year of experiment from a normal year, and in obtaining this information from the local brokers one can learn also directly the average specific gravity in a normal year of the paddy which is generally sold as determined by men to whom a quarter-pound more or less means their whole year's income.

5. Moreover it is impossible to base the price-tracting upon the weights recorded by the settlement party. These may show vaguely that towards, say, the north paddy tends to be light and towards the south heavy. But no particular kwin near the middle could be assigned on the basis of the experiments in it to either tract. The mere fact that the sample of paddy weighed in one kwin is light is no reason for putting that kwin into a tract of light paddy; the sample may be a light sample which is a regular deviation from the average within the heavy tract. Even if a sample from every holding were taken the deviation might be local and seasonal. For tracting by specific gravity again recourse must be had to enquiries from local cultivators and from local dealers whose experience has led them to integrate correctly though unconsciously all the variations which occur. Having formed the tracts the averages determined by the settlement party's weighings can be used as a check upon the weights stated by the brokers. But they are more useful as indicating by their relation to their normal the character in each tract of the season, and so aiding in the discussion of variations from normal yields.

6. It is to be observed in this connection that the price received by each individual cultivator is not calculated according to the gravity of his particular heap of paddy. The buyers recognise a standard for the neighbourhood for the year, and within comparatively wide limits pay a uniform price to all cultivators (at a given time) whether their paddy is heavier or lighter than the standard. In some tracts the rule is rather to pay a uniform price to all paddy which does not fall below the standard; but this difference is merely a difference in the adjustment of the standard. In some cases the standard is determined by weighing baskets of paddy, in some cases by weighing milk-tin-fuls in terms of rupees; the general quality is considered because it affects the dryage on the journey to Rangoon or Bassein and the price commanded there; and finally the actual weights allowed by the millers for each barge load are studied. The dealers sometimes assign a kwin to a lighter or heavier tract than actual weighments would warrant on account of some consideration of the cost of transport, colour, hardness or other quality of the grain, or even competition from other buying centres; but the corresponding variations of price are suitably represented in price-tracting by the comparative method.

Care must be had with regard to the purchase of paddy received by landlords for rent or by money lenders as this is generally more chaffy and therefore lighter than the other paddy sold and may also consist of inferior varieties. But as it is generally sold at a different season, being stored for the rise of price which occurs in the rains, there is generally little difficulty.

7. It should also be borne in mind that the normal specific gravity of the paddy of a particular locality has not necessarily remained constant for the last twenty years. On the contrary very considerable changes have occurred in many parts of the settlement area.

Such change may arise from changes in the variety of paddy grown, or from the natural variations of a particular variety which constantly occur in response to local conditions although the cultivator is quite unconscious of the change and believes he is using the same variety as before because his seed is a lineal descendant of his former seed. In other cases changes of custom in cultivation, such as the substitution of transplanting for broadcasting, which may be due either to physical or to economic or even to administrative causes, may modify the specific gravity of the particular variety of grain produced or lead to the use of a different variety. The change of variety may be a change between different kinds of *ngasein* or of *kaukgyi* or a change from one of these great classes to the other. The outstanding cause of a change of specific gravity is the gradual increase with the age of the cultivation due to the smaller amount of chaff produced when the land has settled down. The greater part of the land in which cultivation began after 1889 (and some in which it began before) has either passed the point of inflexion of its development-curve in its approach to the asymptote during the last twenty years or (and this is the case of a considerable area) has not yet reached that point but is still descending rapidly towards it; this area includes nearly the whole of Mr. MacKenna's settlement area and a large part of Mr. Lowry's area. This is not yet true of a considerable area of third class land in the latter case and of a certain amount in the former because of the large deposits of silt received; but as these are exactly the areas of smallest yield they do little to mask the effect of the corresponding change in the gravity of the total yield.

8. The price paid by brokers for paddy is not determined solely by the addition of a specific gravity allowance to the nominal price for the variety; other qualities considered are the presence of red grains, awns, chaffiness, a uniform and satisfactory degree of ripeness, evidences of exposure to dampness such as yellowing of the grain or discolouration of the husk by mud or mildew, or damage by exposure to the sun. Undue exposure to the hot sun causes the grains to break in milling; the rice from damped grain not only breaks but tends to "heat." As examples of the effect of these conditions may be quoted the paddy from the Kanbè area (Primary Tracts 24 to 26) which until the recent substitution there of *kaukgyi* varieties for *ngasein* had a reputation for including a large amount of red grain and suffered a loss of 10 per cent. in price in consequence. The low fishery-tract in the north of Mawlamyaingyun (Primary Tract 18) still suffers a five per cent. reduction of price because its paddy is splashed with mud. The conditions mentioned in the preceding paragraph as causing temporal changes in specific gravity should also be noted as operating to cause other changes in the quality and therefore price of the paddy ordinarily produced in any one tract.

9. The quantity of paddy available at a given place has an effect upon the price there. It is clear at once that, other things being equal, the buyers will have greater expenses in localities in which they collect a cargo in numerous small instalments than in a locality in which a full cargo can be obtained at one landing place, or at most in two or three instalments, owing to the saving of time, which, as has been already noted, involves a saving of "overhead" expenses as well as of the specific costs of the barges. Besides that there is the effect upon competition. Large supplies attract many purchasers who by mutual competition raise the price. If the low prices given in a locality of small supplies attract a Rangoon dealer to go and overbid he is likely to find both that the sellers know that he will lose if he departs without a cargo and can therefore be subjected to haggling, and that men of local knowledge have so forestalled him that he cannot get a full cargo in any reasonable time; knowledge that these risks exist prevents him trying the experiment, and the degree of competition in such a locality is consequently low. The "quantity available" which affects the price may be the quantity of a particular variety, other *kaukgyi* or *ngasein* or the quantity of both together, according to the local custom of mixing these or keeping them separate in transport. The effect on price may be shown in the preference of cultivators for one or other kind of paddy to the exclusion of other kinds even when these would give larger yields or in more favourable localities would secure better prices; thus *ngasein* is grown in land more suited to *kaukgyi* in one place and in another *kaukgyi* in land more suited to *ngasein*. In the greater part of Wakèma Township the market is organised for *bawsein*, and no extra price is given for *kaukgyi*; but in Mawlamyaingyun Township the market is organised for *kaukgyi* which therefore gets a higher price than paddy of the same quality in Wakèma although at the same time *ngasein* gets a lower price than in Wakèma.

The term "quantity available" must be understood in relation both to the time occupied in loading it and in the ease of finding sellers. The latter because it affects the cost of the broker's agents included in the "overhead" expenses. The former because it is not necessary for all the cargo to be obtained at one landing place; although that is convenient, it is only necessary that the time occupied in getting the whole cargo should not exceed considerably the number of tides it covers in that case.

10. Generally when barges have to traverse a creek too small to permit the sails to be hoisted and have therefore to be rowed the price all along the creek is reduced by five rupees on account of the delay caused thereby and the expense of tips to the crew for the extra work. If a fairly plentiful supply of paddy is not forthcoming there will be still further reduction because on the one hand the buyers' expenses are still further increased and on the other hand their competition is diminished, and if the supply is very small it may pay the sellers better to sell to some local dealer who collects at a more accessible centre, although they thus suffer the double cost of handling and the double middleman's profit. If the narrow passage leads on to an area of large supplies or easily navigated wide rivers there may be enough competition amongst the numerous barges to keep the price up. But if the narrow creek has only the one navigable outlet this can never be the case, and since even for a journey of a few yards from the mouth the only alternative is the double handling of loading and unloading small boats the defect of price appears at once on entering such a creek. It may happen that the empty barge coming from Rangoon arrives at the mouth of the creek at low tide and must wait for water to enter. When loading at one wharf is complete it may have to wait for another tide to move again. Perhaps the coolies will hurry to load quickly and catch the tide—but that has to be paid for too. When the barge leaves it may find an adverse tide again at the mouth of the creek and suffer more delay. Until all these details are clearly visualised it is impossible to appreciate the suddenness with which prices change in these creeks. The cultivators can sometimes meet the case by making their threshing floors near the bank of the main river, or by transporting the sale-paddy in their own carts and with their own labour, but small water-channels may make the latter method expensive and leave them the only alternative of reduced price, while the former method may involve other expenses in connection with the part of the paddy which is not sold. Commonly this effect of navigation conditions is only one aspect of the matter of "quantity available" and it may in the same way affect the variety of paddy grown and sold.

11. In some parts of Burma the cost of marketing the paddy is calculated by an addition to a sum representing expenses incurred after reaching the railway station of another sum representing cart-hire to the station and varying roughly as the distance, and price-tracts thus become geographical zones which a Settlement Officer, after collecting a very little information, can mark out with a map and pencil in office. The obvious and commonly-made extension of this idea to deltaic districts is to form geographical zones according to the number of tides occupied in the journey to the central market. But in truth the matter is not so simple. A shoal at the wharf of a village may increase the cost of carrying paddy from the bank to the boat, or it may have the effect that after one consignment has been loaded the boat must wait for a suitable depth of water before it can move to take paddy from another seller quite a short distance away. If there is a large supply of paddy at the one wharf no difficulty is felt, but there may have been increased cost of carriage in conveying the paddy from threshing floors to the one wharf. Meanwhile on the opposite bank of the river, where the deep channel lies, each cultivator sells his paddy to a boat which moves steadily along from holding to holding till it has a full cargo. Naturally the cultivators on the shallow side get a lower net price for their grain; they may even get a lower price than villages on extra tide distant from market. A shallow on a trunk route may increase the length of journey for all prices in a considerable area which thus forms an island of low price surrounded on all sides by more favoured holdings. It has already been noted that narrow passages which necessitate rowing the boats instead of sailing may increase expense by delay and through extra payments given to the crew for their extra labour. It is impossible to catalogue all the various ways in which shoals and narrows affect prices. The cultivators meet them probably by extra carting or sending in small boats to move convenient places or sell to local men who store and sell in the rains when water is deeper. But it should be clear that one cannot simply form wide geographical tracts but must study the local conditions of each kwin or village.

12. At first sight it would seem possible to represent the difficulties of navigation and loading by virtual additions at each place to distance from market, but it must be noted that the conditions change. At the time of last settlement it was a common practice to take paddy long distances, even all the way to Bassein, by sampan, or in large sampans to Rangoon. Difficulties in navigation arose then from exposure to high winds and rough water in the great highways, and freight by the Irrawaddy Flotilla Company's flats was taken as a basis by the Settlement Officer. The substitution of barges as conveyances has changed these conditions and often even reversed the relative advantages of different villages. Thus the grouping of kwins in tracts of uniform price conditions has changed and it is therefore not possible to assume a uniform change in the cost of carriage as a result of this substitution and by allowing for that to deduce the average local price for the last twenty years. Even since the substitution of barges there have been changes, and changes are still going on. Shoals are forming or eroding; new channels are opening and old channels closing; wharfs are improved or ruined as the streams modify their banks; new



wharfs become accessible from, or old wharfs useless to, interior holdings as intervening marshes or streams are silted up or formed. And these changes commonly act, not like a bridge built on a road as an improvement in conditions for all alike, but in a higgledy-piggledy way affecting some favourably and some adversely.

13. The effect of difficulties of navigation is not restricted to a diminution of price by the increase of expenses incurred by delays in travelling or loading. The price which buyers can offer the sellers has a maximum fixed by the price in Rangoon and the cost of marketing. But the price which they actually give depends upon the intensity of competition amongst buyers and sellers in the locality. This again is not constant throughout the settlement area but varies enough to make significant differences in price. The variations are connected with other conditions affecting prices and operate by increasing or reducing the effect of those conditions. The competition depends largely upon temperamental differences of buyers, some of whom are more ready than others to anticipate a rise in the central market by offering more than the current price there would justify. In spite of the keenness of the competition in some parts the paddy buyers have not yet reached the stage of scientific cost-taking, and there can be no doubt that different buyers have different sources of loss which could be closed. Those who have least of these have found themselves by experience able to take greater risks; and probably the same class are those who are best able to foresee the changes of the market. Like many of the influences affecting prices these may have small effects separately; but they have their part in the total effect.

14. Shoals sometimes have a marked effect upon competition by restricting the occasions on which barges can travel along the rivers to the spring tides. In the Kvaikpi and Kyawzan Rivers, for example, paddy can be transported in barges only on four or five days in each fortnight. Fewer buyers therefore go to compete for the paddy, if a cultivator does not sell at one spring tide he must wait a long time for another opportunity, and if the rains are approaching or his creditors are threatening he cannot risk that. If the Rangoon price is rising the diminished competition amongst buyers enables them to withhold part of the rise in price they would give elsewhere on the chance of recouping it in the further rise in Rangoon during their journey thither; if the Rangoon price is falling they either emphasise the fall or do not buy. In other parts freely visited they also offer low prices then; but there the cultivators can refuse to sell in the expectation of a rise occurring again in a few days, while the restrictions of the neap tides in the shoal-locked parts so weaken them in bargaining that they frequently have to sell for what they can get. The buyers lose of course in keeping their boats idle for short intervals waiting for spring tides, and buyers with intimate local knowledge have a greater advantage over others; thus there is no tendency towards such a rush of buyers eager to take advantage of the cultivators' weakness as would remove that weakness. Shoals may also diminish competition amongst buyers at distant places by causing a particular route to be avoided.

15. The intensity of competition amongst buyers is also affected by the distance of the locality from the central market. Along the railway line all railway stations (except specially large centres) are approximately the same for the dealers; but with boats travelling more slowly and able to vary their route and stop where they choose there is a difference. Buying near Rangoon the shorter journey gives a more frequent turnover of capital and thus reduces not only the cost of carriage (and some incidental expenses related thereto) but also (in spite of the slightly larger prices paid) the cost of interest; there is also a smaller element of risk arising from variations of the market and this stimulates competition. Buying at a distance increases all these costs and causes the merchants to make a greater difference between the price they give locally and that which they receive in Rangoon. But the effect does not stop there. It is not merely a matter of a uniform increase in proportion to distance (as on the railway) in the deduction from the price at central market; it results in a selection of the occasions on which purchases are made. When the market is firm cargoes are easily filled in the neighbouring tracts; full advantage can then be taken of the short journey to secure a rapid turnover with small risk; "small profits and quick returns" becomes the governing principle and the sellers get the full value of the market. Some boats worked by dealers from the market centre intending to go to distant parts buy near at hand and return quickly, and in the distant areas of slower turnover and greater risk the competition amongst buyers is diminished. Extra barges too can readily be obtained from the centre if a cargo is available near by without incurring the expense of idle ships. But when the market is weak the cultivators near by, with their better information, know better than those more distant when to wait; barges cannot be obtained so readily at a distance and therefore competition of buyers is weaker except when the difficulty of purchasing near the centre makes it more profitable to go off and buy in more distant parts to pay for the maintenance of boats and capital. Thus in any given year there is a tendency for the weeks of low price to concern distant producing areas more closely than the weeks of high price; the result is that the average at the central market relevant to such districts over a series of years tends to be slightly lower than that relevant



to districts nearer the market. This effect was seen very clearly in 1918 when the particularly weak market in Rangoon had a much greater effect in restricting business and in depressing price in the parts of the Myaungmya District which sell to Rangoon than in other districts nearer to that market.

Similar in effect in some ways to distance from the central market is distance from the local centres in which brokers live. These may deal in paddy in the rainy season or turn to some other trade; or they may be wealthy men who desire the amenities of town life. In any case they tend to live in such centres as Wakèma or Kyônmangè, and there are generally both more competition near such a centre than elsewhere and a similar selection of the days of favourable prices. There may be competition between two such centres, but generally one or other has a distinct advantage in financial influence over cultivators or in ease of access, and a centre which deals chiefly with *ngasem* does not compete with a centre which deals chiefly with *kaukgyi*.

16. The effect upon prices of distance from the central market is slightly modified by the purchases made by local dealers with the intention of storing until prices have risen. These dealers regularly watch for times when a low Rangoon or Bassein price causes the buyers from those centres to offer a price which they can easily afford to exceed by enough to persuade some cultivators to sell. But the general effect of this is not very great because these dealers already have a greater advantage in their ability to collect paddy in small boats or sampans without extra expense of transport in places in which the bargemen could only buy at a considerable reduction owing to the smallness of the quantity available either of a particular kind or of all kinds of paddy, or to the conditions of navigation or wharfage. The activity of the larger local dealers is affected by the distance of the paddy-fields from the centres, such as Mawlamyainggyun, Kyônmangè and Thayettaw in which they live; but the men of moderate capital who store for sale in the rains are found in most places though they tend to be rarer in the tracts bordering the reserved forests in the south and to be more numerous in the tracts of old cultivation and near the centres of miscellaneous trade. In most tracts but especially in the newest tracts the Chinese trader buys paddy or receives it in payment for goods purchased on credit during the rains, and may collect considerable quantities by buying in small lots—even as small as four or five baskets—early in the threshing season when the cultivators are anxious to raise a little money to replenish their exhausted stores or replace their worn-out clothes. He takes advantage of the cultivators' willingness to sell in this last case by reducing the price, but he appears to have no particular advantage when buying on a large scale later in the season except in the new thinly cultivated tracts, where, as small supplies attract few buyers, many of the sellers are glad to sell to him to avoid the risk and trouble involved in waiting for the chance of a boat coming to purchase direct. Those cultivators who, by the smallness of their holdings or the largeness of the expenses which they pay in paddy (such as tenants paying a rent in kind or poor owners paying debts with paddy) have only small lots of paddy left over for sale commonly sell to local collectors with a corresponding reduction of price amounting as a rule to about five or six rupees per hundred; but the difference in the amount received is small in such cases and they will submit readily to a further reduction in the rate on this account if the local purchasers are not competing amongst themselves. In some localities cultivators are able to get a slightly higher price for their *kaukgyi* paddy by selling it to local dealers who can take smaller parcels than the Rangoon men.

17. By this time it will be clear that the price of paddy for different parts of the present settlement area cannot be safely determined by merely adding to the Rangoon price a weight-allowance calculated according to the weights observed by the settlement staff in the particular year and deducting a simply estimated sum for "merchants' profits" and a cost of transport proportional to the geographical distance from Rangoon or Bassein. A large number of other influences are at work and have a resultant effect which may be large or small according as they work together or in opposition. An approximation to an average price can be found if the price-tracts are first determined; but as the method provides no means of discovering the boundaries of the price-tracts that is of little interest.

### Part III.—Local Records as Basis.

18. There are two sets of local records of prices: one maintained by surveyors and one by Township Officers. The figures reported by each Township Officer for his headquarters are recorded in the District Office and those reported by the Township Officer, Myaungmya, are published in the *Burma Gazette* every week as the prices of paddy at the district headquarters. The prices recorded at Einndè-Mawlamyainggyun and Wakèma for a few years have been compared with those of Myaungmya week by week but no constant relation could be detected. The prices recorded at Myaungmya are summarised in Statement 4, but it is impossible to assign any meaning to the figures. Successive Township Officers have their own ways of arriving at the figures they report, and generally seem to make no allowance for the kind or specific

gravity of the paddy or the size of basket to which the figures given by their informers relate. The general rule also appears to have been to enquire from village headmen anywhere in the township or from merchants in Myaungmya Town and to make no correction for locality but to report figures obtained on either of these ways according to the accident of the Township Officers' whereabouts at the time. The price in and near Myaungmya Town requires care in its record because the town lies on the edge of two areas producing paddies with a marked difference of specific gravity. The prices taken by the Township Officer in other places varied widely because until 1918 Myaungmya Township extended all the way down to the sea and included distant places affected by salt water which seriously reduces the value of the paddy. As it is not possible to make any use of such a jumble of figures as this system must give, figures are not given for other townships in Statement 4, and no further reference even to those for Myaungmya will be made.

The figures recorded by revenue surveyors are not much better. Some of the usual criticisms are wide of the mark; general uniformity of price throughout a surveyor's charge may very well occur and it may well be varied by extraordinary discrepancies in neighbouring kwins arising from different dates of selling, different kinds and qualities of paddy, economic difficulties forcing a cultivator to sell at a low price or the convenience of completing a cargo quickly persuading a buyer to offer a high price, and these difficulties are met in some degree by using the average over the charge. The real-difficulty is that again there is no reliable record of the kind and specific gravity of the paddy; and no guarantee that the average or mode of these for the neighbourhood is represented in any year; there is no information regarding any changes in these factors during the twenty years over which prices are to be averaged. The size of basket used in the transaction is recorded but it is impossible to suppose that the surveyor has recorded this correctly. In this district surveyors do not appear to have used the fixed ratio of local to Government baskets calculated at the previous settlement; the records show that in many cases they have used a different ratio every year—and the basis of the ratio used may or may not be sound. Where they have used a fixed ratio there is the same likelihood of error because the basket may have changed in fact. Again there is no record of whether the price recorded was a price at the threshing-floor or at the river-bank. The objection that the price at the surveyor's headquarters is often recorded by him for all his charge is partly met by considering only the prices at headquarters, which indeed are all that are recorded now. But then there arises the difficulty that the headquarters are generally at the largest village near by and that the landlords of the locality are congregated there, and sell there the paddy which they collect as rent which, if it comes from the locality at all, is the lowest quality paddy of the locality. If revenue rates were based upon rent the value of this paddy might be the appropriate figure to use; but in fact the rates are based upon net produce. Moreover the rent may come not from the immediate neighbourhood but from distant tracts in which local residents own land. All the villages which financed the pioneers who opened up the new cultivation towards the south draw large quantities of paddy now as rent from land in which the pioneers failed; and this tends to be inferior because the tenant always gives his cheapest kind as rent, because the tenants being poor and having to use the whole harvest for payments in kind thresh badly so as to make the greatest possible bulk of harvest, because those tracts are commonly affected by salt water and because the newness of the land causes the paddy to be chaffy. This general lack of precision as to their meaning is such that if the figures deduced from surveyors' records disagreed with those derived from other sources one would attach little weight to them, while if they agreed they would be of little use. It is possible that a curve representing the averages over seven or eight years of the averages for each year over wide uniform tracts would show the general trend of prices received by local sellers. But even if the figures were definite in meaning and reliable they would bear no very clear relation to the price the cultivator may expect to receive during the ensuing settlement because of the changes since the early years of the period discussed in the article sold and the relation of its local price to the world-price on which it depends. Certainly no use can be made of the record of any individual kwin to assign it to a proper price-tract as it was formerly the custom to do; and even in averaging over broad areas it would often be necessary on account of changes in conditions to change those areas for different parts of the period studied. The price for instance, in newly-developing kwins fifteen years ago, reduced by the lightness of paddy and the small quantity available and the economic weakness of the sellers, is quite irrelevant to the price received by the true representatives of the tract in which those kwins, after development, have been included. It will be noted, too, that paddy grown on newly cultivated parts of an old kwin is not distinguished in these records but tends to reduce the average price shown, though in fact it was compensated by specially high outturn.

Figures based upon those of surveyors are given for the price at several centres in Statement 4 because the Settlement Instructions demand them. They have been reduced to be in terms of nine-gallon baskets according to the surveyors' records of the size of basket used in the transactions on which they are based. But no use has been made of them in fixing a settlement price. A comparative study of them suggests that they are

unreliable, and in fact the records on which they are based quite commonly cover only one transaction at the very end of the season, moreover the relationship used to convert the price in local baskets to that in Government baskets has varied quite unintelligibly from year to year at each centre and seems to depend largely upon arithmetical errors. Better records may be obtained in the future with the new system of recording only for a few centres; under the old system the very bulk of the work forbade care and accuracy.

It would probably lead to a better record of local prices if the surveyor, when recording terms of a sale of paddy, noted the number of milk-tins in the particular measuring basket used according to the estimates of the parties to the sale. The corresponding price of 100 Government baskets could be found with sufficient accuracy by assuming that one Government basket holds 125 milk-tins.

## APPENDIX B.

## LARGE ESTATES.

(See paragraph 107 of Chapter IV.)

N.B.—Areas are shown in terms of a unit of 100 acres.

Circle ... ..		Linné.				Myaungmya.				Kyagan.			
Tracts (approximately) ..		1 to 4.				5, 8 to 10, 11M.				6, 7, 24 to 27.			
Scale ... ..		A.	B.	C.	D.	A.	B.	C.	D.	A.	B.	C.	D.
Number of estates.	100-199 acres ..	113	120	110	129	68	73	77	77	95	103	106	119
	200-299 " ..	28	35	38	39	11	16	16	16	20	20	20	24
	300-399 " ..	16	17	17	18	6	7	7	9	7	7	7	7
	400-499 " ..	5	7	7	12	6	4	4	6	1	2	2	2
	500-599 " ..	2	2	2	3	3	4	4	3	1	2	2	2
	600-699 " ..	5	7	7	5	...	...	..	1	1	1	1	2
	700-799 " ..	1	2	2	1	3	3	3	1	...	...	...	...
	800-899 " ..	2	2	2	3	...	1	1	2	1	...	...	1
	900-999 " ..	1	1	1	2	..	..	..	...	1	2	2	2
	1,000+ " ..	2	2	2	7	3	3	3	4	...	..	...	...
All over 100 acres ..		175	195	197	219	100	111	115	119	127	137	140	152
Areas (correct to nearest hundred acres).	1. Estates over 1,000 acres ..	22	22	22	120	53	58	58	72	..	...	...	...
	2. Estates over 100 and under 1,000 acres ..	372	430	436	481	207	235	241	253	232	251	256	297
	3. All estates over 100 acres ..	394	451	458	601	260	294	300	325	232	251	256	292
	4. All paddy land in the Circle in 1917-18.	1,290	..	..	..	1,145	..	...	..	909	..	...	...

  

Circle ... ..		Mawlamyaygyun.				Wakèma.				Kyaikpi.			
Tracts (approximately) ..		11W, 12, 13, 23L, 28, 29.				14 to 17.				18 to 22, 23M.			
Scale ... ..		A.	B.	C.	D.	A.	B.	C.	D.	A.	B.	C.	D.
Number of estates.	100-199 acres ..	78	106	106	109	79	79	80	88	69	97	97	102
	200-299 " ..	22	28	29	30	20	20	20	24	12	23	24	30
	300-399 " ..	9	10	9	14	8	8	8	13	7	11	11	14
	400-499 " ..	7	8	7	6	3	3	3	3	8	13	13	15
	500-599 " ..	12	11	13	12	3	3	3	4	4	4	4	6
	600-699 " ..	..	1	1	1	..	..	..	..	1	1	1	4
	700-799 " ..	1	1	1	5	...	..	..	...	...	...	...	2
	800-899 " ..	1	2	2	2	2	2	2	2	...	...	...	3
	900-999 " ..	1	..	..	1	..	..	..	...	..	1	1	1
	1,000+ " ..	6	7	7	13	2	2	2	2	4	4	4	9
All over 100 acres ..		137	174	175	195	117	117	118	136	105	154	155	186
Areas (correct to nearest hundred acres).	1. Estates over 1,000 acres ..	82	93	98	202	29	29	29	29	60	60	61	151
	2. Estates over 100 and under 1,000 acres ..	312	374	380	441	229	229	231	274	209	222	227	440
	3. All estates over 100 acres ..	394	467	478	643	257	258	259	303	269	282	288	591
	4. All paddy land in the Circle in 1917-18.	1,188	..	..	..	1,028	..	..	..	1,117	..	...	...



APPENDIX C.—A NOTE UPON STATEMENTS 16, 17, 18, AND THE CALCULATION OF ACRE-RATES FROM STATISTICS OF HOLDINGS OF MIXED SOIL-CLASSES.

1. Suppose one man has thirty acres of land equally divided amongst low, middle and high levels and another has an equal area all in the middle levels. The former cultivates the low land in the early rains while the latter is still sitting idle waiting for his land to become fit for cultivation; presently they both begin on the land in the middle levels, and if both work with the same number of cattle and labourers the former finishes his land of this level and two-thirds of his holding when the latter has finished only one-third of his land. By this time the former finds his high land ready to cultivate and proceeds to finish the whole area comfortably in due season. The latter probably finds his land getting too wet; certainly his cultivation of it will be too late to get the full advantage of its intrinsic qualities. Other examples can be taken to compare a holding all of second class or of other description with a holding of a normal share of lands of different soil-classes. It becomes clear that the outturn of a holding is not determined solely by the intrinsic productive power of each acre or field but it is dependent upon the proportions of land of each quality associated in it. The owner of the thirty acres all of first class can only get the same average rate of outturn as the owner of the mixed holding got from the first class portion of his holding by concentrating twice the labour-force, and then his rate of net produce is of course diminished. It follows that if the acre-rate of outturn in single soil-class holdings were known correctly the outturns of mixed holdings could not be calculated on the same basis according to the number of acres of each soil-class they contain. As a matter of fact the acre-rates of outturn in single soil-class holdings are not known satisfactorily because such holdings are too few to give a sufficiently wide basis to eliminate accidental variations due to the circumstances of the season in the locality and the variations in the skill and resources of the cultivators. But if outturns cannot be deduced reliably from single-soil class holdings, neither can rents or sale-prices, because for these only the same arguments in support of the method are available and they must depend in a very direct way upon the produce.

2. At the same time this dependence upon the produce is not sufficient to justify the method of Settlement Instruction 316 (c) which yields acre-rates proportional to the gross-produce. For instance, if  $x, y, z$  are the gross outturns per acre of first, second and third-class lands and  $a, b, c$  acres of each of these classes are included in the totality of land examined in connection with sales, and  $S$  is the total price paid for all this land; then the sale-price per acre in each class is assumed to be the gross produce multiplied by the fraction  $S/(ax + by + cz)$ . The Settlement Instructions do not apply this method to rents, but it must be applicable to rents too if it is valid for sales, as a matter of fact it is quite unjustified for either rents or sales, and when it is applied to the average rates of encumbrance which Settlement Instruction 317 (c) calls "mortgage-values" it becomes ludicrous. Further, let it be noted what would be the effect of calculating in this way rental values which may influence assessment-rates. The values calculated are proportional to the gross produce; any assessment-rates taken as a proportion of these values would therefore be proportional to the gross produce, and the introduction of rental values as a basis of assessment before a better calculus is found would be therefore an exceedingly regrettable retrograde step. If the value of the net produce were substituted for  $x, y, z$  in this method the rents deduced would be higher in the first and lower in the third class, and the values obtained might furnish a guide in selecting an assessment-fraction. But the comparison of the total rent and the total net produce of the area  $(a + b + c)$  would give the same information, and there are difficulties about the valuation of the net produce and the rent, and there is no obvious justification for assuming that the rent of a holding is determined by such a formula as  $r = ax + by + cz$  where  $x, y, z$  are proportional to the net produce values. On the contrary there are reasons for supposing that terms representing the proportional association of different soil-classes in the holding would appear. And further, since whatever the size of a holding the tenant has to make a living out of it—and therefore an undersized holding must get as a rule less than a proportionately reduced rent if exceptional conditions like those of Shwedaung Township in Prome District do not obtain—it is probable that other terms also would appear. It is desirable, too, to discover the rental and sale values if possible by a method independent of the assumptions for gross outturns or net produce; the latter is largely a matter of convention because the manner of calculating the cost of cultivation is in many ways conventional, and moreover there is required rather an estimate of rental values which will test the calculation of net produce and the rates of assessment derived from that.

3. If instead of attempting to base the calculation of acre-rates upon unfounded hypotheses, outturns rents and sale-values are approached directly by statistical methods new ideas begin to appear. For every holding examined the rent  $r$ , and the areas  $a, b, c$  of land of the first, second and third classes respectively contained in it can be determined. By the methods of partial correlation a relation between  $r$  and  $a, b, c$  can be determined in the form of a regression equation. There is the great objection that the surface represented by this equation cannot be visualised because it will be a surface in four-dimensional space. But the simpler case of a line of regression for the relation between two variables is easily

grasped, and the advance from that to a plane of regression in three dimensions is not difficult and is a model of the further advance which we cannot visualise. For two tracts selected from those for which figures were first ready as being extensive and likely to give results of interest the regression equations were calculated for outturns and rents. Holdings with rents between 100 and 100 baskets were alone recorded, because for very small or very large holdings conditions probably come into operation which do not affect holdings within this normal range; holdings of less than ten acres also were excluded on similar grounds. The "normal" outturn of the holding as described in Chapter XI was used and only holdings in which figures for the outturns of the last three years were available and seemed to support the figures for normal outturn were included. Further, to reduce the labour of calculating some of the correlation coefficients only those holdings which could be used in calculating both for outturns and for rents were used for either purpose; this also had the use that holdings with abnormal relations between rent and outturn could be excluded. The tracts were 14 and 16; returns from 448 holdings were used in the former and from 244 in the latter. Experience naturally taught how to organise the work to save much labour. The calculation of the standard deviations and product-sums of coefficients could be and was performed by settlement clerks working independently in duplicate; but all the subsequent work seems bound to fall upon the Settlement Officer himself. The equations obtained were as follows:—

Tract 14.	Tract 16.
$r = 15x + 13y + 7\frac{1}{2}s + 26\frac{1}{2}$	$r = 13x + 9y + 5\frac{3}{8}s + 18$
$p = 39x + 33\frac{1}{2}y + 19\frac{3}{4}s + 64\frac{1}{2}$	$p = 32x + 22\frac{9}{10}y + 11\frac{1}{4}s + 70$

It will be understood of course that fractions with small integers approximating to the complex fractions actually obtained have been substituted in these equations. The first impression that according to the equation a holding of zero area in Tract 16 would yield 70 baskets is not justified because the equation has no reference to very small holdings; it can only represent those of the classes upon which it is based. The meaning is that (in holdings of normal extent) the outturn should increase by 32 baskets and the rent by 13 baskets for an addition to a holding of one acre of first-class land although 13, 9, 5·4 are not acre-rates of rent in the sense that the total rent can be calculated simply as the sum of products of these figures and the corresponding acreages. But in a very real sense the coefficients in these equations are acre-rates of rent and outturn though they embody a conception of acre-rates quite different from the ordinary meaning of the term. They seem to imply a theory of a system of assessments in which the rates for different soil classes should be derived by the addition of sums proportional to these acre-rates to a constant quantity. It is possible, however, to deduce a system of acre-rates more in accordance with the ordinary conception of that term. One can theoretically ascribe to each soil-class such a rate of outturn that not only (1) the total actual outturn from a large number of holdings all cultivated under normal conditions shall be equal to that calculated according to the ascribed rates and the included acreage of each grade, but also that (2) when the actual and calculated outturns for all the separate holdings (both those of a single soil-class and those of mixed classes) are tabulated side by side the differences, which will be excesses sometimes on one side and sometimes on the other, shall be less on the whole than with any other set of assumed rates. For the reasons given above these rates will not generally be the same as those deduced from the outturns of single soil-class holdings alone nor even proportional to them. The method of procedure, like the last, is an ordinary statistical method in common use based upon the application of the method of least squares and derived from the theory of the normal curve of errors.

4. If the areas by soil-classes and outturns of three holdings were given in the form:—

$$\begin{aligned} a_1x + b_1y + c_1s &= p_1 \\ a_2x + b_2y + c_2s &= p_2 \\ a_3x + b_3y + c_3s &= p_3 \end{aligned}$$

the three equations could be solved and values for the acre-rates  $x, y, s$  determined. But when as in Tract 14 there are 448 equations of this form it is not possible to satisfy all of them at once. The best known occurrence of a similar problem is perhaps the problem of the combination of observations in an astronomical observatory. This problem is very nearly parallel; the aim is to find the values which give the best general all-round satisfaction to all the equations as a group. The first step is to convert the 448 "observational" equations, for outturn or rent into three "normal" equations, which are then solved to give values of  $x, y, s$  uniquely. The calculation involves heavy arithmetic but is sheer routine on rigidly defined lines. As before, by using the same holdings for rents and outturns a very little addition to the calculations for the one gave the rates for the other too. The results obtained were as follows:—

Tract 14.				Tract 16.					
Rents	...	16·5,	14·5,	8·5	Rents	...	13·8,	10,	5·75
Outturns	...	48·5,	37,	22·5	Outturns	...	35·5,	27,	13·3

The rents of Tract 16 agree with the single-soil class rents of Statement 16; those of Tract 14 do not, but are less than half a basket out except in the first class. The figures for 763 mixed holdings in Tract 14 in Statement 16 also require rather higher figures than these determined from the 448 holdings. The discrepancies in the outturn figures from the outturns assumed for these tracts are striking; but the explanation is clear. The equations regard the actual classification for assessments which was based on net produce; all kinds of drawbacks are taken into consideration in classifying, and a large part of the second-class land undoubtedly yields as much as is assumed for first-class land. Similarly for much third-class land with a second-class outturn. The equations therefore assign an excessively high figure for the normal rate of outturn to both the second and the third classes, and consequently (since they have to make up the correct total outturn) too low a rate for the first class. Here indeed is the real difficulty of all mathematical methods of determining acre-rates of outturns from statistics; it can only be met by a rigorous exclusion of holdings in which an allowance has been made when classifying for any matter except the gross outturn. In some localities such as the extensive central plain of Tharrawaddy this would possibly not be very difficult, but it presents considerable difficulties in a district which is entirely broken up streams into small discontinuous blocks. Where, however, one could obtain the basis of a large number of equations representing holdings in which the part belonging to each soil-class was entirely composed of land of the normal character of that soil-class the method would probably give satisfactory results. The results are probably valid in general for rents and sale-prices upon which the defects of land have the same effect as upon the soil-classification. But the method hardly seems to be practicable as it involves laborious calculations which some Settlement Officers would not care to undertake and in any case would occupy far too much time. It will shortly have also the serious objection that it would not be understood by the people; at present that is of no importance, but it must be expected that as the general standard of education and political development advance the people will demand that settlement processes shall be such as they can understand and criticise.

5. It appears therefore that there is no satisfactory method of determining outturns rents or sale-values or mortgage-rates in terms of acre-rates by soil-classes from the statistics collected by settlement parties holding by holding. For outturns there are, as has been pointed out, peculiar difficulties; but other methods of arriving at acre-rates are available independent of these statistics which can only be used as a weak check upon the acre-rates otherwise arrived at by verifying that the calculated total outturn for all holdings bears such a relation to the total of admitted outturns as is justified by the known circumstances. The calculation of the cost of cultivation by soil-classes would be invalidated in the same way as the calculation of acre-rates of gross outturn; whether the direct calculation of acre-rates of net produce (from the net produce of holdings for which the cost of cultivation had been recorded) would be similarly invalidated is somewhat uncertain. For mortgage-rates there is nothing more to be said than that there is no basis for the discussion of them; the relation of the maximum advance obtainable on a mortgage to the sale-value can be learned by local enquiry amongst the money-lending classes. For sale-values or rents the solution of the equations by the method of least squares and the discovery of the first order surface of regression are both possible theoretically but out of the question as practical settlement work. For rents the problem is of particular importance as the whole question of basing assessment-rates upon rental values is almost meaningless until a method for discovering the rental values in each soil-class is found. The Settlement Instructions do not offer for rents even the unsatisfactory method which they offer for sale-prices, although, as rents are so much smaller than sale prices, the absolute errors—bearing generally about the same proportion to the calculated figures—would be so much smaller. What then is the value of the prescribed Statements 16, 17, 18 of Settlement Reports? These statements do not show the total areas concerned in the class of transaction with which they deal but only calculate average rates per acre. In Statements 5, 6 and 7 are obtained exactly the same information for any defined year, using the Land Records Registers as a basis, and also the total area involved in each class of transaction. Not only so; but by tabulating for a series of years there is obtained a genetic view which cannot be obtained by any direct enquiry made by a settlement party. It has been suggested that the figures of the Land Records Department are less reliable than those of a settlement party in which every detail is subjected to systematic check. But with the present personnel of settlement parties the only employment under Government leading to considerable preferment which can be entered without any qualifications besides a good physique—that check is worth less than is sometimes assumed; and in any case the remedy is rather to improve the check of miscellaneous statistics in the Land Records Department, where it is probably true in general that the check apart from assessments is insufficient. But even so the averages obtained are probably fairly reliable or can be made so with a little reform. Some changes in the registers are desirable—for instance there should not be only one column in Register V to show the total number of agriculturist or non-agriculturist sellers and mortgagors, but sellers and mortgagors should be distinguished. The work which leads up to the Settlement Report Statements 16, 17 and 18 is of enormous



volume and occupies at least half (and probably more) of the time and energy given to field-work. I am of opinion that these statements should not be prepared; the rental and sale values and other particulars can be taken from the Land Records Department's registers and tabulated in Statements 5, 6 and 7 slightly modified. The time and energy thus set free in the settlement party would be available for improvement of the remainder of the settlement work and for enquiries into other economic matters for which no other statistics are available. The question of partnership and share produce tenancies and tenancies of various miscellaneous conditions which are not recorded by the Land Records Department may require consideration in some districts; but a very abridged record of these would be sufficient for Lower Burma, and probably for Upper Burma too.



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**STATEMENTS.**

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## Statement 1.—Occupied and Other Areas

1 Tract		8		9		10		11M	
2	Year ending 30th June	1903	1919	1903	1919	1903	1919	1903	1919
3	Assessed area	16,206	26,550	40,898	38,054	17,866	21,780	3,514	4,215
4	Village sites (not assessed)	...	268	...	233	...	178	...	49
5	Religious land	...	100	...	110	...	91	...	5
6	Reserved grazing	...	3,784	...	3,246	...	990	...	...
7	Culturable { A	...	6,978	...	7,976	...	1,203	...	43
8	Waste { B	...	22,973	...	2,301	...	14	...	97
9	Unculturable, roads, under water, etc.	...	18,753	...	3,722	...	2,729	...	733
10	Total unassessed	63,200	52,856	14,754	17,598	9,119	5,205	1,628	927
11	Gross Area	...	79,406	...	55,052	...	26,985	...	5,142
12	Percentage Occupied	20	33	70	68	60	81	68	80
13	Increase in line 12	...	17	...	25	...	23	...	22
1	Tract	11W		12W+12Wx		12M		13	
2	Year ending 30th June	1903	1918	1903	1918	1903	1918	1903	1918
3	Assessed area	2,299	2,865	33,547	40,274	63,002	71,553	3,558	5,839
4	Village sites (not assessed)	26	14	378	333	549	355	15	21
5	Religious land	1	3	37	78	90	104	7	6
6	Reserved grazing	...	...	151	202	1,718	2,137	1,160	1,180
7	Culturable { A	...	40	...	711	...	988	...	186
8	Waste { B	867	2	7,374	8	10,577	119	2,834	...
9	Unculturable, roads, under water, etc.	632	781	11,060	10,763	15,300	15,023	2,144	2,385
10	Total unassessed	1,526	840	19,000	12,095	28,240	13,726	6,100	3,778
11	Gross Area	3,825	3,705	52,547	52,369	91,242	90,270	9,738	9,617
12	Percentage Occupied	60	77	64	76	69	79	37	61
13	Increase in line 12	...	17	...	12	...	10	...	24
1	Tract	14		15		16		17	
2	Year ending 30th June	1903	1917	1903	1917	1903	1917	1903	1917
3	Assessed area	16,935	17,079	45,227	51,270	24,614	34,752	8,591	12,255
4	Village sites (not assessed)	...	153	...	434	...	92	...	25
5	Religious land	...	45	...	116	...	27	...	11
6	Reserved grazing	...	1,497	...	5,453	...	6,706	...	4,051
7	Culturable { A	...	86	...	1,876	...	5,738	...	4,424
8	Waste { B	...	14	...	5,040	...	16,908	...	20,694
9	Unculturable, roads, under water, etc.	...	2,328	...	7,015	...	7,324	...	8,416
10	Total unassessed	4,267	4,123	25,877	19,934	46,933	36,795	41,285	37,621
11	Gross Area	...	21,002	...	71,704	...	71,547	...	49,876
12	Percentage Occupied	80	80	64	72	34	48	17	24
13	Increase in line 12	...	...	...	12	...	15	...	7

NOTE { Many of the figures for 1903, 1904, 1906, involve estimates on account of the revision of *hwin* bound  
 Some differences of gross area are due to this: some to movements of river beds changing the true  
 \* Omits tracts 28 and 29; taken from Abstract of Statement 3.

at last Settlement and present Settlement.

1	18		19		20		21		22	
	1903	1918	1903	1918	1906	1919	1906	1919	1906	1919
3	14,126	16,734	23,066	25,339	7,342	9,684	20,270	23,431	4,536	4,682
4	66	74	203	67	48	19	212	213	39	21
5	15	17	15	33	3	3	30	53	2	10
6	1,781	1,674	201	160	3,257	2,357	220	220	291	289
7	3,753	778	2,212	130	1,705	1,604	2,093	716	133	7
8		1,934		382		439		56		...
9	4,742	3,839	4,735	4,773	3,342	1,506	1,922	1,629	213	227
10	10,357	7,716	7,366	5,545	8,355	5,938	4,477	2,887	678	554
11	24,473	24,450	31,332	30,884	15,697	15,622	24,747	26,318	5,234	5,236
12	58	68	76	82	47	62	82	29	87	89
13	...	10	...	6	...	15	...	7	...	2
1	23M		23L		24W		24A+24B		25	
	1903	1918	1903	1918	1903	1918	1903	1919	1903	1919
3	5,850	11,007	3,149	6,222	1,277	4,911	3,615	13,141	3,062	12,256
4	36	55	16	24	2	5	22	34	2	66
5	5	6	4	3	...	7	2	19	3	10
6	2,361	1,449	...	59	1,106	1,149	2,337	2,049	...	37
7	4,573	63	3,549	79	4,205	363	10,638	2,126	17,355	8,140
8		3		2		...		54		299
9	1,241	1,457	1,758	2,001	931	1,095	7,450	6,495	5,114	4,660
10	8,216	3,033	5,327	2,168	6,244	2,619	20,449	10,777	22,484	13,212
11	14,066	14,040	8,476	8,390	7,521	7,530	21,064	24,118	25,546	25,468
12	42	78	37	74	17	65	5	55	12	48
13	...	36	...	37	...	48	...	40	...	36
1	26		27		28	29	Settlement Area.			
	1903	1919	1903	1919	1919	1919	1902-03		Present Settlement	
3	2,807	7,113	1,017	2,117	8,594	9,721	170,959 *		482,138	
4	17	20	...	5	38	47	...		2,853	
5	...	3	...	...	14	20	...		922	
6	...	...	...	...	...	...	...		38,689	
7	10,933	5,141	3,434	3,378	1,229	7,795	...		61,798	
8		9,592		1,671		...	...	...	75,602	
9	3,456	2,392	4,512	1,742	1,243	2,628	...		115,059	
10	14,406	10,148	7,946	6,796	2,524	10,460	406,578		294,805	
11	17,213	17,261	8,963	8,913	11,118	20,211	771,537		371,043	
12	16	41	11	24	77	48	48		62	
13	...	25	...	13	...	...	...		16	

daries. areas of tracts and there is some residual error in the records of the earlier years. All town lands have been omitted.

Statement 2.—Land Revenue and Capitation-tax

1. YEAR		1902-03	1903-04	1904-05	1905-06				
Area in acres.	2. } Nett } Matured	337,302	335,984	340,466	345,480				
	3. } cropped } Not matured	10,730	876	3,520	8,278				
	4. Fallowed and exempt	55,286	29,125	32,788	35,694				
	Total occupied	403,318	365,985	376,774	389,446				
Land and Tree Revenue.	6. Demand	Rs. 8,95,998	8,70,226	1,091,778	12,67,031				
	7. Remissions	4,388	2,553	7,452	17,669				
	8. Collections	8,88,745	8,66,443	1,082,818	12,31,712				
	9. Average collected per acre matured	2 63	2 58	3 18	3 57				
Thathameda or Capitation-tax.	10. Number of Assessee†	30,145	29,780	33,345	33,597				
	11. Number of Exemptees†	2,501	2,389	4,038	2,430				
	12. Demand	Rs. 1,86,914	1,74,131	1,90,471	1,97,948				
	13. Remissions	2,577	2,569	3,034	5,362				
	14. Collections	1,89,191	1,71,515	1,87,237	1,91,093				
	15. Average collected per head of population.	'97	'86	'92	'93				
16.	{ (a) Total collections	Rs. (a) 10,78,736	(b) 2 67	(a) 10,37,958	(b) 2 84	(a) 12,70,055	(b) 3 37	(a) 14,22,805	(b) 3 65
	{ (b) Incidence per acre occupied	Rs. (a) 26 67	(b) 26 67	(a) 28 84	(b) 28 84	(a) 33 37	(b) 33 37	(a) 36 5	(b) 36 5
Recovery by process.	Total No. of	17. Process issued	7,323	2,981	3,700	6,229			
		18. } Persons { arrested	822	170	259	349			
		19. } } imprisoned	..	1	..	..			
		20. } Sale of { moveable	76	3	2	15			
		21. } Property { immoveable	121	157	86	286			
	22. { (a) Total arrears	Rs. (a) 43,869	(b) 32,938	(a) 38,739	(b) 28,232	(a) 61,740	(b) 25,127		
	{ (b) Total realized	Rs. (a) 43,869	(b) 32,938	(a) 38,739	(b) 28,232	(a) 61,740	(b) 25,127		
1. YEAR		1910-11	1911-12	1912-13	1913-14				
Area in acres.	2. } Nett } Matured	388,351	393,627	407,122	417,774				
	3. } cropped } Not matured	2,937	1,766	383	117				
	4. Fallowed and exempt	31,518	30,304	23,865	28,391				
	5. Total occupied	422,806	425,697	431,370	446,282				
Land and Tree Revenue.	6. Demand	Rs. 14,78,137	14,84,949	15,12,676	15,42,337				
	7. Remissions	18,438	10,829	1,472	544				
	8. Collections	14,58,666	14,72,689	15,10,940	15,41,145				
	9. Average collected per acre matured	3 73	3 74	3 71	3 69				
Thathameda or Capitation-tax.	10. Number of Assessee†	34,472	35,181	36,335	37,036				
	11. Number of Exemptees†	3,777	4,380	4,633	4,552				
	12. Demand	Rs. 2,16,340	2,18,933	2,28,497	2,30,070				
	13. Remissions	9,100	12,098	9,011	7,310				
	14. Collections	2,06,880	2,06,835	2,19,192	2,22,759				
	15. Average collected per head of population.	'93	'92	'96	'96				
16.	{ (a) Total collections	Rs. (a) 16,65,546	(b) 3 94	(a) 16,79,524	(b) 3 95	(a) 17,30,132	(b) 4 01	(a) 17,3,904	(b) 4 01
	{ (b) Incidence per acre occupied	Rs. (a) 3 94	(b) 3 94	(a) 3 95	(b) 3 95	(a) 4 01	(b) 4 01	(a) 4 01	(b) 4 01
Recovery by process.	Total No. of	17. Process issued	3,841	3,680	1,329	1,186			
		18. } Persons { arrested	55	87	127	33			
		19. } } imprisoned	..	..	..	1			
		20. } Sale of { moveable	1	3	4	7			
		21. } Property { immoveable	158	85	6	5			
	22. { (a) Total arrears	Rs. (a) 80,293	(b) 62,932	(a) 53,666	(b) 39,283	(a) 21,432	(b) 17,856	(a) 23,890	(b) 17,811
	{ (b) Total realized	Rs. (a) 80,293	(b) 62,932	(a) 53,666	(b) 39,283	(a) 21,432	(b) 17,856	(a) 23,890	(b) 17,811

\* The figures for Recovery by Process are for the whole district of which the occupied area and the population covered



## Demand and Collections since 1902-03.

1906-07		1907-08		1908-09		1909-10		Averages for 10 years 1904-12	
350,987		301,569		377,099		388,461		361,963	
4,067		2,054		622		1,068		3,645	
40,886		39,153		35,005		31,510		20,150	
395,940		403,100		412,026		421,579		401,758	
12,21,402		12,80,141		13,14,903		14,50,2		12,35,469	
6,260		2,977		3,255		6,196		3,004	
12,12,953		12,77,164		13,11,360		14,43,925		12,24,647	
3'46		3'53		3'48		3'72		3'36	
32,401		31,349		28,963		32,129		32,132	
1,336		1,950		2,443		3,055		2,830	
1,95,186		1,93,445		1,99,913		2,07,825		1,98,122	
4,321		4,353		3,784		6,934		5,449	
1,91,165		1,84,092		1,95,939		2,00,891		1,93,014	
91		89		91		92		91	
(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
14,04,118	3'55	14,66,256	3'64	15,07,299	3'05	16,44,816	3'90	14,17,661	3'98
5,956		2,642		1,900		2,685		4,102	
160		150		40		66		266	
43		13		9		4		1	
484		63		77		108		163	
(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
96,527	81,207	8,182	26,742	34,550	22,158	59,774	30,315	53,555	36,074
1914-15		1915-16		1916-17		1917-18		1908-18	
429,393		430,067		445,881		468,147		414,592	
283		4,524				632		1,287	
21,866		30,882		26,666		28,148		28,236	
451,542		465,473		472,547		496,927		444,115	
15,71,399		15,93,014		16,8,604		16,68,840		15,83,498	
1,322		14,935		3,305		5,841		6,626	
15,68,931		15,78,013		16,15,299		16,42,075		15,14,864	
3'65		3'67		3'62		3'51		3'65	
35,548		36,654		37,320		37,112		35,071	
4,672		4,757		4,892		5,054		4,222	
2,23,305		2,28,245		2,31,043		2,29,341		2,21,351	
13,401		10,375		11,731		8,151		9,176	
2,09,904		2,17,870		2,19,812		2,21,190		2,12,127	
'89		'91		'91		'90		'91	
(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
17,78,535	3'94	17,95,883	3'86	18,35,111	3'88	18,64,165	3'75	17,26,492	3'89
4,454		3,399		2,981		2,346		2,748	
1		4		3		99		52	
7		3		2		4		1	
111		27		24		13		5	
(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
78,554	59,846	31,845	20,869	26,964	18,210	36,027	23,798	44,702	31,288

by the other figures of the table is about two-thirds.  
have been made for the missing figures all through. (Chapter V of Report.)

Statement 3.—Acres under various Crops

Year ending 30th June.		1903	1904	1905	1906	1907	1908	1909
9	Rice	444,754	488,999	505,517	518,508	515,742	533,745	555,118
13	Maize	551	130	14	35	39	51	14
14	Gram	...	...	...	...	...	...	...
15	All Beans	135	...	...	...	...	22	...
18	Other Cereals and Pulses	10	6	7	8	6	...	23
19	Groundnuts	...	...	...	...	...	32	35
21	Sesamum	1,095	132	178	110	74	56	55
23	Chillies	6,544	225	290	269	357	304	290
24	Betel-vine	89	144	54	33	46	39	40
26	Sugar-cane	685	550	552	447	638	790	501
27	Tobacco	39	...	3	12	12	12	12
32	Plantains	9,573	5,005	4,816	5,025	5,237	5,402	5,701
33	Coconuts	468	496	491	537	552	569	605
34	Betelnuts	248	218	233	268	296	314	369
35	Mangoes	...	...	...	...	3,868	3,957	3,938
36	Oranges	...	...	...	20	20	37	37
36a	Mixed Orchards	9,669	6,681	6,806	6,774	3,343	3,166	3,407
37	Onions	20	...	...	...	...	...	...
38	Tomatoes	...	24	4	8	11	23	19
39	Other food crops	1,009	517	697	765	1,279	1,109	977
40	Dhani	4,045	4,110	4,190	4,255	4,242	4,283	4,391
41	Other non-food crops	5,271	4,177	4,304	4,523	4,711	4,746	4,799
42	Total cropped area	484,205	511,323	528,158	541,597	540,473	558,657	580,331

## Addendum—Abstract of assessment

(a) Acres under each class of crop.

Year.	1902-03.	1907-08.	1912-13.	1917-18.
Paddy	356,768	380,108	403,482	458,747
Dhani	2,289	2,474	2,434	3,350
Orchards	10,152	10,214	11,621	13,621
Other	1,750	1,714	2,576	2,266
Total	370,959*	394,510*	420,113*	477,984
Percentage of 1902-03 Area	100	106	113	129

\* Omits the area of original settlement, new tracts 28 and 29.

in the whole Myaungmya District.

1910	1911	1912	1913	1914	1915	1916	1917	1918	Average of 16 years.	
									Acres.	Percentage.
570,216	571,585	576,626	600,443	620,774	636,378	643,240	661,291	678,564	570,218	95.4
23	27	03	72	45	24	25	21	35	73	
...	...		20	...		9			2	
...	..	28	30	6	4	4	..	40	17	
17	24	18	44	96	07	74	128	125	43	
9	31	240	400	310	286	267	271	210	131	
51	40	42	21	12	4	5	13	10	119	
281	314	489	500	534	438	478	666	577	784	
51	45	42	32	28	70	96	86	136	58	
325	299	290	255	286	287	372	559	528	460	
26	26	5	5	4	2			2	10	
5,909	5,991	6,080	6,083	6,102	5,588	5,887	5,874	6,131	5,900	} 25
606	611	635	632	627	509	576	574	730	579	
358	357	412	407	410	376	417	429	447	347	
3,843	4,073	3,971	3,995	4,198	4,700	4,483	4,379	4,316	3,107	
20	20	19	19	19	19	19	19	19	18	
3,591	3,659	3,643	3,650	3,837	4,515	5,240	5,220	5,583	4,924	
...	..	..	..	..	..	..	..	..	1	
43	30	28	22	21	..	2	2	4	15	
1,020	803	1,218	1,037	1,297	1,339	1,661	1,953	2,486	1,198	
4,464	4,420	4,454	4,550	4,740	4,744	5,193	5,350	5,554	4,561	0.7
4,900	5,241	4,868	4,788	5,004	4,748	4,910	4,972	5,029	4,812	
595,753	597,603	603,177	629,005	648,350	664,197	672,958	691,826	710,532	7,324	10.

rolls for the Settlement Area only.

(b) Percentage area for each class of crop.

Year	1902-03	1907-08	1912-13	1917-18.
Paddy	96.2	96.4	96.0	96.0
Dhani	0.6	0.6	0.6	0.7
Orchards	2.7	2.6	2.8	2.8
Other	0.5	0.4	0.6	0.5
Total	100	100	100	100

## Statement 4.—Wholesale Harvest

	Place.	Assessment Tract.	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
					Average of prices in the first thirteen weeks of each year of 100									
1	Polaung	8	88	80	..	85	94	80	70	70	..	77	88	108
2	Yingan	9	88	83	90	90	...	80	75	75	88	79	...	101
3	Kyonmange	12	...	82	94	90	88	84	78	78	98	95	103	108
4	Mawlamyanggyun		88	89	97	95	94	91	77	76	96	89	108	100
5	Wakema	14	88	83	97	100	96	86	..	76	98	97	96	111
6	Shwelaung	15	92	86	97	97	..	87	77	77	102	90	106	101
7	Hngetpyawchaung	17	..	88	94	85	87	87	77	..	98	93	110	105
8	Kyaikpi	20	90	93	97	98	91	85	83	73	91	91	100	108
9	Kanbe	24	...	...	...	...	...	..	..	..	96	83	98	...
10	Kyagan	26	85	88	100	100	86	85	75	80	110	..	..	..

## Average of prices of 100 Government baskets of (New Crop)

A = Average for first thirteen weeks.

Myaungmya	..	A	90	88	93	79	93	95	95	87	91	90	98	104
		B	93	80	92	76	93	94	100	87	92	92	97	103

Averages of prices of 100 Government  
Subject to the addition of weight allow

RANGOON.														
(i) "Best Boat Paddy"	...	A	...	...	...	...	...	94	88	82	104	92	100	106
Messrs. Morrison's Circulars	...	B	...	...	...	...	...	94	89	81	105	91	97	106
(ii) Burma Gazette	...	A	95	88	105	85	93	92	86	81	102	89	96	102
Report	...	B	96	86	102	87	98	91	86	80	103	91	94	103

## Average of prices of 100 Government baskets of (New

The figures shown are all as recorded; but from 1895 to 1907 inclusive they have been diminished by one-eleventh before to weight allowance. A and

Bassein	...	...	A	98	92	104	88	96	95	88	89	100	96	108	105
			B	99	90	102	86	100	95	87	86	106	96	110	105

\* Figures for 1912 are omitted in all calculations of averages. For years in which



Prices of Paddy since 1895.

1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	* Average for twenty years ending		Price assumed for assessment in expiring settlement.
(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	1914	1919	
Government baskets, according to the Land Records Department.															
120	..	...	101	95	138	138	133	76	96	96	75	114	95	96	} 78
..	108	110	95	110	145	...	125	80	95	105	80	120	97	99	
120	126	108	...	..	150	150	140	100	131	125	95	150	108	110	} 80
..	127	107	102	109	152	131	143	146	121	126	92	143	102	110	
135	146	101	...	119	148	133	124	86	126	131	86	141	103	109	} "
127	137	112	103	130	150	137	126	97	112	115	80	134	104	108	
132	140	113	107	126	150	133	133	83	90	107	87	144	104	107	} 82
123	141	108	.	120	147	141	127	91	113	118	85	138	103	107	
76	128	..	102	126	137	143	136	80	98	118	89	138	100	103	} 70
96	120	104	.	..	140	122	131	75	..	...	76	115	98	99	

Paddy at Myaungmya according to the Township Officer.

B = Average for fifth to tenth weeks inclusive.

112	133	105	92	124	150	135	125	83	103	116	92	131	101	106	} 78
113	136	102	92	131	152	138	127	92	98	118	89	130	102	107	

baskets of (New Crop) Paddy at Rangoon.

Prices A and B as for Myaungmya above.

119	135	103	100	122	154	132	125	98	105	111	93	123	} ..	107	90'93
120	135	101	102	123	152	130	124	95	102	115	92	124			
118	131	101	95	119	151	130	121	95	100	109	91	122	} 102	104	
118	131	99	97	119	150	128	120	94	98	113	89	122			

(New Crop) Paddy at Bassein (according to *Burma Gazette*).

averages; the figures for 1908 to 1919 were recorded for 46 pound nine-gallon Government baskets and were subject to the same conditions as for Myaungmya above.

120	136	105	93	119	150	135	128	91	95	112	90	119	} 99	103	88
122	135	102	93	121	151	135	130	92	94	116	89	116			

where necessary, missing estimates have been made for the purpose of calculating the averages.

Statement 5.—Analysis of District Records for Tenancies of Paddy Land.

Based on the registers of the Land Records Department: at intervals of five years.

Primary Tract	8		9		10		11									
	1902-03	1907-08	1912-13	1917-18	1908-03	1907-08	1912-13	1917-18								
1. Number of tenants	21	60	97	159	228	307	260	514	254	536	408	646	143	170	209	162
2. Area { Acres	545	1,228	2,074	3,799	5,041	6,867	5,616	11,555	4,303	5,563	7,721	12,767	3,047	3,839	5,112	5,435
3. { let Percentage of tract	4	8	18	19	13	28	18	34	25	30	39	53	53	61	74	78
4. Average payment per { Baskets	2.6	3.8	2.9	4.0	4.5	5.4	6.4	5.7	6.4	7.9	8.4	9.3	7.4	10.6	9.8	12.2
acre by tenant { Rupees	2.4	4.9	3.9	3.1	4.8	7.8	9.0	4.6	6.0	10.2	12.2	8.2	7.0	13.2	14.4	11.7
5. Percentages of line 2 { R-1	{ 100	{ 21	{ 23	{ 26	{ 100	{ 37	{ 31	{ 23	{ 100	{ 58	{ 64	{ 59	{ 100	{ 80	{ 78	{ 77
in each soil class { R-2	{ 79	{ 77	{ 77	{ 74	{ 63	{ 63	{ 69	{ 77	{ 77	{ 42	{ 36	{ 41	{ 20	{ 20	{ 22	{ 23
6. Percentage of total rent paid in cash	22	7	...	4	10	3	...	...	4	2	1	...	...	...	...	...
7. Average outturn per acre of leased land in year of lease (Baskets.)	1.1	1.6	1.9	1.6	2.0	2.5	2.9	1.7	2.6	3.1	3.0	2.7	2.4	3.8	2.8	2.9
8. Average land revenue per acre of leased land (Rs.)	1.1	1.6	1.6	1.6	1.5	2.2	2.3	1.8	1.8	2.7	3.1	3.1	2.2	3.5	3.5	3.5
9. Balance of line 4 retained by land-lbrd (Rs.)	1.3	3.3	2.3	1.5	2.7	5.0	6.7	2.8	4.2	7.6	9.1	5.0	4.8	9.7	10.9	8.2
10. Land-lbrds	{ 17	{ 50	{ 78	{ 134	{ 155	{ 210	{ 188	{ 351	{ 171	{ 184	{ 276	{ 301	{ 60	{ 62	{ 81	{ 54
(a) Agriculturists	{ 2	{ 8	{ 6	{ 9	{ 45	{ 52	{ 33	{ 13	{ 39	{ -9	{ 14	{ 70	{ 26	{ 36	{ 13	{ 43
(b) Non-Agr. Resident culturists	{ 1	{ 4	{ 4	{ 3	{ 3	{ 3	{ 33	{ 52	{ 52	{ -9	{ 44	{ 131	{ 26	{ 36	{ 21	{ 37
(c) Non-Resident culturists	{ 19	{ 58	{ 88	{ 146	{ 200	{ 262	{ 244	{ 416	{ 210	{ 233	{ 334	{ 498	{ 86	{ 98	{ 115	{ 114
(d) Total	2	55	93	18	41	308	42	122	72	279	80	266	17	125	45	93
11. Landlords who have let continuously	20	{ 93	{ 147	{ 175	{ 175	{ 308	{ 215	{ 344	{ 164	{ 279	{ 317	{ 366	{ 78	{ 109	{ 109	{ 54
{ over 5 years	1	{ 60	{ 96	{ 154	{ 19	{ 307	{ 5	{ 35	{ 53	{ 536	{ 12	{ 72	{ 15	{ 170	{ 24	{ 17
{ under 5 years	20	{ 93	{ 147	{ 175	{ 175	{ 308	{ 215	{ 344	{ 164	{ 279	{ 317	{ 366	{ 78	{ 109	{ 109	{ 54
12. Tenants holding continuously	22	55	95	165	116	308	257	466	236	279	397	632	95	125	124	147
{ over 5 years	1	{ 60	{ 96	{ 154	{ 19	{ 307	{ 5	{ 35	{ 53	{ 536	{ 12	{ 72	{ 15	{ 170	{ 24	{ 17
{ under 5 years	20	{ 93	{ 147	{ 175	{ 175	{ 308	{ 215	{ 344	{ 164	{ 279	{ 317	{ 366	{ 78	{ 109	{ 109	{ 54
13. Number of holdings	22	55	95	165	116	308	257	466	236	279	397	632	95	125	124	147

**Statement 5.—Analysis of District Records for Tenancies of Paddy Land.**

*Based on the registers of the Land Records Department, at intervals of five years.*

Primary Tract.	12				13				14				15									
	1902-03	1907-08	1913-13	1917-18	1902-03	1907-08	1913-13	1917-18	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18						
1. Number of tenants ...	2,478	3,034	3,092	2,580	96	114	138	137	561	640	671	644	889	1,131	1,071	1,322						
2. { Area { Acres ...	48,916	64,355	73,317	73,098	2,032	3,345	3,874	4,580	7,756	9,253	9,212	10,065	14,202	18,157	17,977	22,613						
3. { let { Percentage of tract ...	50	92	67	65	57	68	70	80	46	53	54	60	33	39	39	46						
4. Average payment per { Baskets ..	11.5	14.7	15.4	17.5	9.0	11.7	11.3	12.3	10.5	13.8	14.8	15.1	10.2	11.7	14.0	12.8						
acre by tenant { Rupees ...	11.2	18.0	22.7	16.4	8.3	13.5	16.5	11.8	11.5	19.0	19.9	13.2	9.6	15.3	16.6	11.1						
5. Percentage of line 2 { R-1	} 100	86	86	86	} 100	89	91	88	} 100	65	63	64	} 100	59	59	55						
in each soil class { R 2		14	14	14		11	9	12		35	37	36		41	41	45						
6. Percentage of total rent paid in cash		1	..	..		..	..	..		..	1	1		1	..	..	..	..				
7. Average outturn per acre of leased land in year of lease (Baskets)		37	47	43		39	26	42		39	39	42		38	42	38	38	37	39	36		
8. Average land revenue per acre of leased land (Rs.)	2.1	4.1	5.1	5.1	2.4	4.2	4.1	4.1	2.7	3.7	4.1	4.2	2.6	3.6	3.8	3.7						
9. Balance of line 4 retained by landlord (Rs.)	9.2	12.9	17.6	11.2	5.9	9.3	9.4	7.7	8.8	12.3	15.8	9.0	6.9	11.7	12.8	7.4						
10. Landlords { (a) Agriculturists	1,090	1,175	1,228	1,082	} 42	51	59	58	} 439	350	354	330	} 681	648	650	608						
{ (b) Non-Agric-Resident	528	721	180	297		} 20	23	1		6	} 123	170		83	101	} 125	298	107	145			
{ (c) culturists Non-Resident.			514	513						21		38					72	83		129	129	333
{ (d) Total ...	1,618	1,896	1,922	1,892			62	74		81		102		562	520		509	514	806	946	892	1,086
11. Landlords who have { over 5 years	432	} 2,376	1,193	1,406	} 6		} 81	46	66	} 187		} 633	277	320	} 279		} 1,123	462	505			
let continuously { under 5 years	1,547		1,367	954		61		46	46		375		355	288		597		626	774			
12. Tenants holding { over 5 years ...	60	} 3,034	414	518	} 5	} 114	15	42	} 33	} 640	56	121	} 58	} 1,131	64	120						
continuously { under 5 years ..	2,418		2,618	2,062			91	123			95	928			625	523	861	1,007	1,262			
13. Number of holdings ...	1,279	2,376	2,560	2,360	67	81	92	112	562	633	632	608	876	1,123	1,088	1,279						

Agricultural

55

Statement 5.—Analysis of District Records for Tenancies of Paddy Land.

Based on the registers of the Land Records Department; at intervals of five years.

Primary Tract. (1)	16				17				18				19			
	1902-03 (2)	1907-08 (3)	1912-13 (4)	1917-18 (5)	1902-03 (6)	1907-08 (7)	1912-13 (8)	1917-18 (9)	1902-03 (10)	1907-08 (11)	1912-13 (12)	1917-18 (13)	1902-03 (14)	1907-08 (15)	1912-13 (16)	1917-18 (17)
1. Number of tenants	359	492	441	674	50	79	111	140	237	297	332	424	340	499	565	708
2. } Area { Acres	4,058	8,532	8,151	12,853	508	1,149	2,017	2,687	5,087	5,055	8,317	10,237	9,084	10,585	13,772	16,175
3. } let { Percentage of tract	18	33	30	41	7	19	24	30	37	42	54	62	43	43	55	63
4. Average payment per acre by tenant { Baskets ... Rupees ...	77 72	79 107	85 117	84 73	97 91	59 74	66 94	46 39	84 79	111 141	115 168	117 103	110 105	141 189	162 221	167 151
5. Percentage of line 2, { R-1 in each soil class { R-2	{ 100	33 67	27 73	22 78	{ 100	20 80	16 84	15 85	{ 100	69 31	70 30	66 34	{ 100	82 18	81 19	80 27
6. Percentage of total rent paid in cash	1															
7. Average outturn per acre of leased land in year of lease (Baskets).	32	26	32	27	34	19	28	14	35	37	39	31	40	43	47	39
8. Average land revenue per acre of leased land (Rs.)	20	24	27	25	21	18	21	17	19	40	49	47	23	47	52	52
9. Balance of line 4 retained by land-lord (Rs.)	52	83	90	48	70	55	73	22	60	101	119	56	82	142	169	99
10. Land-lords.	{ 220 17	{ 333 97	{ 242 81 85	{ 357 103 128	{ 45 3	{ 54 14	{ 67 20 15	{ 67 24 31	{ 160 46	{ 175 64	{ 215 13 62	{ 236 19 84	{ 240 145	{ 313 70	{ 394 30 47	{ 413 50 73
11. Landlords who have let continuously { over 5 years { under 5 years	{ 58 191	{ 475	{ 160 290	{ 204 433	{ 5 45	{ 79	{ 30 79	{ 34 99	{ 58 107	{ 285	{ 144 258	{ 198 221	{ 140 289	{ 494	{ 192 454	{ 319 391
12. Tenants holding continuously { over 5 years { under 5 years	{ 12 247	{ 492	{ 21 470	{ 54 620	{ 2 48	{ 79	{ 5 106	{ 5 135	{ 6 231	{ 297	{ 25 367	{ 40 384	{ 26 314	{ 199	{ 39 526	{ 108 600
13. Number of holdings	249	475	450	637	50	79	109	133	225	285	402	419	429	494	646	710



Statement 5.—Analysis of District Records for Tenancies of Paddy Land.  
Based on the registers of the Land Records Department; at intervals of five years.

Primary Tract.	20					21					22					23	
	1902-03 (2)	1907-08 (3)	1912-13 (4)	1917-18 (5)	1902-03 (6)	1907-08 (7)	1912-13 (8)	1917-18 (9)	1902-03 (10)	1907-08 (11)	1912-13 (12)	1917-18 (13)	1902-03 (14)	1907-08 (15)	1912-13 (16)	1917-18 (17)	
1. Number of tenants ...	81	129	159	175	253	385	433	359	49	56	79	56	162	195	322	385	
2. Area { Acres ...	1,703	3,110	4,222	4,948	6,885	10,645	12,210	10,690	2,071	2,399	2,109	3,270	2,611	4,328	7,592	11,014	
3. { Percentage of tract ...	28	38	45	43	34	48	53	50	43	52	67	70	28	31	48	65	
4. Average payment per { Baskets ... acre by tenant { Rupees ...	6.7 6.5	8.1 11.0	11.3 15.8	11.2 9.9	8.3 7.8	10.9 14.7	12.3 17.0	13.5 11.8	7.5 6.7	10.7 14.3	12.2 17.0	12.8 11.4	10.6 10.0	14.7 19.1	15.1 21.8	17.7 16.9	
5. Percentage of line 2 { R-1 ... in each soil class { R-2 ...	{ 100	48 59	42 58	58 42	{ 100	60 40	55 45	45 55	100	67 33	62 38	60 40	100	90 10	93 7	94 6	
6. Percentage of total rent paid in cash	...	...	...	...	1	...	...	...	...	...	...	...	3	...	...	...	
7. Average outturn per acre of leased land in year of lease (Baskets)	30	31	36	29	30	38	40	33	27	47	36	31	36	43	43	38	
8. Average land revenue per acre of leased land (Rs.)	2.1	2.9	2.9	3.1	2.4	3.4	3.1	3.3	2.6	3.5	3.1	3.1	2.2	4.4	5.3	5.3	
9. Balance of line 4 retained by land-lord (Rs.)	4.4	8.1	12.9	6.8	5.4	11.3	13.9	8.5	4.1	10.8	13.9	8.3	7.8	14.6	16.5	11.6	
10. Land-lords.	{ 36 36	77 }	98 21 18	117 20 19	141 64	250 }	230 88 23	190 78 24	12	24	36 2 13	25 4 15	49 33	84 40	120 48 55	160 34 113	
(d) Total ...	72	77	137	156	205	250	342	292	34	24	51	44	82	124	223	307	
11. Landlords who have { over 5 years ... let continuously { under 5 years ...	18 55	125 }	41 136	68 126	86 161	386 }	206 271	204 171	11 37	56	39 33	45 15	16 76	149	75 201	138 222	
12. Tenants holding { over 5 years ... continuously { under 5 years ...	2 79	129 }	8 151	9 166	13 240	385 }	36 397	66 297	4 4	56	16 63	13 43	37 125	195	30 292	58 338	
13. Number of holdings ...	73	125	177	194	247	386	477	375	48	56	72	60	92	149	279	360	



Statement 5—Analysis of District Records for Tenancies of Paddy Land.

Based on the registers of the Land Records Department; at intervals of five years.

Primary Tract. (1)	28					29					All tracts				
	1907-08 (2)	1912-13 (3)	1917-18 (4)	1917-18 (5)	1907-08 (6)	1912-13 (7)	1917-18 (8)	1917-18 (9)	1902-03 (10)	1907-08 (11)	1912-13 (12)	1917-18 (13)			
1. Number of tenants ...	...	...	...	162	...	...	...	71	6,174	8,276	8,692	9,808			
2. Area let { Acres ...	...	...	...	3622	...	...	1,487	1,20,493	1,62,791	1,62,791	1,86,751	2,34,953			
3. Percentage of tract ...	...	...	...	41	...	...	14	34	43	43	47	51			
4. Average payment per acre { Baskets ...	...	...	...	12'1	...	...	8'1	9'9	12'3	12'3	13'3	13'5			
by tenant, Rupees	...	...	...	11'2	...	...	7'2	9'6	15'6	15'6	18'6	18'3			
5. Percentage of line 2 in each } R 1	...	...	...	100	...	...	100	100	71	71	71	64			
soil class. } R 2	...	...	...	...	...	...	...	...	29	29	29	36			
6. Percentage of total rent paid in cash	...	...	...	...	...	...	...	1'0	0'4	0'4	0'1	0'1			
7. Average outturn per acre of leased land in year of lease (Baskets).	...	...	...	32	...	...	31	35	40	40	40	34			
8. Average land revenue per acre of leased land (Rs).	...	...	...	2'2	...	...	2'2	3'2	3'6	3'6	4'2	4'0			
9. Balance of line 4 retained by landlord (Rs).	...	...	...	9'0	...	...	5'0	7'4	12'0	12'0	14'4	8'3			
10. Landlords, { (a) Agriculturists ...	...	...	...	107	...	...	54	3,606	4,117	4,117	4,494	4,916			
{ (b) Non Agrir- { Resident ...	...	...	...	11	...	...	3	1,277	1,657	1,657	1,743	1,841			
{ (c) culturists, { Non-Resident ...	...	...	...	25	...	...	11	...	...	...	1,176	1,386			
(d) Total ...	...	...	...	149	...	...	68	4,883	5,774	5,774	6,473	7,283			
11. Landlords who have let { over 5 years ...	...	...	...	6	...	...	3	1,489	7,169	7,169	3,055	4,067			
continuously. } under 5 years ...	...	...	...	152	...	...	70	4,096	...	...	5,054	5,312			
12. Tenants holding continuously { over 5 years ...	...	...	...	3	...	...	...	3'9	8,976	8,976	772	1,898			
{ under 5 years ...	...	...	...	170	...	...	71	5,885	...	...	7,920	8,537			
13. Number of holdings ...	...	...	...	158	...	...	73	5,595	7,169	7,169	8,109	9,379			

Statement 6A.—Analysis of District  
Based on the Registers of the Land Records

Primary Tract.				8				9			
				1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18
1.	} Area sold	Acres	...	295	620	890	588	1,214	1,267	1,225	1,491
2.		Percentage of paddy land in the tract	...	2	4	5	3	3	4	4	4
3.	Average price per acre		...	8	13	11	10	11	13	13	20
4.	} Percentage of line 2 in each soil class	R-1...	...	...	20	21	14	..	35	18	21
5.			R-2...	...	80	79	86	...	65	82	79
6.	Percentage of line 2 due to foreclosures		...	?	?	9	...	?	?	...	...

  

Primary Tract.				10				11			
				1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18
1.	} Area sold	Acres	...	594	882	948	888	202	682	547	207
2.		Percentage of paddy land in the tract	...	3	5	5	4	3	11	8	3
3.	Average price per acre		...	18	22	23	47	17	22	50	87
4.	} Percentage of line 2 in each soil class	R-1...	...	...	55	56	53	..	82	73	64
5.			R-2...	...	45	44	47	...	18	27	36
6.	Percentage of line 2 due to foreclosures		...	?	?	...	12	?	?	..	34

  

Primary Tract.				12				13			
				1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18
1.	} Area sold	Acres	...	7,472	7,958	6,405	3,486	300	200	463	169
2.		Percentage of paddy land in the tract	...	8	8	6	3	8	4	8	3
3.	Average price per acre		...	34	55	58	134	23	63	47	84
4.	} Percentage of line 2 in each soil class	R-1...	...	..	91	91	85	...	80	89	99
5.			R-2...	...	9	9	15	...	20	11	1
6.	Percentage of line 2 due to foreclosures		...	?	?	2	3	?	?	29	...

  

Primary Tract.				14				15			
				1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18
1.	} Area sold	Acres	...	966	1,161	1,104	382	2,250	2,741	2,965	1,843
2.		Percentage of paddy land in the tract	...	5	6	7	2	5	6	6	4
3.	Average price per acre		...	42	106	71	117	35	44	53	76
4.	} Percentage of line 2 in each soil class	R-1...	...	...	67	62	58	..	54	50	48
5.			R-2...	...	33	38	42	...	46	50	52
6.	Percentage of line 2 due to foreclosures		...	?	?	2	23	?	?	3	8



Records of Sales of Paddy Land.

Department at intervals of five years.

16				17				18				19				
	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18
1	949	1,284	2,318	1,558	307	443	772	444	774	1,774	1,790	893	1,137	2,169	1,895	1,434
2	4	5	8	5	4	6	9	5	6	13	12	6	5	9	8	6
3	22	21	24	33	21	24	17	33	19	27	34	69	25	47	62	93
4	...	22	23	17	...	16	22	17	...	69	70	56	...	80	83	74
5	...	78	77	83	...	84	78	83	...	31	30	44	...	20	17	26
6	?	?	2	6	?	?	...	2	?	?	4	...	?	?	...	2
20				21				22				23				
	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18
1	437	1,124	700	637	1,100	2,089	1,715	816	181	291	201	190	619	1,325	1,367	778
2	7	14	7	6	5	9	7	4	4	6	4	4	7	10	9	5
3	15	25	35	86	15	30	43	96	22	30	61	98	26	54	39	101
4	...	44	28	25	...	58	46	48	...	64	85	51	...	91	97	93
5	...	56	72	75	...	42	54	52	...	36	15	49	...	9	3	7
6	?	?	...	29	?	?	2	14	?	?	...	...	?	?	1	23
24				25				26				27				
	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18
1	73	291	896	843	...	158	643	679	123	202	122	268	...	29	28	118
2	2	4	7	5	...	4	13	6	4	8	4	4	...	3	2	6
3	6	18	24	79	...	16	14	30	5	13	6	24	...	16	23	17
4	...	81	61	52	...	77	61	31	...	75	26	65	...	97	54	54
5	...	19	39	48	...	23	39	69	...	25	74	35	...	3	46	46
6	?	?	..	13	...	?	...	2	?	?	...	...	...	?	...	...
28				29				All Tracts.								
	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18				
1	...	...	...	603	...	...	...	427	18,993	26,720	26,994	18,742				
2	...	...	...	7	...	...	...	4	5	7	7	4				
3	...	...	...	70	...	...	...	45	28	42	41	75				
4	...	...	...	All one class.	...	...	...	All one class.	...	68	62	53				
5	...	...	...		...	...	...		...	32	38	47				
6	...	...	...		...	...	...		...	?	?	2	7			



on the registers of the Land Revenue Department, at intervals of five years.

MISCELLANEOUS

Primary Tract.		8		9		15				
		1912-13.	1917-18.	1917-18.	1902-03.	1907-08.	1912-13.	1971-18.		
1	Area Sold {	Acres ..	10'26	33'58	3'64	11'13	9'26	8'84	6'45	
2		Percentage of the tract.	2'05	3'18	'74	4'57	2'48	2'58	3'28	
3	Average price per acre ...		19'49	22'97	50'82	30'01	37'80	22'62	15'50	
Primary Tract.		16		17		18		25	26	
		1902-03.	1917-18.	1907-08.	1912-13	1917-18	1917-18.	1917-18.	1917-18.	
1	Area Sold {	Acres ..	3'25	5'34	3'04	'80	20'74	14'07	2'12	1'87
2		Percentage of the tract.	1'55	10'89	23'38	'13	28'21	27'06	15'36	11'00
3	Average price per acre ...		12'31	16'73	6'58	2'74	14'46	2'84	45'87	26'74

DHANI.

Primary Tract.		8		9			10		11			
		1912-13.	1917-18.	1907-08.	1912-13.	1917-18.	1907-08.	1912-13.	1917-18.	1917-18.		
1	Area Sold {	Acres ..	'97	3'15	10'51	5'73	14'79	1'61	8'58	16'93	2'68	
2		Percentage of the tract.	'49	1'14	1'07	'57	1'13	'27	1'45	2'27	28'00	
3	Average price per acre ...		20'62	82'54	65'18	40'14	80'46	50'34	58'39	85'17	74'40	
Primary Tract.		12		23	24	25		26		27		
		1907-08.	1912-13.	1912-13.	1912-13.	1907-08.	1917-18.	1907-08.	1912-13.	1917-18.	1907-08.	
1	Area Sold {	Acres ...	3'95	4'41	10'74	4'30	2'50	'40	2'05	4'25	'78	'62
2		Percentage of the tract.	2'08	2'66	13'34	3'91	1'64	'22	6'65	8'10	'26	2'54
3	Average price per acre ...		27'85	50'69	98'62	23'06	24'00	125'00	49'12	90'53	222'22	16'39

**Statement 7A—Analysis of records**  
Based on the register of the Land Records

Primary Tract.		8				9			
		1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18
1	Area under mort- { Acre	56	407	1,000	3,091	1,141	786	3,169	8,256
2	gage. { Percentage of tract	...	3	6	20	3	3	10	24
3	Average rupees per acre {	..	..	7	14	..	..	20	16
4		..	..	10	11	..	..	13	23
5		..	6	7	13	10	10	19	18
6	Percentage of line 2 in each soil class {	..	21	..	..	..	15	..	..
7		..	79	..	..	..	85	..	..
8	Percentage of line 2 {	..	..	88	91	..	..	85	83
9		under { Usufructuary	..	..	12	9	..	..	15

  

Primary Tract.		10				11			
		1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18
1	Area under mort- { Acre	414	1,175	2,125	6,195	1,128	785	1,753	3,217
2	gage. { Percentage of tract	2	6	11	26	20	13	25	46
3	Average rupees per acre {	..	..	21	29	..	..	27	35
4		..	..	18	27	..	..	35	48
5		..	16	17	20	28	16	22	28
6	Percentage of line 2 in each soil class {	..	51	..	..	..	87	..	..
7		..	49	..	..	..	13	..	..
8	Percentage of line 2 {	..	..	81	75	..	..	88	92
9		under { Usufructuary	..	..	19	25	..	..	12

  

Primary Tract.		12				13			
		1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18
1	Area under mort- { Acre	24,915	11,335	29,871	53,447	1,033	442	1,452	2,789
2	gage. { Percentage of tract	25	11	27	48	29	9	26	49
3	Average rupees per acre {	..	..	36	50	..	..	37	47
4		..	..	40	63	..	..	33	39
5		..	25	36	36	51	15	21	37
6	Percentage of line 2 in each soil class {	..	92	..	..	..	90	..	..
7		..	8	..	..	..	10	..	..
8	Percentage of line 2 {	..	..	93	94	..	..	81	92
9		under { Usufructuary	..	..	7	6	..	..	19

  

Primary Tract.		14				15			
		1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18
1	Area under mort- { Acre	3,502	1,116	5,459	8,894	5,152	2,390	14,474	19,175
2	gage. { Percentage of tract	21	6	32	53	12	5	32	39
3	Average rupees per acre {	..	..	44	50	..	..	39	34
4		..	..	47	70	..	..	58	85
5		..	29	45	45	52	22	34	40
6	Percentage of line 2 in each soil class {	..	59	..	..	..	60	..	..
7		..	41	..	..	..	40	..	..
8	Percentage of line 2 {	..	..	94	92	..	..	95	89
9		under { Usufructuary	..	..	6	9	..	..	5



of Mortgages of Paddy Land.

Department, at interval of five years.

16				17				18				19				
	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18
1	9,526	1,167	6,727	14,915	241	259	1,110	2,384	2,682	546	2,779	5,642	4,333	2,409	6,072	11,043
2	11	5	25	47	3	3	13	27	20	4	18	35	21	10	24	43
3	...	...	25	23	...	...	23	24	...	...	29	34	...	...	36	45
4	...	...	27	35	...	...	27	25	...	...	40	61	...	...	64	99
5	16	20	25	24	17	22	83	24	16	24	29	35	16	27	38	47
6	...	37	...	...	...	5	...	...	...	77	...	...	...	82	...	...
7	...	63	...	...	...	95	...	...	...	23	...	...	...	18	...	...
8	...	...	92	90	...	...	95	88	...	...	96	94	...	...	96	95
9	...	...	8	1	...	...	5	12	...	...	4	6	...	...	4	5
20				21				22				23				
	1902-05	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18
1	784	336	2,321	2,923	3,660	1,422	4,421	7,725	755	163	1,274	2,205	1,040	2,397	5,557	8,740
2	13	4	25	26	18	6	19	36	16	4	28	47	11	17	35	51
3	...	...	27	34	...	...	26	42	...	...	26	48	...	...	36	51
4	...	...	29	...	...	...	40	105	...	...	...	...	...	...	42	69
5	11	24	27	34	15	18	26	43	13	26	26	48	21	32	36	52
6	...	48	...	...	...	63	...	...	...	60	...	...	...	96	...	...
7	...	52	...	...	...	37	...	...	...	40	...	...	...	4	...	...
8	...	...	97	100	...	...	98	98	...	...	100	100	...	...	85	92
9	...	...	3	...	...	...	2	2	...	...	...	...	...	...	15	8
24				25				26				27				
	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1912-13	1917-18
1	192	1,139	3,097	9,186	23	188	182	3,084	172	204	202	1,172	13	...	51	20
2	4	14	24	58	1	5	4	27	6	8	6	19	1	...	4	1
3	...	...	30	36	...	...	48	29	...	...	28	31	...	...	15	18
4	...	...	31	64	...	...	52	32	...	...	...	30	...	...	8	11
5	9	20	30	41	10	13	49	29	4	10	28	31	15	...	14	12
6	...	70	...	...	...	43	...	...	...	78	...	...	...	...	...	...
7	...	30	...	...	...	57	...	...	...	22	...	...	...	...	...	...
8	...	...	70	80	...	...	67	83	...	...	100	97	...	...	94	65
9	...	...	30	20	...	...	33	17	...	...	...	3	...	...	6	35
28				29				All tracts								
	1902-03	1907-08	1912-13	1917-18	1902-03	1907-08	1902-03	1917-18	1902-03	1907-08	1912-13	1917-18				
1	...	...	...	4,529	...	...	...	2,864	54,262	28,816	93,096	132,396				
2	...	...	...	52	...	...	...	28	15	8	23	29				
3	...	...	...	40	...	...	...	26	...	...	34	57				
4	...	...	...	73	...	...	...	35	...	...	37	55				
5	...	...	...	43	...	...	...	27	21	29	34	57				
6	...	...	...	...	...	...	...	...	...	76	...	...				
7	...	...	...	...	...	...	...	...	...	24	...	...				
8	...	...	...	90	...	...	...	85	...	...	92	87				
9	...	...	...	10	...	...	...	15	...	...	8	13				

Statement 7B.—Analysis of Records of  
Based on the Registers of the Land Records

GARDENS.

Primary Tract.		8	9	10	12	...					
1	Area mortgaged. { Acres ... Percentage of tract.	1907-08.	1912-13.	1907-08.	1912-13.	1907-08.	1912-13.	1917-18.	...		
2		68'85	68'60	9'6	7'8	4'33	7'31	6'36	12'41	26'16	...
3		4'25	28'96	7'89	7'01	1'39	1'52	1'29	2'31	4'25	...
Average rupees per acre.		29'56	39'94	32'20	277'78	34'64	34'20	264'78	78'26	71'48	...
Primary Tract.		14	15	16	...						
1	Area mortgaged. { Acres ... Percentage of tract.	1902-03.	1907-08.	1912-13.	1917-18.	1902-03.	1907-08.	1912-13.	1917-18.	1902-03.	1907-08.
2		2'60	7'4	6'48	67'82	33'93	14'96	32'81	116'63	1'89	28'78
3		1'24	7'33	2'78	33'25	1'69	7'3	1'49	4'81	08	1'31
Average rupees per acre.		30'77	135'1'35	68'67	56'92	13'41	25'40	56'84	34'81	10'58	76'27
Primary Tract.		16 continued.	17	18	19	...					
1	Area mortgaged. { Acres ... Percentage of tract.	1912-13.	1917-18.	1907-08.	1912-13.	1917-18.	1907-08.	1912-13.	1917-18.	...	
2		32	102'72	1'78	11'49	9'85	22'18	39'49	13'22	18'56	...
3		53	4'47	1'18	1'15	9'8	11'37	6'98	3'98	4'81	...
Average rupees per acre		43'29	54'19	89'89	112'09	41'67	34'27	10'64	32'56	52'81	...
Primary Tract.		20	21	22	23	...					
1	Area mortgaged. { Acres ... Percentage of tract.	1907-08.	1912-13.	1917-18.	1907-08.	1912-13.	1917-18.	1907-08.	1912-13.	1912-13.	...
2		7'21	19'14	37'38	7'87	4'74	18'86	1'21	2'33	1'13	...
3		5'17	13'48	9'18	7'22	1'01	10'03	3'10	5'68	5'95	...
Average rupees per acre		52'52	23'51	30'76	287'36	85'44	180'81	82'64	85'84	97'34	...

**Mortgages of Other than Paddy Land.***Department, at intervals of five years.*

## MISCELLANEOUS.

Primary Tract		8	15	17	
		1912-13.	1912-13.	1907-08.	
1	} Area mortgaged {	Acres	4'60	2'11	1'25
2		Percentage of tract	'92	'38	9'61
3	Average rupees per acre ..		36'96	23'70	80'00

## DHANI.

Primary Tract.		9	10	12	23	24	25			
		1907-08.	1912-13.	1907-08.	1912-13.	1912-13.	1912-13.	1912-13.		
1	} Area mortgaged. {	Acres	'36	'91	6'15	21'59	17'23	10'14	4'30	18'27
2		Percentage of tract	'04	'09	1'03	8'66	10'38	13'34	3'91	13'84
3	Average rupees per acre ...		83'33	10'99	84'55	80'18	28'44	9'86	23'26	164'20

Statement 8.—Rainfall recorded

Station. (1)	Years.	1899		1900		1901		1902		1903		1904		1905		1906		1907		1908			
		(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)		
		(c)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	
Myaungmya.	January-March	...	...	...	...	6	8.17	1	0.11	...	...	...	...	...	...	1	0.12	4	3.69	1	0.94		
	April	...	...	6	1.70	1	0.29	...	...	1	0.27	...	...	8	2.55	...	...	1	0.08	1	0.29		
	May	...	...	20	31.98	17	6.34	14	11.43	18	18.12	19	6.06	8	4.22	13	9.60	9	7.51	16	21.03	16	9.58
	June	...	...	19	15.88	25	27.08	18	14.98	17	8.99	24	20.33	27	22.51	26	22.21	21	18.98	23	27.65	26	29.61
	July	...	...	21	14.38	20	24.55	25	18.00	24	23.22	27	25.11	25	20.26	23	22.43	19	15.63	23	15.72	25	18.68
	August	...	...	23	15.47	24	23.17	28	22.89	21	15.33	27	20.20	24	25.53	24	14.26	17	11.24	26	27.42	26	23.75
	September	...	...	26	14.82	23	18.50	20	13.06	19	18.22	21	10.52	20	13.57	21	15.83	21	20.32	21	13.53	17	7.29
	October	...	...	9	4.06	17	8.12	18	15.94	11	7.29	14	8.98	5	2.96	9	6.45	14	5.67	16	12.66	12	5.96
	November	...	...	6	4.10	2	0.24	4	0.89	2	1.59	6	3.51	10	7.22	1	0.48	2	1.27	3	2.08	9	4.16
	December	...	...	...	...	1	0.35	...	...	2	0.70	1	0.04	1	0.10	2	1.33	...	...	3	5.59	...	...
	Total	...	...	128	105.94	185	117.99	158	99.90	119	93.95	133	94.74	121	99.17	119	92.86	106	80.97	136	139.50	156	98.26
	Wakama.	January-March	...	...	...	...	3	3.02	2	0.82	1	0.40	...	...	1	0.46	...	0.03	4	2.54	...	...	
April		...	...	4	1.85	1	0.15	...	0.04	...	0.03	...	...	2	1.29	...	0.03	...	...	...	...		
May		...	...	21	35.25	9	7.28	15	7.08	15	22.08	12	6.74	8	12.26	14	11.65	6	6.72	16	12.63	14	12.12
June		...	...	20	17.27	21	19.71	24	16.79	17	7.59	21	14.67	22	24.26	22	18.20	27	18.59	18	19.20	23	29.04
July		...	...	20	14.82	24	20.22	25	21.22	26	24.41	24	20.70	25	21.94	24	22.77	24	19.31	22	17.42	27	18.00
August		...	...	22	15.55	22	21.76	20	22.62	21	16.70	22	22.21	25	22.63	27	17.77	17	9.80	29	21.14	20	22.14
September		...	...	22	14.44	19	16.17	15	4.93	21	12.29	14	10.01	20	16.80	20	15.47	21	19.72	20	11.01	18	9.06
October		...	...	6	2.60	9	4.13	21	16.84	12	9.11	14	6.07	9	1.90	12	4.68	7	5.27	16	8.10	8	4.40
November		...	...	3	0.75	1	0.26	3	2.15	4	1.25	5	2.22	11	5.86	...	0.02	3	1.24	4	0.92	9	3.54
December		...	...	...	...	1	0.28	2	0.90	...	...	...	...	1	0.17	2	1.06	...	...	2	2.18	...	...
Total		...	...	118	102.44	137	90.80	127	95.48	120	96.28	119	81.10	124	107.01	126	92.12	105	75.79	122	96.14	120	92.26
Elaine.		January-March	...	...	...	...	2	2.62	1	0.11	...	...	...	...	...	...	...	...	2	2.24	1	0.55	
	April	...	...	7	6.74	...	...	...	...	1	0.06	...	...	1	0.12	...	...	...	...	...	...		
	May	...	...	25	25.04	6	1.26	12	5.72	12	10.82	9	5.29	...	...	14	6.84	7	5.99	12	8.25	11	11.02
	June	...	...	26	12.22	21	14.86	22	16.45	16	11.22	18	17.02	22	19.75	18	14.26	15	11.42	17	12.42	21	12.15
	July	...	...	27	17.36	23	8.54	27	15.74	28	25.90	22	15.80	27	24.22	26	25.19	21	12.66	25	9.12	26	12.46
	August	...	...	28	16.29	30	22.22	29	12.88	27	17.05	25	10.72	22	24.74	22	8.08	16	6.12	20	20.22	27	17.24
	September	...	...	26	10.71	15	9.68	25	11.10	26	9.97	10	4.85	15	7.84	18	11.29	22	10.72	26	12.70	20	12.72
	October	...	...	7	1.40	...	...	26	20.75	5	2.21	6	1.70	4	3.84	8	5.42	6	1.24	16	11.09	9	4.20
	November	...	...	3	1.19	...	...	3	1.20	...	...	...	...	6	1.22	...	...	...	...	2	0.70	12	9.15
	December	...	...	...	...	...	...	...	...	2	0.20	...	...	...	...	...	...	...	...	2	2.21	...	...
	Total	...	...	149	90.05	95	62.22	151	86.26	119	72.02	108	67.27	104	86.22	110	72.72	87	55.61	126	122.67	127	92.60

Note.—Measures are in inches. A "rainy day" is a day



during the last twenty years.

1909		1910		1911		1912		1913		1914		1915		1916		1917		1918		Averages.	
(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
(88)	(84)	(86)	(85)	(87)	(38)	(89)	(90)	(81)	(82)	(83)	(84)	(85)	(86)	(87)	(88)	(89)	(40)	(41)	(42)	(43)	(4)
1	0 80			1	0 02	2	0 74	1	0 12			1	0 82			2	8 84	1	0 20	1 2	0 71
2	0 55	4	1 75	3	0 94	1	0 89			1	0 20	2	0 44							1 3	0 80
19	8 41	11	11 00	8	9 17	7	5 60	13	6 11	12	6 59	18	10 04	15	12 61	8	2 22	22	12 42	12 5	11 45
27	16 99	19	6 84	20	25 49	22	15 39	19	12 43	23	27 80	23	12 78	27	22 40	24	20 85	16	12 80	22 4	20 42
27	19 92	19	14 84	26	12 90	28	24 62	21	19 06	27	20 24	29	23 62	23	15 06	22	11 85	21	11 42	23 9	12 24
29	10 67	25	25 73	24	17 15	24	12 77	27	22 12	26	25 07	18	15 70	21	21 00	23	12 16	19	1 06	22 7	20 40
18	20 42	23	19 10	17	11 65	16	12 81	18	10 14	15	10 76	16	10 26	20	11 61	22	14 54	21	13 6	12 1	14 22
12	6 82	12	4 87	14	11 69	12	6 43	12	4 05	7	7 85	12	9 22	14	11 76	22	17 96	8	2 77	12 6	8 72
9	9 99	8	4 02	...	...	5	1 22	8	12 97	6	2 04	4	2 00	2	2 63	2	2 19	7	2 8	5 2	2 40
1	0 15	...	...	...	...	...	...	...	...	1	1 12	2	2 55	1	1 06	2	3 54	2	0 35	1 0	0 21
129	94 72	121	87 66	113	96 31	118	88 10	119	93 08	121	122 82	121	102 99	122	112 01	124	96 69	111	8 9	124 4	92 66
1	0 80	3	1 22	...	...	4	1 52	...	...	...	...	1	0 26	...	...	1	0 20	1	0 19	1 1	0 29
2	0 47	5	5 24	9	0 70	1	0 22	...	...	2	0 57	2	0 24	1	1 42	...	...	...	...	1 1	0 62
16	12 92	11	12 04	10	8 27	11	6 36	14	7 67	11	7 72	16	17 04	11	11 92	7	4 42	20	17 22	12 2	12 40
25	17 66	16	6 77	25	12 22	19	14 52	16	10 12	24	24 42	21	12 47	27	22 62	22	21 62	12	10 72	21 9	17 42
28	20 02	14	12 67	29	19 25	27	25 64	24	22 22	29	25 42	23	15 01	16	10 15	22	16 72	22	11 22	22 9	10 02
31	20 90	22	21 57	22	12 19	22	12 44	26	12 22	22	20 92	22	12 21	19	12 22	24	16 94	25	12 97	24 2	12 04
21	12 87	25	14 95	20	17 24	17	12 76	16	12 62	16	12 01	16	11 12	20	12 22	24	14 05	20	11 92	12 2	12 44
12	8 59	10	4 12	11	6 60	12	2 22	8	2 20	8	2 02	15	14 61	9	4 52	17	12 66	10	2 94	11 1	7 01
14	10 27	8	1 22	...	...	4	2 10	8	12 62	5	2 72	4	2 52	2	4 22	2	0 74	5	2 22	4 2	2 04
...	...	...	...	...	...	...	...	...	...	1	1 17	2	2 66	...	0 22	2	2 02	1	0 22	0 2	0 71
129	102 21	115	82 00	120	87 22	112	92 50	112	22 02	121	102 22	122	92 17	106	92 22	122	92 02	122	72 22	120 2	92 21
1	1 00	2	1 70	...	...	3	1 22	...	...	...	...	...	...	...	...	2	1 21	1	0 22	0 2	0 22
2	2 20	2	1 26	2	2 27	...	...	...	...	1	2 22	1	1 40	1	0 22	...	...	2	1 22	1 0	1 02
17	11 72	8	12 27	7	6 22	12	2 22	4	2 20	11	7 22	12	12 22	12	12 07	12	2 62	22	22 22	11 2	2 22
24	14 02	12	15 20	21	21 22	17	12 62	22	21 42	22	22 14	20	17 40	27	12 02	22	24 02	12	11 02	21 1	17 12
26	12 67	20	14 10	20	12 02	24	27 02	21	22 02	27	20 27	27	22 62	22	20 12	17	17 77	22	22 22	22 0	22 22
14	2 72	22	12 72	22	21 21	20	12 00	20	21 21	22	21 22	24	22 12	22	20 01	27	24 72	22	12 22	22 2	12 22
20	11 21	20	12 62	17	11 64	12	11 24	24	14 74	12	12 10	10	4 22	14	7 62	19	12 77	19	12 20	12 6	11 12
12	12 77	9	2 12	12	6 62	14	6 62	20	2 62	2	2 40	12	6 22	9	2 70	11	2 22	6	7 22	10 2	2 22
2	2 14	8	1 20	...	...	2	2 12	2	2 62	6	1 72	2	0 22	4	1 62	1	1 20	2	1 20	2 2	2 12
...	...	...	...	...	...	...	...	...	...	1	0 72	2	2 12	...	...	4	2 72	1	0 20	0 2	0 42
121	21 22	100	72 27	102	22 21	102	27 22	122	112 20	117	112 12	114	100 17	112	92 12	112	22 24	120	22 20	117 0	22 22

on which the fall exceeds one-tenth of an inch.

Statement 10. - Outturns of Paddy Lands.

Tract.	Soil Class.	Assumed out-turn per acre.	Outturns by holdings.				Number of experi-ments in year.				Acres reaped in the experi-ments.				Median outturn per acre in year				Average outturn per acre in year.				Average outturn in three years.	Outturns in Current Settlement.*
			Acres in each class		Outturns in thousands of baskets.		Number of experi-ments in year.		Acres reaped in the experi-ments.		Median outturn per acre in year		Average outturn per acre in year.		Median outturn per acre in year		Average outturn per acre in year.							
			Worked	Fal-low.	Year	Stated by Cultiva-tor.	Calcu-lated at assumed rates.*	Number of experi-ments in year.	Acres reaped in the experi-ments.	Median outturn per acre in year	Average outturn per acre in year.	Median outturn per acre in year	Average outturn per acre in year.	Median outturn per acre in year	Average outturn per acre in year.									
8	1	32	542	10	4326	...	14	10	10	7	6	5	30	35	34	34	33	33	33	30	E	30		
	2	...	987	104	4397	...	82	59	43	41	29	20	26	26	28	27	27	28	28	28			E	30
	3	12	446	180	4576	5.06	48	43	27	41	23	18	25	21	21	24	26	22	25	25				
9	1	35	2,328	124	2546	...	19	13	11	11	7	0	36	35	35	34	34	35	35	35	D	35		
	2	24	6,535	652	2689	260.9	107	76	64	59	42	32	27	26	29	27	27	27	28	28			D	25
	3	14	1,514	298	2715	24.1	36	30	22	29	17	11	19	18	20	21	21	22	22	23				
10	1	42	1,997	29	2687	...	22	14	16	18	-7	7	45	37	40	43	40	43	40	40	C	40		
	2	29	5,784	159	2802	275.6	73	53	45	40	29	21	34	32	31	33	32	32	31	31			C	30
	3	16	1,180	304	2896	10.7	10	11	6	5	5	3	27	28	25	26	26	26	28	25				
11	1	45	1,329	...	1116	...	8	4	5	4	3	2	50	42	46	46	42	46	43	40	C	40		
	2	30	1,775	58	995	114.4	10	10	4	7	5	2	33	37	44	38	33	33	33	47			I	30
	3	16	85	7	1183	1.8	1	1	..	1	1	..	24	38	..	24	24	24	38	..				
12	1	51	3,026	62	2,293	...	222	175	..	120	101	..	51	47	..	51	46	46	..	49	I	50		
	2	36	28,394	590	2,654	2,615	181	136	..	97	73	..	45	49	..	45	48	44	..	44			I	40
	3	20	2,676	269	2,615	2.9	18	12	..	5	5	..	39	27	..	36	27	27	..	27				

14	1	48	825	...	1918	5786	...	18	14	...	9	6	...	49	44	...	53	54	...	II	40 30		
	2	33	777	6637 78	1917 1916 N	6187 6119 6686	10	6	...	5	2	...	48	44	...	43	47	...	W			50 35	
	3	18	74	...	...	...	...	...	...	...	...	...	...	49	47	...	40	40					...
15	1	50	9,724	...	1917	69970	...	60	44	...	39	26	...	49	44	...	32	45		...	X		45 30
	2	34	5,491	6987 4.1	1916 1915 N	6601 6679 6766	23	16	...	14	9	...	49	47	...	43	49	...	X	45 30			
	3	18	1,429	...	...	...	2	1	...	...	2	...	...	42	38	...	39	40				...	
16	1	46	17,222	...	1917	1,286	...	109	74	...	75	44	...	49	45	...	49	45			...	I	50 40
	2	32	13,267	1,281 22	1916 1915 N	1,200 1,236 1,240	77	53	...	44	30	...	48	48	...	44	48	...	I	50 40			
	3	26	4,573	...	...	...	18	23	...	...	11	...	...	47	43	...	40	42			...		
17	1	42	4,096	...	1917	4857	...	38	22	...	22	11	...	47	43	...	48	43			...	I	50 40
	2	28	5,181	406.0 28.8	1916 1915 N	3196 4113 4027	69	53	...	37	28	...	...	40	41	...	39	33	...	I	50 40		
	3	14	6,352	...	...	...	41	43	...	...	21	20	...	32	35	...	22	27	...				
18	1	38	457	...	1917	6845	...	6	6	...	3	3	...	47	41	...	47	38	...			I	50 40
	2	26	802	5694 1076	1916 1915 N	4453 6032 6118	15	9	...	8	4	...	...	40	49	...	40	49	...	I	50 40		
	3	24	1,337	...	...	...	13	8	...	...	6	4	...	30	31	...	26	24	...				
19	1	45	2,079	...	1918	2507	...	26	20	...	15	...	...	45	52	...	49	53	...			I	50 40
	2	30	4,516	4519 98	1917 1916 N	2012 2695 2904	21	31	...	14	17	...	...	45	51	...	46	62	...	I	50 40		
	3	25	1,728	...	...	...	3	7	...	...	1	4	...	41	43	...	40	43	...				

Statement 10.—Outturns of Paddy Lands—concluded.

Tract.	Soil Class.	Assumed out-turn per acre.	Outturns by holdings.						Crop-Reaping Experiments.												Outturns in Current Settlement.*			
			Acres in each class.		Outturns in thousands of baskets.			Number of cultivators examined.	Number of experiments in year.			Acres reaped in the experiments.			Median outturn per acre in year.			Average outturn per acre in year.			Average outturn in three years.	Tract.	Outturns.	
			Worked.	Fallow.	Year.	Stated by Cultivator.	Calculated at assumed rates.*		1917	1918	1919	1917	1918	1919	1917	1918	1919	1917	1918	1919				1917
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	
19	1	50	4,650	2	1918	561.9	...	665	42	56	.	24	34	..	47	49	..	48	49	..	49	I	50	
	2	34	7,908	94	1917	640.0	540.5		43	43	...	22	24	...	47	50	..	45	52	...	49			
	3	18	2,174	151	1916 N	627.0 619.7	6.0		2	7	.	2	4	.	46	44	...	44	46	..	45			
20	1	42	502	...	1919	73.70	..	97	11	9	11	7	4	5	44	42	41	44	42	41	42	D	35	
	2	28	1,410	7	1918	84.06	68.81		19	19	16	11	11	9	40	38	44	41	41	41	43			40
	3	15	550	161	1917 N	86.58 85.73	2.61		3	4	3	2	2	1	47	37	33	44	38	34	34			39
21	1	46	2,603	...	1919	331.8	...	389	28	29	27	17	16	15	40	38	42	41	40	40	40	G	40	
	2	32	5,489	19	1918	353.7	342.5		39	36	36	23	20	20	39	39	42	39	40	41	40			41
	3	18	2,616	152	1917 N	362.2 370.4	3.3		9	5	2	5	3	1	40	32	40	40	41	35	39			38
22	1	42	582	...	1919	51.94	...	52	5	8	7	3	4	4	46	34	36	40	31	38	36	C	40	
	2	30	798	...	1918	57.76	54.70		4	4	2	2	2	1	35	35	36	36	35	38	33			35
	3	16	395	4	1917 N	60.19 64.40	1.06		4	1	2	2	1	1	34	35	37	35	36	37	35			37
23	1	48	3,693	3	1918	45.9	...	352	31	21	...	16	11	...	58	52	...	59	49	...	55	I	50	
	2	33	5,100	70	1917	399.1	354.3		14	16	.	7	9	.	49	40	...	51	41	...	46			
	3	18	486	20	1916 N	378.9 385.8	2.8		3	3	...	1	2	...	47	40	...	46	42	...	44			38



1	44	1450	2	1919	171'0	...	103	36	18	16	14	14	16	18	6	44	40	43	40	38	40	IV	35
2	30	3068	66	1918 1917 N	274'8 180'5 181'9	164'3 3'9	10	20	7	10	13	13	10	5	35	37	43	36	43	38	35	IV	25
3	16	726	112				2	4	1	2	2	2	2	1	26	24	22	24	20	22	25		
1	40	272	...	1919	48'09	...	71	17	8	8	8	8	8	4	42	41	39	39	40	40	IV	35	
2	28	923	26	1918 1917 N	40'55 48'38 51'00	47'54 1'67	13	26	10	13	24	24	13	10	32	41	41	33	33	33	33	IV	25
3	15	721	63				5	8	1	5	3	3	5	1	29	36	24	24	28	25	24		
1	36	90	..	1919	13'00	...	22	9	1	1	9	9	1	1	30	33	42	30	42	42	IV	35	
2	25	244	22	1918 1917 N	13'18 13'20 13'20	11'88 .96	10	20	6	13	10	10	13	6	31	30	37	30	31	37	35	IV	25
3	14	182	29				6	12	6	6	8	8	6	4	27	20	31	31	33	33			
1	34	8	..	1919	5'12	...	15	...	...	...	...	...	...	...	...	...	...	...	...	...	IV	35	
2	24	111	3	1918 1917 N	5'90 5'98 5'67	3'88 .25	4	7	4	4	4	4	4	2	24	34	31	26	30	30	30	IV	25
3	15	63	18				5	10	3	5	2	2	5	1	22	18	27	22	27	27			
1	42	1,161	17	1917	78'68	...	107	19	6	10	...	...	10	6	45	43	44	45	44	44			
2	28	861	74	1916 1915 N	69'45 66'34 74'73	74'55 3'59	8	5	5	8	...	...	8	5	39	40	42	38	42	...	...		
3	14	120	58				1	...	1	...	...	...	...	1	32	40	...	33	...	...			
1	38	595	6	1917	40'22	...	76	28	3	11	...	...	11	3	48	47	48	50	48	49			
2	26	756	93	1916 1915 N	37'96 36'79 43'54	40'12 3'31	10	17	10	8	...	...	8	10	39	38	48	38	42	...	...		
3	14	98	48				1	1	1	1	...	...	1	1	33	36	...	38	...	...			

Statement 12A.—Cost of

Tract.	Race of owner.	No. of owners.	Stock.					Cost of Changes						
			Initial.	Working Seasons.				Head.	Purchases.		Head.	Home-bred.		
				1	2	3	4		Total.	Average per head.		Total.	Average per head.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
8	B	13	26	36	35	41	39	22	1,275	58	7	245	35	
	K	49	107	112	128	128	145	29	1,701	59	48	2,335	49	
	All	62	133	148	163	169	184	51	2,976	58	55	2,580	47	
9	B	15	24	34	36	38	41	40	2,826	71	2	65	33	
	K	80	226	250	252	258	258	60	4,112	69	34	2,055	60	
	All	95	250	284	288	296	299	100	6,938	69	36	2,120	59	
10	B	23	46	52	56	56	56	31	2,125	69	6	290	48	
	K	47	123	129	134	131	131	29	2,037	70	15	865	58	
	All	71	171	183	191	191	191	62	4,242	68	23	1,275	55	
11	B	16	26	33	33	35	34	15	1,105	74	4	190	48	
	N	1	...	...	...	...	4	4	400	100	...	...	...	
	All	17	26	33	33	35	38	19	1,505	79	4	190	48	
12	B	265	435	511	546	588	621	350	27,768	79	51	3,385	66	
	K	66	128	142	151	149	148	64	4,416	69	7	420	60	
	All	308	637	745	797	837	877	476	37,807	79	65	4,485	69	
13	B	9	15	17	21	18	23	9	745	83	7	585	84	
	K	1	2	2	1	1	2	1	160	160	...	...	...	
	All	15	21	23	28	27	37	16	1,300	81	9	735	82	
14	B	45	44	61	81	88	99	69	4,369	63	2	100	50	
	K	43	39	55	73	82	85	44	3,077	70	8	475	59	
	All	90	89	122	160	176	194	117	7,846	67	10	575	58	
15	B	80	86	113	141	166	169	108	7,337	68	17	905	53	
	K	150	236	264	320	314	315	128	10,202	80	22	1,360	62	
	All	241	352	415	503	528	536	247	18,017	73	54	2,875	53	
16	B	45	84	97	111	99	100	51	3,976	78	6	375	63	
	K	96	137	167	205	207	217	71	5,183	73	33	1,990	60	
	All	154	254	306	359	349	364	135	10,041	74	48	2,585	60	
17	B	15	17	22	33	33	33	28	1,720	61	8	455	57	
	K	33	52	62	66	69	71	16	1,055	66	9	570	64	
	All	57	74	89	108	113	113	50	3,295	64	17	1,025	60	
18	B	33	47	65	73	75	78	45	3,498	78	15	910	61	
	K	13	20	25	27	28	30	10	652	65	4	200	50	
	All	48	67	90	102	109	114	61	4,640	76	19	1,110	58	

## Replacing Cattle.

of Stock.			Deaths.			Apparent Cost.		Increase of stock.		True Cost.		
Head.	Sales.		Head.	Cash obtained.		Total 4 years.	Per head per year.	No.	Value.	Stock main- tained	Total cost 4 years.	Per head per year.
	Total.	Average per head.		Total.	Average per head.							
(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
						Rs.						
4	200	50	12	2	...	1,318	8.4	13	650	26	668	6.4
10	142	14	29	169	6	3,725	6.4	38	532	107	3,193	7.5
14	342	24	41	171	4	5,043	6.9	51	1,224	133	3,819	7.2
3	90	30	22	19	1	2,782	17.0	17	1,105	24	1,677	17.5
6	300	50	56	52	1	5,315	5.6	32	1,600	226	4,215	4.7
9	390	43	78	71	1	8,597	7.2	49	2,708	250	5,892	5.9
22	1,185	54	5	10	2	1,220	5.4	10	540	46	680	3.7
7	265	38	29	103	4	2,534	4.8	8	304	123	2,230	4.5
1	60	60	1	...	...	140	8.8	2	120	2	20	2.5
30	1,510	50	35	113	3	3,894	5.1	20	1,000	171	2,894	4.2
7	210	30	4	24	6	1,061	7.8	8	488	26	573	5.5
...	...	...	...	...	...	400	25.0	4	400	...	...	...
7	210	30	4	24	6	1,461	9.6	12	888	26	573	5.5
107	7,521	70	108	175	2	23,457	9.4	186	13,020	435	10,437	6.0
21	1,215	58	30	22	1	3,590	6.1	20	1,160	128	2,439	4.8
24	1,493	62	11	...	...	4,810	11.1	34	2,108	74	2,702	9.1
152	10,229	67	149	197	1	31,266	9.1	240	10,080	637	15,780	6.2
6	470	78	2	...	...	860	9.3	8	624	15	236	3.9
1	85	85	...	...	...	75	9.4	...	...	2	75	9.4
...	...	...	...	...	...	545	11.4	8	560	4	15	1.9
7	555	79	2	...	...	1,480	10.0	16	1,264	21	216	2.6
6	355	59	10	10	1	4,104	10.4	55	3,245	44	859	4.9
...	...	...	6	...	...	3,552	10.4	46	2,990	39	562	3.6
...	...	...	...	...	...	400	10.0	4	400	6	...	...
8	355	59	16	10	1	8,056	10.4	105	6,195	89	1,861	5.2
30	1,396	47	12	10	...	6,236	10.1	83	3,901	86	2,935	8.5
20	1,223	61	51	11	...	10,328	8.2	79	4,819	236	5,509	5.8
3	301	100	1	...	...	787	3.8	22	924	30	137	1.5
53	2,220	55	64	21	...	17,951	8.4	184	10,220	352	9,107	6.5
11	460	42	30	20	1	3,871	9.7	16	672	84	3,199	9.5
8	468	59	16	12	1	6,094	7.7	80	4,720	137	1,974	3.6
...	...	...	3	3	1	1,099	5.8	14	854	33	245	1.9
19	928	49	49	34	1	11,664	8.0	120	5,290	254	6,274	6.2
9	515	57	11	...	...	1,660	12.6	26	912	17	742	11.1
6	370	62	...	...	...	2,255	4.4	29	1,178	52	77	1.4
...	...	...	...	...	...	420	9.5	6	420	5	...	...
25	885	59	11	...	...	3,235	7.3	41	2,419	74	916	3.1
16	1,045	65	13	7	1	3,356	10.8	32	2,015	47	1,341	7.1
3	170	57	1	...	...	622	5.7	10	570	20	112	1.2
...	...	...	...	...	...	490	20.4	6	490	...	...	...
29	1,215	64	14	7	1	4,528	9.9	47	3,008	67	1,220	5.7

Statement 12A.—Cost of

Fract.	Race of owner.	No of owners.	Initial.	Stock.				Cost of changes						
				Working Seasons				Purchases.			Home-bred.			
				1	2	3	4	Head.	Price.		Head.	Value.		
									Total.	Average.		Total.	Average per head.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
19	B	70	141	154	159	161	167	67	5,336	80	6	260	43	
	K	21	51	53	58	60	60	14	1,237	88	5	320	64	
	N	6	18	20	22	21	19	11	820	75	...	...	...	
	All	97	210	227	239	242	240	92	7,393	80	11	580	53	
20	B	14	44	51	46	43	50	25	2,050	82	3	190	63	
	K	2	6	6	6	5	5	2	170	85	...	...	...	
	N	7	18	18	21	25	32	6	1,690	65	5	300	60	
	All	23	68	75	73	74	87	53	3,910	74	8	490	61	
21	B	36	101	113	123	131	139	100	7,965	80	7	330	47	
	K	16	40	46	48	19	19	11	2,270	73	4	260	65	
	N	6	4	1	12	22	26	23	1,456	63	...	...	...	
	All	58	145	160	183	202	224	154	11,691	76	11	590	54	
22	B	12	32	32	31	3	46	30	1,945	65	6	355	59	
	N	3	12	12	12	12	16	6	540	90	...	...	...	
	All	15	44	44	40	46	62	36	2,485	69	6	355	59	
23	B	45	74	92	103	103	109	66	4,455	68	7	500	71	
	K	9	10	18	19	20	23	27	1,975	73	...	...	...	
	N	7	6	6	8	26	31	29	2,435	84	...	...	...	
	All	61	90	116	130	149	163	122	8,865	73	7	500	71	
24	B	22	36	41	43	52	51	30	2,059	69	12	625	52	
	K	10	20	21	23	21	23	5	310	62	3	140	47	
	N	2	...	...	...	...	...	4	300	75	...	...	...	
	All	34	56	61	66	78	78	39	2,669	68	15	765	51	
25	B	17	21	28	29	29	37	24	859	36	5	200	40	
	K	4	14	14	14	19	19	10	...	...	5	290	58	
	All	11	15	42	43	48	56	24	859	36	10	490	49	
26	B	7	17	17	15	14	17	3	200	67	3	170	57	
	K	6	18	18	16	18	20	3	75	25	6	350	58	
	All	13	35	35	31	32	37	6	275	46	9	520	58	
27	B	2	5	7	5	5	7	2	60	30	2	75	58	
	K	2	2	2	2	1	2	2	160	80	...	...	...	
	All	4	7	9	7	6	9	4	220	58	2	75	58	
28	B	24	34	36	42	48	48	30	1,657	55	6	355	59	
	K	2	5	6	...	6	6	...	...	...	1	50	50	
	All	27	39	42	54	54	66	32	1,907	60	7	405	58	
29	B	43	18	22	23	30	47	35	1,647	47	1	60	60	
	K	7	7	8	9	8	13	9	515	57	...	...	...	
	All	50	25	30	32	38	60	44	2,162	49	1	60	60	
All	...	1,595	2,828	3,282	3,633	3,799	4,087	1,940	1,40,943	73	422	24,285	58	



Replacing Cattle—concluded.

of Stock.						Apparent cost.		Increase of stock.		True cost.		
Sales.			Deaths.			Total 4 years.	Per head per year.	No.	Value.	Stock main- tained.	Total cost 4 years.	Per head per year.
Head. (15)	Price.		Heads. (18)	Cash obtained.								
	Total. (16)	Average per head. (17)		Total. (19)	Average per head. (20)							
31	1,961	63	16	31	2	Rs. 3,604	5'4	26	1,638	241	1,966	3'5
5	340	68	5	7	1	1,210	5'0	9	612	51	598	2'9
8	305	38	2	...	...	515	6'8	1	38	18	477	6'6
44	2,600	59	23	38	2	5,329	5'4	30	2,124	110	3,205	3'8
4	280	70	18	42	2	1,918	9'6	6	490	44	1,498	8'5
...	...	...	3	6	2	164	8'2	1	85	6	79	3'3
6	205	34	11	...	...	1,785	13'9	14	868	18	917	12'7
19	485	49	32	48	2	3,867	11'1	9	1,373	68	2,494	9'2
25	1,543	62	44	168	4	6,584	11'8	38	2,356	101	4,228	10'5
8	335	42	8	43	5	2,152	9'1	19	798	40	1,354	8'5
...	...	...	1	...	...	1,456	14'0	28	1,386	4	70	4'4
33	1,878	57	53	211	4	10,192	11'4	79	4,503	145	5,689	9'8
12	830	69	10	9	1	1,461	7'9	14	966	32	495	3'9
...	...	...	2	...	...	540	8'4	4	360	12	180	3'8
12	830	69	12	9	1	2,001	8'1	18	1,242	44	759	4'3
25	1,445	58	13	19	1	3,491	8'0	35	2,030	74	1,461	4'9
2	65	33	12	5	...	1,905	20'7	13	910	10	995	24'9
4	300	75	...	...	...	2,135	17'2	25	1,875	6	260	10'8
31	1,810	58	28	24	1	7,531	11'6	73	4,815	90	2,716	7'5
11	325	30	16	71	4	2,288	11'2	15	900	36	1,388	9'6
2	170	85	3	...	...	280	3'0	3	255	20	25	3
...	...	...	...	...	...	300	18'8	4	300	...	...	...
13	498	38	19	71	4	2,868	9'2	22	1,455	56	1,413	6'3
12	473	39	1	...	...	586	4'0	16	624	21	38	5
...	...	...	...	...	...	290	3'8	5	290	14	...	...
12	472	39	1	...	...	876	3'9	21	819	35	57	4
2	159	75	4	30	8	190	2'8	...	...	17	190	8'8
1	19	19	6	7	1	399	5'0	2	38	18	361	5'5
3	169	59	10	37	4	589	4'0	2	112	38	477	3'4
2	59	25	...	...	...	85	3'0	8	50	5	35	1'8
2	200	100	...	...	...	40	5'0	...	...	2	40	5'5
4	280	63	...	...	...	45	1'3	2	126	7	31	3'9
10	610	61	9	5	3	1,397	6'0	24	1,464	24	67	5
...	...	...	...	...	...	50	2'1	1	50	5	...	...
...	...	...	...	...	...	250	31'3	2	250	...	...	...
10	610	61	2	5	3	1,997	6'4	27	1,647	39	60	3
6	230	38	1	...	...	1,477	7'9	29	1,202	18	375	5'2
1	60	60	9	...	...	455	8'8	6	360	7	95	3'4
7	290	41	3	...	...	1,932	8'1	35	1,435	25	497	5
510	29,435	58	643	1,091	2	1,34,802	8'4	1,209	69,944	2,828	66,134	5'8

Statement 12B.—Cost of

Tract.	Race.*	Status.†	Whole-time adult workers.			Acres worked.	Average cost per acre of									Cost per acre.	
			Number examined	M	F		Seed.	Cattle.	Labour.	Interest.	Implements.	Hut and Byres.	Irrigation and Bunding.	Other expenditure.	Average Total.	Assumed.	
																	(4)
8	B	O	8	1'5	'3	170	0'4	2'7	6'0	0'5	0'6	...	0'2	...	10'4	9'5 (Rs. 10 1/2 8A).	
		T	8	1'8	'6	232	0'6	3'7	4'8	0'2	0'4	0'1	...	...	9'8		
		All	16	1'6	'4	402	0'5	3'3	5'3	0'3	0'5	0'1	...	...	10'1		
	K	O	36	1'3	'7	619	0'6	3'0	3'1	0'2	0'5	...	...	...	7'4		
		T	25	1'3	'3	549	0'5	4'1	4'6	0'2	0'3	...	...	...	9'7		
		All	61	1'3	'5	1,168	0'5	3'5	3'8	0'2	0'4	...	...	...	8'4		
BK	All	77	1'4	'5	1,570	0'5	3'4	4'2	0'2	0'4	...	...	...	8'7			
9	B	O	5	2'2	...	102	0'6	3'1	7'1	0'3	1'0	...	0'6	...	12'7	10'5	
		T	14	1'4	...	347	0'6	3'9	7'1	0'6	0'3	0'1	0'1	...	12'7		
		All	19	1'6	...	449	0'6	3'7	7'1	0'5	0'5	0'1	0'2	...	12'7		
	K	O	61	1'4	'3	1,244	0'5	3'1	4'8	...	0'4	0'1	...	...	8'9		
		T	27	1'2	'1	531	0'7	3'0	4'8	0'1	0'3	0'1	...	...	9'0		
		OT	6	1'7	'3	220	0'6	1'8	5'3	0'1	0'2	0'1	0'1	...	8'2		
All	94	1'4	'4	2,004	0'6	2'9	4'9	0'1	0'4	0'1	0'1	...	9'1				
BK	All	113	1'4	'2	2,453	0'6	3'1	5'3	0'2	0'4	0'1	0'1	...	9'8			
10	B	O	1	1'0	...	21	0'4	2'2	8'1	0'1	0'6	...	...	...	11'4	13	
		T	27	1'1	...	551	0'5	2'9	8'7	0'6	0'6	0'4	...	...	13'7		
		All	28	1'1	...	572	0'5	2'8	8'7	0'7	0'6	0'4	...	...	13'7		
	K	O	31	1'1	'1	605	0'6	3'0	7'2	0'2	0'5	0'2	0'3	...	12'0		
		T	27	1'1	...	466	0'6	3'5	5'2	0'2	0'5	0'2	0'2	...	10'4		
		All	59	1'1	...	1,071	0'6	3'2	6'3	0'2	0'5	0'2	0'3	...	11'3		
N	T	1	1'0	...	45	0'2	0'7	10'8	...	...	0'3	...	...	12'0			
BK	All	87	1'1	...	1,659	0'6	3'1	7'1	0'3	0'5	0'3	0'2	...	12'1			
11	B	O	4	1'3	'5	100	0'4	1'4	10'5	0'4	0'7	0'9	...	...	14'3	15	
		T	18	1'3	'1	467	0'5	2'0	10'8	0'7	0'7	0'4	0'1	...	15'2		
		All	22	1'4	'1	567	0'5	1'9	10'8	0'7	0'7	0'5	0'1	...	15'2		
	K	T	1	1'0	1'0	28	0'3	3'1	8'1	0'4	0'8	0'2	0'2	...	13'1		
	N	T	1	1'0	...	48	0'5	0'7	25'1	0'6	0'3	0'4	...	0'6	28'2		
	BK	All	23	1'4	'2	595	0'5	2'0	10'7	0'7	0'7	0'5	0'1	...	15'2		
12	B	O	44	1'1	...	1,168	0'5	2'3	16'4	0'7	1'1	0'5	1'1	0'1	22'7	17'5	
		T	277	1'3	'2	6,495	0'5	2'1	11'7	0'7	1'0	0'5	0'1	...	16'6		
		All	321	1'3	'2	7,663	0'5	2'2	12'6	0'7	1'0	0'5	0'2	...	17'6		
	K	O	33	1'3	'5	827	0'4	2'1	10'5	0'2	0'8	0'4	0'2	...	14'6		
		T	48	1'5	'5	989	0'4	2'6	8'3	0'5	0'6	0'3	...	...	12'7		
		All	81	1'3	'5	1,816	0'4	2'4	9'5	0'4	0'7	0'3	0'1	...	13'8		
N	O	3	1'0	...	168	0'4	2'8	23'3	0'8	0'7	0'2	...	0'1	28'3			
	T	55	1'2	...	2,061	0'4	2'2	17'3	0'8	0'6	0'3	...	...	21'6			
	All	58	1'2	...	2,229	0'4	2'3	17'8	0'8	0'6	0'3	...	...	22'2			
BK	All	412	1'3	'2	9,784	0'5	2'1	12'0	0'7	0'9	0'4	0'2	...	20'8			

\* B = Burman. K = Karen N = Indian.  
 † One abnormal B. OT has been omitted in averaging.

Cultivation—Actual and Assumed.

Tract.	Race,*	Status.†	Number examined.	Whole-time adult workers.		Acres worked.	Average cost per acre of									Cost per acre.	
				M	F		Seed.	Cattle.	La-bour.	In-terest.	Imple-ments.	Hut and Byres.	Irriga-tion and Bund-ing	Other ex-pen-diture.	Average Total.	Assu-med.	
				(5)	(6)		(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
13	B	O	1	1'0	...	24	0'6	2'3	24'5	0'8	1'7	0'7	1'3	...	31'9	17'5	
		T	11	1'8	'3	386	0'4	3'1	12'2	0'4	0'6	0'4	0'1	...	17'2		
		All	12	1'8	'3	350	0'4	3'1	13'0	0'4	0'7	0'4	0'2	...	18'2		
	K	O	2	1'0	1'5	51	0'2	1'6	9'7	0'7	1'7	0'1	...	...	14'0		
		T	3	1'0	...	72	0'3	4'0	12'5	0'1	0'3	...	...	0'2	17'4		
		All	5	1'0	'6	123	0'3	3'0	11'3	0'3	0'8	0'1	...	0'1	15'9		
N	T	10	0'9	...	439	0'4	2'3	20'1	0'7	1'0	0'4	0'1	0'5	25'5			
BK	All	16	1'6	'4	449	0'4	3'1	11'9	0'4	0'7	0'3	0'1	...	16'9			
14	B	O	5	1'0	0'6	94	0'3	2'2	9'5	0'8	1'0	0'2	0'2	...	14'2	13'5	
		T	53	1'2	0'5	961	0'4	2'0	11'0	0'8	0'7	0'3	0'1	...	15'3		
		All	60	1'2	0'5	1,112	0'4	2'0	10'7	0'8	0'7	0'3	0'1	...	15'0		
	K	O	18	1'4	0'9	307	0'4	2'4	7'1	0'4	0'8	0'1	0'1	...	11'3		
		T	35	1'5	0'7	1,569	0'4	2'6	5'6	0'4	0'6	0'2	...	...	9'8		
		All	54	1'5	0'8	901	0'4	2'5	6'1	0'4	0'7	0'2	...	...	10'3		
N	T	2	0'5	...	63	0'4	1'3	23'0	0'7	0'5	0'9	0'7	...	27'5			
BK	All	114	1'3	0'6	2,013	0'4	2'2	8'6	0'6	0'7	0'3	0'1	...	12'9			
15	B	O	16	1'1	0'9	248	0'5	2'9	9'7	0'9	0'9	0'4	0'6	...	15'9	12	
		T	75	1'3	0'6	1,398	0'5	2'2	8'3	0'5	0'7	0'4	0'1	...	12'7		
		All	103	1'3	0'6	1,975	0'5	2'3	8'9	0'6	0'7	0'4	0'2	...	13'6		
	K	O	81	1'3	0'9	1,347	0'4	2'3	6'5	0'3	0'7	0'2	0'1	...	10'5		
		T	72	1'2	0'9	1,292	0'4	2'7	5'5	0'3	0'5	0'2	...	...	9'6		
		All	178	1'4	0'9	3,241	0'4	2'4	5'8	0'3	0'6	0'2	0'1	...	9'8		
N	O	2	1'5	...	59	0'4	1'4	21'3	0'7	0'8	0'5	1'0	...	26'1			
	T	8	1'0	...	191	0'4	2'1	16'4	0'4	0'3	0'5	...	...	20'1			
	All	12	1'5	...	70	0'4	1'1	18'9	0'1	0'3	0'4	0'9	...	16'1			
BK	All	281	1'3	0'8	5,216	0'4	2'4	6'9	0'4	0'7	0'2	0'1	...	11'1			
16	B	O	12	1'3	0'5	188	0'5	1'6	7'9	1'5	0'9	0'4	0'4	...	13'2	11	
		T	35	1'1	0'6	603	0'5	2'2	8'1	1'1	0'7	0'3	...	...	12'9		
		All	58	1'3	0'7	1,045	0'5	1'6	6'7	0'5	0'6	0'2	...	...	10'1		
	K	O	77	1'4	0'9	1,412	0'7	1'8	5'5	0'3	0'6	0'2	0'3	...	9'4		
		T	54	1'5	0'7	957	0'6	2'8	3'7	0'4	0'6	0'2	...	...	8'3		
		All	139	1'5	0'8	2,557	0'6	2'2	4'9	0'3	0'6	0'2	0'2	...	9'0		
N	O	2	2'0	0'5	43	0'5	1'5	4'7	0'9	0'3	0'3	...	...	8'2			
	T	12	1'3	...	472	0'8	1'6	13'3	0'1	0'5	0'1	...	0'1	16'8			
	All	14	1'4	0'1	515	0'8	1'6	12'6	0'2	0'5	0'4	...	0'1	16'2			
BK	All	194	1'4	0'8	3,602	0'6	2'2	5'7	0'7	0'6	0'2	0'1	...	10'1			

† O = Owner; T = Tenant; OT = An owner who hires additional land.  
 § One abnormal B, O has been omitted in averaging.

Statement 12B.—Cost of

Tract.	Race.*	Status. †	Number examined.	Whole-time adult workers.		Acres worked	Average cost per acre of									Cost per acre.		
				M	F		Seed.	Cattle.	Labour.	Interest.	Implements.	Hut & Byres	Irrigation and Bunding	Other expenditure	Average Total.	Assumed.		
				(5)	(6)		(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
17	B	O	6	1'5	1'2	99	0'5	1'6	4'2	0'6	1'1	0'3	...	...	8'3	9		
		T	14	1'6	0'6	223	0'5	1'9	5'6	1'0	0'7	0'4	...	...	10'1			
		All	20	1'6	0'8	322	0'5	1'8	5'2	0'9	0'8	0'4	...	...	9'6			
	K	O	24	1'4	1'1	303	0'7	2'3	4'3	0'2	0'7	0'4	...	...	8'6			
		T	14	1'3	0'9	194	0'6	2'2	2'2	0'1	0'6	0'3	...	...	6'2			
		All	4	2'0	0'5	93	0'7	1'9	2'1	0'2	0'5	0'6	...	...	6'0			
	N	O	2	1'5	...	52	1'2	1'6	6'8	0'2	0'4	0'5	...	...	10'7			
		T	1	3'0	...	31	1'5	2'1	3'1	0'5	0'5	...	...	7'7				
		All	1	1'0	...	51	0'6	2'3	7'5	0'3	0'5	0'1	...	...	11'3			
	BK	O	4	1'8	...	134	1'0	2'0	6'2	0'3	0'5	0'2	...	...	10'2			
		T	...	...	...	...	...	...	...	...	...	...	...	...	...			
		All	62	1'5	0'9	912	0'6	2'1	4'0	0'4	0'7	0'4	...	...	8'2			
18	B	O	5	1'6	...	91	0'7	1'5	2'1	0'8	1'1	0'5	...	0'1	15'8	14		
		T	26	1'5	0'3	551	0'5	1'5	10'0	1'0	1'1	0'5	0'1	...	14'7			
		All	3	1'7	...	95	0'6	1'5	9'2	0'9	0'7	0'2	...	...	13'2			
	K	O	1	2'0	...	23	0'9	1'4	8'7	0'4	1'8	0'3	...	...	13'5			
		T	17	1'4	0'7	350	0'5	2'5	6'2	0'7	0'7	0'4	...	...	11'0			
		All	2	1'0	...	44	0'4	1'3	13'5	0'3	0'6	0'7	...	0'1	16'9			
	N	O	20	1'4	0'6	417	0'8	2'3	7'1	0'7	0'7	0'4	...	...	11'7			
		T	2	1'5	...	65	0'7	0'7	16'3	0'3	0'6	0'5	...	0'2	10'3			
		All	54	1'5	0'4	1,154	0'5	1'8	9'0	0'9	0'9	0'4	0'1	...	13'6			
	19	B	O	18	1'2	...	346	0'6	1'5	13'8	0'6	1'1	0'5	...	...		18'1	15'5
			T	61	1'2	0'3	1,295	0'6	1'9	10'6	0'7	1'1	0'4	...	...		15'3	
			All	1	1'0	...	28	0'4	0'6	10'9	...	0'6	0'4	...	...		12'9	
K		O	8	1'5	0'9	175	0'4	1'9	9'8	0'7	1'6	0'5	0'4	...	15'3			
		T	12	1'9	0'5	245	0'5	1'8	4'4	0'5	1'0	0'4	...	...	8'6			
		All	2	1'5	...	46	0'6	3'3	11'4	0'4	0'8	0'3	...	...	16'8			
N		O	22	1'7	0'6	466	0'5	2'0	7'1	0'6	1'2	0'4	0'2	...	12'0			
		T	6	1'2	...	226	0'6	1'4	19'1	0'9	0'9	0'3	...	...	23'2			
		All	102	1'3	0'3	2,135	0'5	1'8	10'4	0'7	1'1	0'4	...	...	14'9			
20		B	O	7	1'1	...	142	0'6	1'9	12'2	1'6	2'2	0'2	...	...	18'7	16	
			All	9	1'3	0'1	285	0'7	3'5	13'1	1'1	0'8	0'3	...	...	19'5		
		K	O	16	1'3	0'1	427	0'7	2'9	12'8	1'3	1'3	0'2	...	...	19'2		
	T		3	1'3	0'3	77	0'6	3'8	6'1	0'7	0'2	0'8	...	...	11'6			
	BK	O	8	1'1	...	273	1'5	1'2	20'8	2'2	1'1	0'3	0'1	...	27'2			
		All	19	1'3	0'1	504	0'6	2'0	11'8	1'2	1'1	0'2	...	...	17'9			

\* B = Burman. K = Karen, N = Indian,



Cultivation—Actual and Assumed—continued.

Tract.	Race. †	Status. †	Number examined.	Whole-time adult worked.		Acres worked.	Average cost per acre of									Cost per acre.	
				M	F		Seed.	Cattle.	Labour.	Interest.	Implements.	Hut and Byres.	Irrigation and Bunding.	Other expenditure.	Average Total.	Assumed.	
				(5)	(6)		(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
21	B	O	3	2'0	...	122	0'7	2'5	17'8	2'3	1'0	0'4	...	0'1	24'8	16	
		OT	33	1'5	...	937	0'6	1'2	11'9	1'6	0'7	0'4	...	...	17'4		
		All	1	1'0	3'0	53	0'4	0'6	2'9	1'0	0'5	...	...	...	5'4		
	K	O	5	1'4	...	103	0'7	1'6	9'2	0'7	0'6	0'2	...	...	13'0		
		OT	10	1'0	0'3	307	0'5	2'6	7'5	1'1	0'6	0'1	...	...	12'4		
		All	1	3'0	...	44	0'2	1'7	7'8	0'6	0'5	0'2	...	0'2	11'2		
	BK	T	7	1'4	...	238	0'5	2'2	17'4	1'7	1'4	0'3	...	...	23'5		
		All	49	1'6	0'1	1,391	0'6	2'2	10'6	1'0	0'7	0'3	...	...	15'4		
	22	B	O	1	1'0	...	30	1'8	4'5	20'9	0'8	0'9	0'7	0'8	...		30'4
			OT	11	1'4	...	336	0'8	1'9	11'1	1'2	0'4	0'0	...	...		16'0
			All	12	1'9	...	366	0'9	2'1	11'9	1'2	0'5	0'6	0'7	...		17'3
BK		T	3	1'0	...	95	1'5	3'3	13'3	1'5	0'9	1'1	...	0'7	22'3		
		All	11	1'4	...	336	0'8	1'9	11'1	1'2	0'4	0'6	...	...	16'0		
23	B	O	14	0'9	...	295	0'4	1'0	16'5	0'7	1'4	0'3	0'7	...	21'9		
		OT	41	1'3	...	926	0'5	2'0	12'3	0'6	1'1	0'4	...	...	10'9		
		All	1	2'0	...	48	0'5	2'3	18'8	1'4	0'9	0'9	0'6	...	25'4		
	K	O	4	0'8	...	97	0'4	1'7	10'1	0'7	0'7	0'3	...	...	13'0		
		OT	5	1'8	1'4	123	0'4	2'8	5'1	0'6	0'0	0'3	...	...	9'8		
		All	2	1'0	...	65	0'3	1'8	16'9	1'2	1'3	0'3	0'5	...	22'5		
	BK	T	11	1'3	0'6	285	0'4	2'2	9'5	0'8	0'9	0'3	0'1	...	14'2		
		All	9	1'3	...	477	0'4	1'7	19'3	0'8	0'5	0'2	...	0'1	23'0		
	24	B	O	9	1'2	0'1	212	0'3	2'7	14'6	1'0	0'9	0'3	0'4	...	20'2	
			OT	18	1'3	0'4	470	0'3	3'1	12'6	0'7	1'1	0'3	...	...	18'1	
			All	27	1'3	0'3	682	0'3	3'0	13'2	0'8	1'1	0'3	0'1	...	18'8	
K		O	5	1'6	0'2	146	0'3	1'8	8'0	0'2	0'6	...	0'3	...	11'2		
		OT	11	1'3	0'7	308	0'3	2'3	7'0	0'0	0'6	0'1	...	...	10'9		
		All	16	1'4	0'6	454	0'3	2'1	7'3	0'4	0'0	...	0'1	...	10'8		
BK		T	11	1'4	...	529	0'3	2'6	15'8	0'8	0'8	0'3	...	...	20'6		
		All	43	1'3	0'4	1,236	0'3	2'2	10'8	0'6	0'9	0'2	0'1	...	15'1		
25		B	O	8	1'4	0'1	195	0'3	1'8	9'1	0'7	1'1	0'1	0'3	...	13'4	
			OT	18	1'4	0'3	557	0'4	3'3	8'2	0'3	0'6	0'1	...	...	12'9	
			All	26	1'4	0'3	752	0'4	2'9	8'5	0'4	0'7	0'1	0'1	...	13'1	
	K	O	3	1'7	1'3	63	0'3	2'8	0'7	0'4	0'8	0'1	...	...	5'1		
		OT	3	1'7	0'7	58	0'4	4'8	3'1	0'7	0'6	0'2	...	...	9'8		
		All	6	1'7	1'0	121	0'4	3'7	1'8	0'6	0'7	0'1	...	...	7'3		
	BK	T	1	3'0	...	29	0'2	1'9	2'4	2'5	0'8	0'2	0'2	...	8'2		
		All	29	1'4	0'3	810	0'4	3'0	8'1	0'4	0'7	0'1	0'1	...	12'8		

O = Owner; T = Tenant; OT = An owner who hires additional land.

† One abnormal BOT and three abnormal BO omitted in averaging.

‡ Three abnormal KO omitted in averaging.

§ One abnormal BO omitted in averaging.

Statement 12B—Cost of Cultivation—Actual and Assumed—concludd.

Tract.	Race. *	Status. †	Number examined.	Whole time adult workers.		Acres worked.	Average cost per acre of									Cost per acre	
				M	F		Seed.	Cattle.	Labour.	Interest.	Imple-ments.	Hut and Byres.	Irrigation and bund-mg.	Other ex-pen-diture.	Average Total.	Assumed.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
26	B	O ...	6	1'3	...	134	0'3	2'4	5'4	0'1	0'4	...	...	...	8'6	} 18	
		T ...	7	1'4	...	291	0'4	3'6	10'7	0'3	0'5	...	0'1	...	15'6		
		All ...	13	1'3	...	423	0'4	3'2	9'1	0'3	0'5	...	0'1	...	13'6		
	K	O ...	5	1'2	0'4	99	0'3	2'3	4'9	0'1	0'3	...	...	...	7'9		
		T ...	2	1'0	0'5	40	0'3	3'2	6'5	0'1	0'4	...	...	...	10'5		
		All ...	7	1'1	0'4	139	0'3	2'6	5'3	0'1	0'3	...	...	...	8'6		
BK	All ...	20	1'3	0'2	562	0'4	3'1	8'0	0'2	0'5	...	0'1	...	12'3			
27	B	O ...	4	1'5	...	54	0'5	3'6	4'7	0'1	0'3	0'3	...	0'1	9'6	} 10	
		T ...	3	1'0	...	45	0'6	4'4	5'6	...	0'2	0'1	...	...	10'9		
		All ...	7	1'3	...	99	0'5	3'9	5'1	...	0'3	0'2	...	0'1	10'0		
	BK	All ...	7	1'3	...	99	0'5	3'9	5'1	...	0'2	0'2	...	0'1	10'0		
28	B	O ...	24	1'4	0'5	616	0'4	1'3	11'4	1'0	1'1	0'1	1'3	...	16'6	} 16	
		OT ...	4	1'8	0'3	67	0'4	2'5	5'2	0'2	1'0	0'4	...	...	9'7		
		All ...	28	1'5	0'5	683	0'4	1'4	10'8	0'9	1'1	0'1	1'2	...	15'9		
	K	T ...	1	1'0	...	29	0'3	0'6	10'8	...	0'5	0'1	...	...	18'3		
		OT ...	1	1'0	...	45	0'3	1'6	12'2	0'1	1'1	0'2	...	...	15'5		
		All ...	2	1'0	...	74	0'3	1'2	11'6	0'1	0'9	0'2	...	...	14'3		
	N	T ...	1	1'0	...	31	0'6	0'5	19'8	2'4	0'5	0'5	...	...	24'3		
BK	All ...	30	1'4	0'5	757	0'4	1'4	10'9	0'9	1'1	0'1	1'1	...	15'9			
29	B	O ...	38	1'0	0'8	658	0'5	1'1	9'0	0'9	0'8	0'1	1'7	0'2	14'3	} 12'5	
		T ...	8	1'4	0'8	150	0'5	1'7	8'1	0'2	0'7	0'2	...	...	11'4		
		OT ...	1	0'0	2'0	17	0'2	...	1'6	1'1	0'4	...	...	3'5	6'8		
		All ...	47	1'5	0'8	825	0'5	1'2	8'7	0'8	0'8	0'1	1'3	0'2	13'6		
	K	O ...	10	1'3	0'6	142	0'4	1'5	5'6	1'3	0'5	0'1	2'1	...	11'5		
		T ...	1	4'0	...	34	0'6	2'4	4'8	0'8	1'2	...	0'9	...	10'7		
		All ...	11	1'5	0'6	176	0'5	1'6	5'4	1'2	0'7	0'1	1'8	...	11'3		
	BK	All ...	52	1'5	0'8	1001	0'4	1'2	8'1	0'8	0'7	0'1	1'4	0'2	12'9		

Total Number of Persons and Area Examined.

I—Classified by Status.				II—Classified by Race.			
	Persons.	Acres occupied.		Persons.	Acres worked.		
Owners	645	14,518	Burman	1,041	23,764		
Tenants	1,280	31,503	Karen	831	16,251		
OT	97	3,947	Indian	150	5,756		
Total	2,022	48,968	Total	2,022	48,968		

\* B = Burman.  
or.

K = Karen.  
T = Tenant.

N = Indian.  
OT = An owner who hires additional land.

Statement 33A.—Incomes and Cost of Living of Agriculturists.

1. Tract ... ..	8						9					
	B			K			B			K		
3. Owners, Owner tenants or tenants	O	T	All	O	T	All	O	T	All	O	T	All
4. Total households examined ...	3	4	7	24	6	38	3	8	11	22	11	33
5. } Average number { Adults	3.8	4	3.9	3.5	3.1	3.3	4.2	3.5	3.7	3.5	2.9	3.2
6. } in household { Children	3.5	3.6	3.6	2.3	2.5	2.4	1.8	2.7	2.3	2.6	2.7	2.6
7. Average acres cultivated ...	24	29	27	27	22	24	18	26	24	24	23	22
8. Average value gross produce less rent and revenue.	447	627	550	438	510	454	423	477	462	549	447	515
9. } Average nett non- { Rent	..	..	..	..	..	1	20	23	22	9	27	12
10. } agricultural income. { Other sources	15	20	18	25	49	30	37	6	14	24	18	22
11. Average provision of paddy (in pounds).	7,033	6,975	7,000	7,434	5,892	7,039	5,730	5,906	6,864	6,284	4,850	5,806
<i>Average annual cost per household of—</i>												
12. Food grains ... ..	173	167	170	170	134	163	143	149	147	156	116	149
13. Other food ... ..	65	64	64	42	45	43	93	79	83	65	45	58
14. Tobacco and betel ...	18	32	26	24	20	23	27	51	44	34	15	28
15. Household requisites ...	21	16	18	11	10	12	15	21	19	18	14	17
16. Clothing and bedding ...	112	99	104	60	56	59	95	85	88	68	48	61
17. Housing ... ..	15	6	10	6	10	7	10	12	11	15	16	15
18. Communal contributions ...	10	9	10	8	12	9	15	12	13	12	15	12
19. Taxes * and miscellaneous	11	11	11	9	8	9	15	10	11	7	11	9
20. Extraordinary ... ..	..	35	20	1	..	1	23	0	11	5	..	3
21. Total cost per household ...	425	438	433	331	300	325	435	425	428	379	281	346
22. } incidence of { head †	77	75	76	71	69	72	85	88	86	79	66	75
23. } cost per { acre cultivated	18	15	16	13	14	14	24	16	18	16	12	15

  

1. Tract ... ..	10						11		
	B			K			B		
3. Owners, Owner tenants or Tenants	O	T	All	O	T	All	O	T	All
4. Total households examined ...	2	9	11	10	6	16	1	7	8
5. } Average number { Adults	3	2.8	2.8	3.0	3.5	3.3	3.5	3.6	3.6
6. } in household { Children	2.5	3.0	3.0	2.2	2.8	2.3	2.0	2.4	2.3
7. Average acres cultivated ...	26	23	23	23	24	23	22	28	27
8. Average value gross produce less rent and revenue.	923	569	632	650	612	636	844	828	828
9. } Average nett non- { Rent	..	..	..	..	25	9	..	..	..
10. } agricultural income. { Other sources	83	42	49	22	..	14	..	2	2
11. Average provision of paddy (in pounds).	5,355	5,157	5,193	5,212	4,010	5,511	5,720	4,427	4,989
<i>Average annual cost per household of—</i>									
12. Food grains ... ..	170	129	122	129	128	136	126	119	122
13. Other food ... ..	148	65	80	78	68	74	146	124	127
14. Tobacco and betel ...	34	29	32	40	36	38	59	40	43
15. Household requisites ...	34	16	29	23	23	23	27	27	27
16. Clothing and bedding ...	135	61	76	68	85	74	92	73	75
17. Housing ... ..	20	11	13	16	21	18	35	24	25
18. Communal contributions ...	21	9	11	16	10	14	20	17	17
19. Taxes * and miscellaneous	8	13	12	12	11	12	60	8	24
20. Extraordinary ... ..	..	3	3	16	..	10	..	6	5
21. Total cost per household ...	548	338	376	398	402	399	525	437	455
22. } incidence of { head †	129	79	87	97	86	90	130	91	96
23. } cost per { acre cultivated	21	15	16	17	17	17	27	16	17

\* Other than Land Revenue.

† Each child reckoned as one half.