

338. Primary Tract 12, which covers the south-western half of Mawlamyainggyun Township and the greater part of the narrow southern part of Wakèma Township, includes 172 kwins and is thus the largest of all the tracts. It also secures the best price for its produce, includes the most fertile land, has been the principle scene of the capitalist development of agriculture and includes the towns of Mawlamyainggyun and Kyōnmangè-Kyunpyatthat and also other villages like Thayettaw which though they do not handle much merchandise are important centres of agricultural finance. It is the lineal descendant of Mr. MacKenna's Tract I, but 16 kwins of his Tract II have been taken into it, while the fishery kwins of the north, a broad strip to the east and again some odd kwins to the south, altogether 96 kwins, have been cut off to form separate Tracts 18, 19 and 23. Six kwins of Mr. Lowry's Tract X in Wakèma Township were also included in this tract provisionally but have been taken out again to form a separate Tract 12 Wx. Of the 172 kwins which the tract thus includes 115 are in the Mawlamyainggyun Township and form Assessment-tract 12M, while the remaining 57 are in the Wakèma Township and form the Assessment-tract 12W. As there is no distinction between 12M and 12W save that they are separated by a township boundary they can be discussed together and the division into 12M and 12W will apply only in setting out the financial results of the proposals in Statement 19 in which the orders of Government require township boundaries to be observed.

339. The north-eastern limit of *kanazo* divides the tract into two roughly equal parts; but the north-eastern portion was covered originally with *bamaw* and *thayet* jungle and is correspondingly fertile, having the most favourable tidal inundations and receiving a steady supply of silt, so that, having due regard to the curves of fertility development, there is no serious objection to its association in one tract with the *kanazo* land of the south-western portion. In accordance with the usual experience the *bamaw-thayet* land was opened up first and extension into *kanazo* land took place only when that had been largely taken up. The western part near Kyunpyatthat and north of that town has been cultivated in some holdings for sixty years but to the south and east about twenty to thirty years, a little more or less, is the age of the oldest parts of the ordinary holdings. Much newer parts are included many holdings, however, and in the middle south whole kwins are about fifteen years old; up till quite recently extension has still been proceeding actively in the remaining fringes of *kanazo*, and although the area taken up in each case has been small a respectable total has accrued annually on the whole and possibly one-quarter of the whole tract is less than ten years old as cultivated land. Such extension, however, must diminish now. Statement 1 shows the comparatively small area of 1,800 acres as culturable waste, and, though no doubt some part of the 26,000 acres shown as unculturable will be cultivated, the future growth will be slow. Since last settlement in 1902-03 the growth has been over 15,000 acres or 16 per cent. The water-supply, as already noted, is tidal. It is fresh throughout the tract in the cultivating season and brackish in the streams in the south-western half in the dry weather. The north-eastern limit of dhani leaves about two-thirds of the tract on its north-eastern side. Towards the south-eastern and south-western edges low parts of the kwins are liable to salt-water inundations in the hot weather and to brackish or fresh inundations at reaping time, and this has led to Tracts 13 and 23 being cut off from Mr. MacKenna's Tract I for separate treatment. Some kwins near the edges of those tracts are slightly inferior to the main body of the tract and are intermediate in quality between this tract and Tracts 13 and 23, but it has not seemed necessary to make separate proposals for them and only on rare occasions did the local people seem to desire that to be done. Kwins 1319 and 1329 which divide two parts of Tract 23 in the south-east corner of the district offered some difficulty and their tracting looks strange on the map. But the small river on their southern and eastern sides is fresh in the cultivating season and the tides have less force there than in either the Myitkale River near 1330 or the Kyaikpi River near 1318, and the kwins are thus free from salt water. *Ngasein* paddy is grown in first-class soils in these kwins, but it is of good weight and being sold to Bogale gets Rs. 3 higher price than *ngasein* in more northerly kwins selling to Mawlamyainggyun.

340. The tract is surprisingly level. There are of course differences in level which are apparent to the cultivator and cause that few inches more or less of water by which his crop is so strongly affected, there are low patches of comparatively deep water. But even the lowest cultivated lands are transplanted except in the case of new land just coming under cultivation; nowhere is there resort to broadcasting on account of flooding. The words high and low in the mouths of the cultivators both relate to land which is inundated by the tides, *high* being applied to land from which the water drains conveniently at ebb tide and *low* to land in which that drainage is retarded. The few patches which are not inundated are described as "exceedingly high." The ordinary holding boundary is a stream of greater or less dimensions so that the tide-water has generally ample means of escape. On account of this and the general equality of level the ordinary *kwin* is culturable in all its parts and not merely around the rim of a saucer, and the islands formed by the large rivers are cultivated all the way across from one side to the other except towards the south where however the exceptional areas are patches of jungle most of which are or shortly will be in course of removal. Some *kwins* of Tract 14 are also cultivated all over in spite of their saucer form, because the saucer in their case is shallow, but in them the central part is chiefly of the third-class while in Tract 12 any soil class may appear in any part of the *kwin*. Some *kwins* near Saneik occasionally plant twice because of floods, and there is serious flooding again near Dipale, but such local cases have been met in the detailed soil-classification. The subsoil is of stiff clay. The soil in the first-class levels is commonly a friable clay derived chiefly from silt and humus and is six or seven inches deep as a rule, in the "exceedingly high" places the soil is a little more sandy and may be a sandy loam in parts and as little as three inches deep, but such places are rare, in low places depths of eight twelve or more inches of soil can be found. The depth of soil varies with both the conditions of silt-deposit and the age of cultivation, and the middle parts of this tract are the locality in which one hears most about soil deterioration,—where for instance one hears regretful accounts of the twelve or fourteen inches of soil in the first class lands twenty years ago, producing good crops with only the slightest presence of ploughing. The truth of the matter has been explained with the aid of the fertility development curve in Chapter III, much of the land has been accomplishing the descent of that curve during the period of the current settlement and the golden year seem ever more golden in retrospect. Farther north one hears less about the deterioration because the asymptotic portion of the curve has been reached, farther south one commonly hears less because the maximum point has either not yet been reached or is not far behind and the variations still appear to be seasonal. Besides the characteristic *bamaw* and *thayet* in the north-eastern part *pyinma*, *thitpyu*, *sitpin*, *letpan*, *kanyin*, *thinban*, *myinga*, and *danon* were common trees in the original vegetation, while in the *kanaso* area the usual accompaniments of *danon*, *thabaw*, *thinban*, and *myinga* were found, and the whole area was thus occupied by tree jungle.

341. The regional centre of Tract 12M is Mawlayainggyun and of 12W is Kyõnmangè, but the villages of Kyunpyatthat and Thayettaw which have already been mentioned have wide spheres of financial influence over cultivation, both in Tract 12 and in the newer Tracts 24, 28, 29. Mawlamyainggyun and Kyõnmangè Towns are also busy centres of miscellaneous trade. The Yazundaing stream of the Irrawaddy runs down the eastern side of Tract 12M and the broad Kyunpyatthat River, into which the Shwelaung branch of the Irrawaddy develops, runs through the middle of 12W; while an important highway is the narrow and shallow Tagundaing *chaung* which connects these two rivers and furnishes a cross-route between Bassein, Myaungmya and Wakèma on the one side and Mawlamyainggyun and Bogale on the other. Sale-prices as recorded by the Land Records Department (Statement 6) show an extraordinary rise since 1912-13. Probably the 1912-13 figures are incorrect; the local account implies a continuous rise since 1904. Forty-eight per cent. of the land is under mortgage. Rents like sale-prices have risen steadily and now appear to average about 17½ baskets per acre according to the Land Records Department and about 19 baskets according to the statistics collected by the settlement party. Although this is the most prosperous part of

Mr. MacKenna's Tract I indebtedness is serious; 56 per cent. of cultivating owners seem to be indebted and the average debt per indebted household exceeds Rs. 2,000. It will be observed in Statement 15 that there are many debtors with large debts, these are practically equivalent in most cases to tenants who pay interest on a mortgage in lieu of rent upon the land. The average annual family expenditure appears to be a trifle above the average for the district. The small area of garden land shown in Statement 19 consists almost entirely of house-compounds; there is a little dhani towards the south-west but in the greater part of the tract the water is too fresh for it. Thus practically the only cultivation in the tract is that of paddy, and this is directed principally to *kaukgyi* varieties which secure a special price in all the sphere of the Mawlamyaingyun and Kyōnmangè paddy-markets *kauklat* is only grown in occasional fields in which the water-supply is insufficient for *kaukgyi*. Of the 57 kwins in Tract 12W sixteen belong to Mr. MacKenna's Tract II with rates of Rs. 4 and Rs. 2'25; all the other kwins of 12W and all of 12M belong to his Tract I with rates of Rs. 5 and Rs. 3'8. Mr. MacKenna stated in his report that he thought that Tract II would probably be added to Tract I at the revision of his settlement but only these 16 have been absorbed, the remainder going to Tracts 11, 13 and 24. The assumed price has been fixed at Rs. 107. Outturns in Mr. MacKenna's Tract I were reckoned at 50 and 40 baskets; for the present settlement they have been placed at 51, 36, 20. There is a general consensus of opinion that, allowing for depredations by rats and for low patches, the first-class outturn averages about 65 baskets per *kwet* of 1'32 acres; to this 51 Government baskets per acre corresponds. The cost of cultivation has been placed at Rs. 17 5, and as explained in Chapter XIII, in consideration of this higher figure and of the present assessments in Mr. MacKenna's tracts, a fraction of 19 per cent. of the net produce is taken as the standard of assessment.

342. For Tracts 12M and 12W the calculation of assessment-standards on this basis and the proposed rates are as follows.—

Assessment Tracts 12M and 12W.

Soil Class.	Assumed gross produce.		Value of net produce.	Assessment Standards.			Basic portion of net produce taken.		Rate proposed.
	Government standards.	Value.		One-fifth gross produce.	Half tenant rate.	Quarter nett produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.
R-1	51	54'6	37'1	10'9	10'5	9'3	} 19 - { 100	7'05	7'0
R-2	36	38'5	21'0	7'7	9'0	5'2		3'99	4'0
R-3	20	21'4	...	4'3	0'0	.		...	1'75

The financial effect of this revision of the settlement would be a new revenue of Rs. 549,709 which is Rs. 48,858 or 9'7 per cent. in excess of the current revenue of Rs. 5,00,851. The average incidence in rupees per acre occupied or per acre cultivated and assessed at full rates is 4'71 under the current settlement and 5'16 under the proposals. The real effect of the proposals, however, is only perceived by considering the total effect in the group of Tracts 12, 13, 18, 19, 23, which make up Mr. MacKenna's Tracts I and II, some of these showing decreases of revenue to set off against this increase in Tract 12 which includes all the best part of the original tract.

#### ASSESSMENT TRACT 12Wx.

343. In Tract 12Wx there are some difficulties. At the time of classification and tracting this small group of six kwins (numbered 897 to 901 and 906) was placed in Tract 14 in accordance with the information obtained from local assesses. In the following year owing to resurveyed maps having been received the classification was revised and on this occasion several persons expressed the opinion

that this block resembled Tract 12 more closely though it was admittedly inferior. There were considerable difficulties in the matter because the remainder of Tract 14 is too far away for local people to compare, and the river which divides the kwins from Tract 12 is very wide and little communication goes across it. It was only with the greatest reluctance and in opposition to my personal opinion that I placed these six kwins in Tract 12 provisionally; one reason was that they get from broker's consideration for the extra value of *kaukgyi* paddy though they do not quite reach the price of Tract 12 and also I believed then that there had been considerably more reduction in classification than afterwards proved to be the case and thought that by this they would be able to pay the rates of Tract 12 which also I expected to be somewhat lower than those now proposed. As the group of six kwins was too small to give a basis for any statistics on its own account but was large enough to affect those of Tract 14 I left it in Tract 12 (which was too large to be affected) till the areas under the new classification had been calculated. I have now no hesitation in taking these six kwins out of Tract 12W to form a separate assessment-tract. Whether they more resemble Tract 12 or Tract 14 in fertility it is impossible to say; the difference between those tracts is too fine for argument. The price of 12Wx is fairly placed half-way between that of Tract 12 and that of Tract 14. For its cost of cultivation, the records obtained from these six kwins are insufficient to establish a figure, but it is most probably higher than that of Tract 14 and approximately equal to that of Tract 12. The present rates of assessment are Rs. 4 and Rs. 2.5 (Mr. Lowry's Tract X) as compared with Rs. 5 and Rs. 3.5 in Tract I. The imposition in this area of the rates now proposed for Tract 12 would be quite impossible; there is no considerable reduction of classification to soften the effect of the increase of rates. Under the circumstances I propose practically to reinstate these six kwins in the tract in which in accordance with my own estimate of them they were originally placed, and to propose for them the rates proposed for Tract 14, namely Rs. 6.0, Rs. 3.5 and Rs. 1.5 equivalent to rates obtained by taking one-sixth of their net-produce. The financial effect of this revision of the settlement would be a new revenue of Rs. 20,391 which is Rs. 6,282 or 44.5 per cent. in excess of the current revenue of Rs. 14,109. The average rate of incidence in rupees per acre occupied or cultivated and assessed at full rates is Rs. 3.3 under the current settlement and Rs. 4.7 under the proposals. This increase gives, I am convinced, the full measure of both the 25 per cent. increase in price and the improvement of the land which have taken place since the settlement of 1903-04. I have left the tract with the number 12 because all its miscellaneous statistics have been included with those of Tract 12; but the kwins might conveniently be added to Tract 14 in notifying rates and have been coloured like Tract 14 in Map III though distinguished by black hatching.

### TRACT 13.

344. Tract 13 is the principal descendant of Mr. MacKenna's Tract II and consists of a single line of five kwins between Tracts 12 and 24 together with a group of six kwins a little to the west, and two kwins (833 and 834) which are occupied entirely by a grazing-ground therefore belong to no tract at all but are conveniently included to give continuity on the map. The eleven cultivated kwins, being on a little lower level than Tract 12, receive deeper water in the rains and brackish water in the hot weather, and consequently show a slight defect of outturn either in quantity or quality or in both. There is a higher cost than usual for carting in the western group owing to the small local supply of carts and to the slow rate at which carts travel. The latter is due partly to the hot-weather inundations keeping the soil soft, partly to the circumscribing boundaries of the area and the numerous small streams which limit the amount of cart traffic on each route; both causes tend to prevent the formation of those good tracks across the fields which facilitate the progress of carts in other places. Sandbanks also affect the price partly because of difficulties of approach to the shore and partly because they conspire with the course of the river to cause most barges travelling down the Pyamalaw to pass along the *Dōnpaung chaung* which divides the western group from Tract 12. In the

eastern group there are similar difficulties owing to the sandbanks in the upper mouth of the Kakayan *chaung*, just above this tract, discouraging barges from the north from coming to buy paddy.

345. Regionally Tract 13 belongs to the Kyonmange domain. It has no villages of any size but is composed entirely of paddy fields cultivated by small residential groups. There are 70 acres of dhani fringing its rivers, but besides these and the paddy land the only assessable land is a few small garden plots making up eight acres altogether. Little culturable waste seems now to be available, cultivation having increased by 65 per cent. since 1902-03. Land sells at Rs. 84 per acre, having risen considerably since last settlement. About one-half of it is under mortgage. Rents are lower than in Tract 12 but average about 12 baskets per acre according to the Land Records Department and nearly 15 according to the settlement records. The statistics of indebtedness and cost of living in Statements 13 and 15 have not wide enough a basis for any conclusions to be drawn.

346. **Tract 13.**—Under the current settlement the whole tract is included in Mr. MacKenna's Tract II which he thought would probably be absorbed by his Tract I when his settlement came to be revised. The assumed outturns under the current settlement are thus 40 and 30 baskets, and the current revenue rates are Rs. 4 and Rs. 2'25. For the new settlement outturns are assumed at 48, 33, 18 approaching those of Tract 12 and so far agreeing with Mr. MacKenna's expectation. The price is placed at Rs. 105 and the cost of cultivation at Rs. 17'5, the same as for Tract 12, while the same fraction, namely nineteen per cent. of the nett produce, is taken as a standard for assessment. The calculation on these lines of assessment-standards and the proposed rates are as follows.—

Assessment Tract 13.

Soil Class.	Assumed gross produce.		Assessment Standards.				Basic portion of net produce taken.		Rates proposed.
	Government standards.	Value	Value of nett produce.	One-fifth gross produce	Half-tenant rate	Quarter nett produce.	Fraction	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.
R-1	48	50'4	32'9	10'1	7'8	8'2	} 19 } } 100 }	6'25	6'25
R-2	33	34'7	17'2	6'9	6'8	4'3		3'26	3'25
R-3	18	18'9	...	1'8	..	..		..	1'50

The financial effect of this revision of the settlement would be a new revenue of Rs. 25,624 which is Rs. 4,061 or 18'8 per cent. in excess of the current revenue of Rs. 21,563. The average incidence in rupees per acre occupied or per acre cultivated and assessed at full rates is Rs. 3'8 under the current settlement and Rs. 4'4 under the proposals.

#### TRACT 14.

347. Tract 14 is the descendant of Mr. Lowry's Tract W which has been modified, as shown by Statement 21 at the end of this report and in the table included in the description of Tracts 15, 16 and 17, in accordance with changes of physical conditions and the changes corresponding to the introduction of a third soil-class. This tract has tidal irrigation and resembles in many ways the northern parts of Tract 12 which have only fresh water and have been cultivated for a long time. But the soil is generally a little less friable, though much of it has been formed by comparatively recent silt-deposits, the drainage is slower and there is a general reduction in value owing to the saucer form of the kwins. Most of the kwins show a distinct resemblance to the saucer pattern and have a central marsh which is of very poor quality or unculturable. The saucers in this part, as noted in paragraph 6, are shallower than in Tracts 15, 16 and 17 to the north and east; but they still constitute a difference from Tract 12 in which, first and second-class land

may be found in any part of the kwin. In the north of the tract the western kwins following the general configuration of this part of Wakèma Township, include a considerable amount of high non-tidal land in which the soil tends to be sandier, while the eastern kwins get lower, and, beginning to show the effect of slow drainage at ebb tide, grade off to the inferior Tracts 15 and 16. As in Tract 12 *kaukgyi* is grown in the first-class lands with tidal irrigation but the grain does not fill out so well as that of Tract 12, it has a thicker husk due to the larger supply of water resulting from slower drainage and weighs one to two pounds less per basket. In the third-class land and in part of the second-class land *ngakywe* for home consumption is grown and in the higher parts a little *ngasein* is grown. The whole tract is small and surrounded with kwins producing only *ngasein* paddy for sale, and accordingly with only a portion of the land producing for sale *kaukgyi* of an inferior quality the market for this grade has not been organised as in Tract 12, but the *kaukgyi* is still mixed in the barges with *ngasein* as in former days. Thus the price is less than in Tract 12, the cost of transport to Rangoon is slightly less, but on all other points Tract 14 is at a disadvantage. Statement 1 shows practically no culturable waste available, a certain amount of the unculturable area will become culturable land in time, but most of it is occupied by the rivers which carry the traffic connected with the town of Wakèma. The tract is generally well populated large villages of considerable population lining all the creeks and carrying on numerous petty activities centering upon Wakèma. Wakèma is in every regional sense the centre of the tract, the whole of which looks for finance and for leadership in everything to that town. Besides the large paddy-mills in Wakèma, however, there is no large-scale industry. Sales of land as recorded in Statement 6 show a curious variation from Rs. 106 per acre in 1907-08 to Rs. 71 in 1912-13 and again to Rs. 117 in 1917-18 without considerable change in the relative proportion of each soil-class included. Settlement records tabulated in Statement 17 confirm the last figure, and the most probable explanation of the 1912-13 figure is some error of the surveyor concerned. Fifty-three per cent of the land is under mortgage. The rented area is now 60 per cent of the whole, and the average rent for land, of which two-thirds falls into the first-class under the old settlement is 15 baskets per acre. Indebtedness is not as serious as in Tract 12 but it is distinctly high. The standard of expenditure upon living appears in Statement 13 to be below the normal for Burmans but about normal (per head) for Karens. Outturns have been estimated at 50, 34, 18 baskets as compared with 50, 35 assumed by Mr. Lowry in 1903-04 for Tract W which makes the chief contribution to this tract, the outturns for Tracts B, X, Y which also contribute were B, 45 and 35; X 45 and 30, Y, 40 and 25. For the whole tract the one price of Rs. 102 has been assumed and the cost of cultivation has been placed at Rs. 13'5. As for all the tracts in the northern portion of Wakèma Township a fraction of sixteen-hundredths of the nett produce, being intermediate between two-thirteenths and one-sixth is taken as the basis of the proposals. The calculation of the assessment-standards and the proposed rates are as follows:—

Assessment Tract 14.

Soil Class.	Assumed gross produce.		Value of net produce.	Assessment Standards			Basic portion of nett produce taken.		Rate proposed.
	Government standards.	Value		One-fifth gross produce.	Half tenant rate.	Quarter nett produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
R-1	50	Rs. 51'0	Rs. 37'5	Rs. 10'2	Rs. 9'0	Rs. 9'4	} $\frac{16}{100}$ {	Rs. 6'00	Rs. 6'0
R-2	34	34'7	21'2	6'9	7'5	5'3		3'39	3'5
R-3	18	18'4	..	3'7	4'5	...		...	1'5

The financial effect of this revision of the settlement will be a new revenue of Rs. 79,627 which is Rs. 14,567 or 23'92 per cent. in excess of the present revenue of Rs. 65,060. The average incidence per acre occupied and per acre assessed at full rates is the same, because there is only one acre of fallow land; its value is

Rs. 3·85 under the current and Rs. 4·73 under the new settlement. The increase is somewhat large because this tract contains all the best kwins of the northern part of Wakèma Township including many of those improved by silt deposits and excluding all that have deteriorated in any way; it will be fairer to consider increases and decreases on the four Tracts 14 to 17 taken together as a group.

#### TRACTS 15, 16 AND 17.

348. The three Tracts 15, 16, 17 occupy, with Tract 14 and six kwins of Tract 12 Wx, the eleven surveyors' circles which form the wide northern part of Wakèma Township. They represent Mr. Lowry's Tracts B, X, Y (less eight kwins taken into Tract 14) and include also 14 of his W kwins, and like Mr. Lowry's tracts they are discontinuous, made up of mutually interpenetrating kwin-groups which differ mainly in their liability to flooding. The relative contributions of kwins of

Tract.	W.	B.	X.	Y.	Total.
14	27	3	4	1	35
15	14	89	34	4	81
16	...	..	26	52	78
17		.	8	41	49
Total	41	32	72	98	243

Mr. Lowry's tracts to each of them is shown in the marginal schedule. It was in these three tracts that those first experiments in soil-classification were undertaken which were described in Chapter VII. The tracts were temporarily called B, C and D. Tract B then included kwins which were securely protected from floods, the kwins near the Government's bund at Shwelaung (kwin 1051) being representative; Tract C, of which the greater number of kwins in Hngetpyawgyaung Circle were representative, included kwins which while fairly

well protected were yet liable to have their bunds topped by floods now and again or to have floods well up from their centres and therefore yielded rather less than the B kwins; Tract D included kwins so liable to flood as to be inferior to Tract C. The kwins of the northern edge of Hngetpyawgyaung Circle (*e.g.* kwin 1117) were taken as representative of Tract D, and so far as I had discovered in my preliminary examination these were the worst kwins of the township. But the further knowledge gained in detailed soil-classification led to the inclusion in each of these tracts of other kwins which did not satisfy the above descriptions. Tracts B, C and D were thus enlarged to become Tracts 15, 16 and 17. Tract 15 includes besides the normal kwins of the experimental Tract B some inferior tidal kwins which could not reach the standard of Tract 14 because the water was not withdrawn satisfactorily, or because they received no silt or lost what they received by scouring, or because their fields had a large number of uneven places which reduced the average outturn, or because the tides brought in seeds of jungle-plants which developed and caused extra expense at ploughing-time. Then, again, the high best land just inside the bund at Shwelaung, completely protected from floods, derived its water from rainfall and from the underground flow from the low flooded parts of the centres of the saucers and suffers occasionally from lack of water owing to the steepness of the slopes down to the middles of the saucers. But the best land of the kwins along the Zaletaw River on the western edge of the township could in no way be differentiated from that for all agricultural purposes, it had no bund but was protected from floods by a strip of high fields. The lower lands forming the second and third soil-classes in these two groups of kwins were absolutely identical in their soil and water, the flooding in both cases coming up from the centres of the kwins. Indeed the essential difference between these kwins, which constitute in the end the majority in the tract, and those originally taken as the type is that the highest level of first and second-class lands is reduced in the latter to the narrow width of the bund itself and of course left uncultivated. Consequently both these kinds of kwin were included in the one Tract 15, the only logical alternative being the formation of eight or more tracts instead of the three Tracts 15, 16 and 17—a course which while it would have no practical advantages would have the serious disadvantage of narrowing the basis of all statistics. It would have been difficult, too, for a Settlement Officer to assign kwins to tracts with such a wide choice, and so many detailed differentiations would moreover have stimulated the recognition of still more with

ever-increasing complexity. The assertion of the equality of all the kwins in Tract 15 for assessment purposes rests on the opinions of the cultivators as expressed in the continuous comparison which was the basis of the tracting, the validity of averaging miscellaneous statistics all over the tract so formed may be inferred perhaps from that equality or it may be taken as representing the considered opinion of the Settlement Officer who kept this difficulty constantly in mind.

349. There was also the difficulty of including in Tract 15 some kwins in which on account of the slope from the bund towards the centre of the kwin the strip of completely protected land was so narrow as to be negligible, the remainder falling into three classes exactly similar to those of a C kwin. As in such cases the little strip of superior land is off-set by the extra expense of maintaining the bund all these kwins were associated with the kwins of experimental Tract C to form Tract 16. To these were also added tidal kwins with still slower drainage than those of Tract 15. In some of these ploughing is interrupted for three or four days at spring tide even in the first-class land because, owing to slow drainage at ebb-tide, the water accumulates to reach the bellies of the cattle and grass-cutting is impossible, occasionally even the first-class land has to be patched to replace seedlings drowned or washed away, some of these kwins are perhaps a trifle inferior to the standard kwin of the tract with partial protection by a bund. In several cases the fitness of a kwin for Tract 16 was demonstrated chiefly by showing it inferior to Tract 15 and superior to Tract 17.

350. In Tract 17 flooding is severe. The typical kwins suffer more than kwins of Tract 16 because the water in the better land is more in motion and in the lower lands is deeper. The kwins between Sabayo and Hngetpyawgyaung are fair examples of the tract, they have much the same flooding, due to the increase of water in the centre, as the neighbouring kwins of Tract 16, but in addition they have floods from the north which sweep across them. Kwin 1117, for instance, is protected by a low bund from flooding by the river on its south; but periodically the floods come across the kwin from the fisheries to the north and top the bund to escape into that river. Seedlings are not generally obtained with certainty in Tract 17, in Tract 16 this failure is occasional and in some kwins never occurs. In Tract 17 the growth of weeds is heavier as a rule than in 16. But no simple account can describe all the relative qualities with regard to water and its effects in these tracts. Some kwins of Tract 16 have no land as good as the first-class of Tract 17 but have their best land superior to the second-class of the latter tract; they have accordingly been placed in Tract 16 and divided into the second and third classes only. It is believed, however, that by the method of continuous comparison with the aid of local men a fair approximation to a just representation of the nett result of the conditions has been obtained.

351. As a glance at Map III will suggest there is generally little difference between the lowest parts of the kwins of these three Tracts 15, 16 and 17. But owing to the different division by the cultivator of his time and labour to meet differences in the higher levels there are some differences found. Tract 15 for instance does not broadcast as much as 16 and 17; in none of its kwins is dry broadcasting practised. *Daungsaba* which is not found in Tract 14 is found in 15, 16 and 17, especially where dry broadcasting is practised. Heavy growths of *kyu* are troublesome in some kwins in the lower levels and the tough *sit-kaing* in the first class of Tracts 16 and 17 and lower classes of the other tracts. On the high lands such as banks of streams the *lotpanbin* and *sitpin* are the common trees, but the *sitpin* seems to grow everywhere and the *thanatpin* and *thapanbin* were also common formerly along the edges of streams. *myinga* grows on the middle levels, and much *kyi* and *nyaung* and *tein* are found, but principally in the low parts. The soil is usually a friable clay or clay loam lying over a stiff clay, and is usually about six inches deep in best lands but as little as two to three inches in the highest and 10, 12, 18 or more inches in the lowest lands. There is more sand on the high land down the western edge of the group. In the *kaing* lands of North Kyonpauk Circle the stiff clay is about three feet below the surface and has above it two layers of varying



depth, the upper of sand, the lower of loam: paddy lands of this circle too often have two or three inches of sandy loam at the surface. *Letywesin* is the usual variety of paddy in the first class of Tract 15 and is common in Tract 16, but is there replaced in a fair number of wetter kwins by *ngasein* which is also the common kind in Tract 17 where *letywesin* is never grown. *Kala* paddy is the general favourite in the second class of Tract 15, while this class in 16 and 17 uses *ngasein*, *ngascinbilu*, *ngakywe*. *Kala* is also common in the third class of Tracts 15 and 16 but *bawwyut* or *ngasein* are commoner in 16; *bawwyut* or *yosein*, which is of such long life that it is still green in January, is often used in 17, and *posa-ngasein* is used in some places of that tract. In distinction from kwins of Tract 14 in which the paddy fields commonly reach the river the kwins of Tracts 15, 16, 17 often have a strip of garden along the river edge occupying the land outside the bund or having the bund running through its middle, but in many places the flooding makes a garden impossible.

352. Flooding has always been severe in parts of this area but it is said that it was enhanced some twenty-five years or so ago when the Po-aing embankment in the Ma-ubin District was built. That was before the last settlement, but further depreciation has taken place in a similar way in the last few years owing to the more recent changes in the bunding of the Irrawaddy. many of the kwins of Tract 17 had to be placed in that tract on this account and still more depreciation was shown by reduction of classification in kwins of Tract 16. The average quality has depreciated for another reason. Nearly all the kwins of the area formed of these tracts and 12Wx and 14 are of the saucer-pattern, and the 89,000 acres cultivated at last settlement formed the rims of the saucers, all subsequent extensions amounting to 20,000 acres or 23 per cent. have been made into the low centres of the saucers in land liable to severe flooding. The second-class rates of the current settlement, sanctioned really for land yielding 30 or even 35 baskets per acre, were not suited to land of this character but were the only rates applicable. The assesses have been enabled to pay them by the increase in the value of their produce which has been enjoyed without increase in the assessment of the better land, but, as will appear more clearly presently when calculations of the revenue demand are considered, the increase of revenue naturally due on the lands at the rims of the saucers has been fully anticipated in the process.

353. Wakèma dominates all the three Tracts 15, 16, 17 as well as Tract 14; but there are numerous large villages along the banks of all the rivers with a considerable amount of petty trade. Shwelaung, formerly the headquarters of the old Thongwa District, is now comparatively small, though it ranks as large amongst the villages it has lost all its old importance. The route from Rangoon to Bassein runs past Shwelaung and through the middle of this group of tracts to Wakèma and on to Myaungmya. The sale-value of land (Statement 6) is much lower in Tract 15 than in Tract 14 and lower still in 16 and 17. Tract 15 has 39 per cent. of its land mortgaged, Tract 16 has 47 and Tract 17 has 27; there is in fact some difficulty in getting credit on the poorer parts of Tract 17. Rents diminish like sale-prices from Tracts 14 to 15, from 15 to 16, and from 16 to 17. Tract 17 shows a considerable reduction in rental value since 1902-03, falling from 9.7 to 4.6 baskets, or expressed in money, from Rs. 9.1 to Rs. 3.9; this is a direct result of both the average and the absolute depreciation noted above. Tract 15 seems at first in Statement 5 to show a fall in rent in the last few years, but it is probable that the rent even when expressed in terms of paddy is shown unfairly high in 1912-13 as a result of the crest which occurred at about that time in the curve of paddy prices. Indebtedness in Tract 15 while below the normal in absolute amount seems to bear the usual ratio to the area owned, but like land-values diminishes from tract to tract in order. The annual expenditure shows some variations in Statement 13, due probably in part to the sampling; but they seem to lend some support on the whole to the impression that Tract 16 is a little more affluent than 17 but poorer than 15. The price of paddy has been taken at Rs. 102 all over Tract 15 and Rs. 97 in Tracts 16 and 17; the lower price is due to damping and splashing with mud and to lower specific gravity. A slightly higher price, say Rs. 99, might have been taken for

much of Tract 16, but Rs. 97 was retained as explained in the detailed treatment of Tracts 16 below.

354. For **Tract 15** the outturns assumed are 46, 32 and 16 baskets as compared with 45 and 35 or 45 and 30 which were the outturns assumed by Mr. Lowry for his Tracts B and X which make the largest contributions to the tract. The cost of cultivation indicated by the figures tabulated in Statement 12B is Rs. 12. With these bases the calculation of assessment-standards and the proposed rates are as follows—

*Assessment Tract 15.*

Soil Class.	Assumed gross produce.		Value of nett produce	Assessment standards.			Basic portion of nett produce taken.		Rate proposed.
	Government standards.	Value.		One-fifth gross produce.	Half-tenant rate.	Quarter nett produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.
R-1	46	46.9	34.9	9.4	8.5	8.7	} $\frac{16}{100}$ {	5.58	5.50
R-2	32	32.6	20.6	6.5	6.5	5.1		3.29	3.25
R-3	16	16.3	...	3.3	5.0	..			1.25

The financial effect of this revision of the settlement would be a new revenue of Rs. 1,85,297 which is Rs. 20,654 or 12.5 per cent. in excess of the current revenue of Rs. 1,64,643. The average incidence in rupees per acre (a) occupied, and (b) cultivated and assessed at full rates under the current and the proposed settlements is shown in the margin.

	Current.	New.
	Rs.	Rs.
a	3.4	3.7
b	3.5	3.8

355. For **Tract 16** the outturns assumed are 42, 28 and 14 baskets as compared with 45 and 30 assumed by Mr. Lowry for Tract X which contributes one-third of the kwins and 40 and 25 assumed by him for Tract Y which contributes two-thirds of them. The cost of cultivation has been reckoned at Rs. 11 and the calculation of assessment-standards and the proposed rates on these bases are as follows:—

*Assessment Tract 16.*

Soil Class.	Assumed gross produce.		Value of nett produce.	Assessment standards.			Basic portion of nett produce taken.		Rate proposed.
	Government standards.	Value.		One-fifth gross produce.	Half-tenant rate.	Quarter nett produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.
R-1	42	40.7	29.7	8.1	7.0	7.4	} $\frac{16}{100}$ {	4.75	5.00
R-2	28	27.2	16.2	5.4	4.5	4.0		2.75	2.50
R-3	14	13.6	...	2.7	4.5	.			1.25

The financial effect of the proposed settlement would be a new revenue of Rs. 72,077 which is Rs. 1,101 or 1.5 per cent. less than the current revenue of Rs. 73,178. The rate proposed for the first-class is a grade of four annas higher than that calculated and would agree rather with an assessment-fraction of one-sixth or 16.66 per cent. instead of 16 per cent. ; but as I have already pointed out none of the quantities upon which the calculation of the nett produce is based is so precisely and accurately determined that differences of less than one per cent. in the assessment-fraction can be discussed from the standpoint of that difference. The financial effect of the proposed system of rates with the extra four annas is a

decrease of revenue upon the tract as a whole, and the rate of Rs. 5·0 for first-class gives a better balance of rates than would Rs. 4·75 for the first-class lands of the four intimately connected Tracts 14, 15, 16, 17. Moreover, for a great part of this tract it would have been justifiable to make the price two rupees higher (Rs. 99) ; it was kept at Rs. 97 because Rs. 99 would have been a little high for some inland kwins and it was not desirable to divide the tract for price, but the inland kwins have little first-class land. Further a very large reduction results from the corrected assessment of the 15,831 acres of severely flooded third-class land (besides 2,169 acres of similar land at fallow rate) hitherto distinctly over-assessed, two-thirds of it at Rs. 2 per acre and one-third at even Rs. 2·5 per acre. The cultivators are entitled to this reduction but with it are able to bear the first-class rate of Rs. 5 instead of the calculated Rs. 4·75 without hardship. Practically the whole of the increase by 10,000 acres in the cultivated area in this tract which is shown in Statement 1 falls into this third class and its assessment at the higher rates has amounted to a progressive anticipation of the increase of revenue which would have been due at this revision if the land covered by the last settlement had still represented the whole of the cultivated area. The transfer of the best of the kwins of Mr. Lowry's Tract X to Tracts 14 and 15 also contributes to the defect of the new revenue below the old, the increase of revenue upon them has already gone to swell the increase shown in Tracts 14 and 15. The fairest consideration of the financial effect therefore involves, as already noted in dealing with Tract 14, the consideration of the effect in all four tracts taken together. For Tract 16 the average incidence of revenue in rupees per acre (*a*) occupied, and (*b*) cultivated and assessed at full rates under the current and the proposed settlements is shown in the margin.

	Current.	New.
	Rs.	Rs.
<i>a</i>	2·3	2·2
<i>b</i>	2·5	2·4

356. For **Tract 17** the outturns assumed are 38, 26 and 14 as compared with 40 and 25 assumed by Mr. Lowry for his Tract Y which contributes five-sixths of the kwins in the Tract. The cost of cultivation has been reckoned at Rs. 9 ; and the calculation of assessment-standards and the proposed rates are as follows :—

Assessment Tract 17.

Soil Class.	Assumed gross produce.		Value of nett produce.	Assessment standards.			Basic portion of nett produce taken.		Rate proposed.
	Government standards.	Value.		One-fifth gross produce.	Half tenant rate.	Quarter nett produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.
R-1	38	36·9	27·9	7·4	6·0	7·0	} $\frac{16}{100}$ {	4·46	4·50
R-2	26	25·2	16·2	5·0	2·5	4·0		2·59	2·50
R-3	14	13·6	..	2·7	1·5	...		...	1·25

The financial effect of the proposed settlement would be a new revenue of Rs. 15,724 which is Rs. 2,522 or 13·3 per cent. less than the old revenue of Rs. 18,246. This reduction is large but it is fully justified. The reasons adduced in connection with Tract 16, namely the anticipation of increase of revenue by over-assessment of newly-cultivated areas in the severely-flooded third class lands and the transfer of the best kwins to other tracts, contribute to this decrease. But in addition there is the actual depreciation of much land by the more severe flooding of recent years as noted in Chapter III ; all down the large eastern block of kwins shown in this Tract in Map III there is a larger flow of water than formerly and consequent reduction of outturns and increase of risk. In the western block of the

tract too, around Kyōnwa and Agut, there has been a large increase of flooding and consequent depreciation. The fall in rents has already been noted. The decrease of revenue is therefore to be accepted. Against it is to be set off some increase in revenue from fisheries which are of greater importance than cultivation in this tract. The rates proposed are as high as can fairly be imposed, particularly as the cost of cultivation has been reduced by the family of the cultivator doing more work than in most tracts (see column 5 of Statement 12B). The average incidence in rupees per acre (*a*) occupied, and (*b*) cultivated and assessed at full rates under the current and proposed settlements is shown in the margin.

	Current.		New.	
	Rs.		Rs.	
<i>a</i>	1'9		1'6	
<i>b</i>	2'3		1'9	

## TRACT 18.

357. Tract 18 consists of 28 kwins in three disconnected groups in the north of Mawlamyainggyun Township, all included in the Tract I of Mr. MacKenna's settlement, which is now represented generally by Tract 12, but very different from the latter in quality and resembling rather Tract 16, as all its kwins are of the saucer-pattern in which a narrow rim of fairly good land surrounds an unculturable tidal lake with intermediate zones of inferior culturable land. Throughout the tract the interests of fisheries are held to override those of paddy cultivation. Generally the first class lands grow paddies of the *ngasein* class and the lower *kaukgyi*. The middle group, around Tutaw, differs a little from the others in growing *kaukgyi* paddy even in its first class lands, but only the same price as for *ngasein* is received even on reaching the bank of the main rivers (whither it has to be sent for export) owing to the discolouration by mud which it invariably suffers. This discolouration occurs of course in the low-lying soils of all tracts, but usually there is first class land producing grain free from this defect; in the Tutaw group the whole crop is stained. As a matter of fact, however, little first class appears on the maps of this group because the Duntabè fishery includes all the water channels within it, and cultivators are therefore unable to take measures to protect their crops from floods although they claim they could do so if allowed. The cultivators point out numerous streams which they say were originally not included in the fisheries but have been added to them from time to time, thereby diminishing still further their opportunities to improve their crops. One is bound to remark how strange it was at last settlement to associate these fishery kwins with the ordinary kwins of Tract I, assessing them at the same rates and marking off a fair amount of first class land. This question of the fishery was brought to the notice of the Deputy Commissioner, who, after enquiry by the fishery staff, passed orders in favour of the fishermen but was afterwards, I believe, led to doubt the reports on which his order was based. The eastern group in the Kyundeik Peninsula also suffers from the water of the fishery which runs up into the kwins from south and increases the flooding due to the Irrawaddy and Yazudaing; otherwise this group might have been taken into the rather better Tract 19. Both these groups and the western group around Katko complain that during the last six or seven years they have suffered from river floods more severely than before, and say it is a result of some work upon embankments at Yandoon; they do not think they are much more deeply flooded, but the water does not run off so quickly as before. In the first class land of this group the water on a spring-tide day is knee-deep even at low tide (but not much deeper at high tide), while at neap tide it may fall to four or five inches. When floods come the first class land is submerged to mid thigh, the second class up to the waist, and according to some the third class would seem to get out of knowledge.

358. As a glance at the map will show, both the eastern and the western groups stand out as peninsulas dividing the Irrawaddy and Yazudaing respectively into parts and naturally receiving a large share of those streams as floods; and the soil is in places a little more fertile than in Tract 16 owing to silt which is retained from these. But the action of the floods is unequal and in many places seems to result finally in scouring away all the silt that is brought. In places the soil is only

two or three inches' deep and has a red sub-soil which occasionally comes to the surface but in others there is friable clay six or seven inches deep over a hard yellow clay. The jungle formerly existing included *teinb u*, *tauksha*, *sitpin*, *pyinma*, occasionally *thitpyu* and even *bamaw* and *thayet*, but all tree jungle and especially the last two varieties were scarce. The greater part was covered with *kaing* grass (*manawkun*) and, if the weeds in the fields of to-day are any indication of former conditions, waterlilies and the *paganbin* were plentiful. The scarcity of *bamaw* and *thayet* is one symptom of the sharp contrast between the two banks of the Kathahmyin *chaung* which separates the western (Katko) group of this tract from Tract 1 with which it has hitherto been associated in assessment. But one has only to step ashore at any ordinary point in each of these Tracts 12 and 18 to perceive immediately that they are of an entirely different character; a sharper contrast could hardly be found.

359. The tract contains no towns or large villages nor even large houses; the best houses are those of the Karens in the Kyundeik Peninsula which holds the most north-easterly of the three groups of kwins, and some of these have a little garden land around them. There is practically no other cultivation besides these house-gardens and paddy. The sale price of land as shown in Statement 6 has been a half of that of Tract 12. Three-fifths of the land is let to tenants and rents average two-thirds of those of Tract 12. Both sale prices and rents bore a slightly higher proportion to those of Tract 12 formerly than now. Forty-three per cent. of the land is under mortgage. Statement 15 shows that all six of the cultivating owners examined had permanent debts; this percentage of 100 is an accident of the sampling but a wider basis would have yielded a high percentage too. Statement 13 gives low figures for the expenditure on living and agrees therein with the impression received by camping in the tract which is distinctly poor. Tract I of 1902-03, which as already stated includes all the kwins of the tract, had assumed outturns of 50 and 40 with rates of Rs. 5 and Rs. 3.50 per acre. Outturns are now assumed to be 45, 30, 15, and the price is placed at Rs. 97, the same as for Tracts 16 and 17, as the paddy which is sold is principally *ngasein* and such *kaukgyi* as is sold is of inferior quality and costs above the average to transport to the selling place; much of it weighs only 48 pounds per basket. The cost of cultivation is reckoned in Statement 12B at Rs 14.

360. **Tract 18.**—The calculation of assessment-standards with the data adduced at the end of the last paragraph and the proposed rates are as follows:—

Assessment Tract 18.

Soil Class.	Assumed gross produce.		Value of nett produce.	Assessment standards.			Basic portion of nett produce taken.		Rate proposed.
	Government standards	Value.		One-fifth gross produce.	Half tenant rate.	Quarter nett produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
R-1	45	Rs. 43.7	Rs. 29.7	Rs. 8.7	Rs. 6.0	Rs. 7.4	} $\frac{19}{100}$ {	Rs. 5.64	Rs. 5.75
R-2	30	29.1	15.1	5.8	6.5	3.8		Rs. 2.87	3.25
R-3	15	14.6	.	2.9	5.5	...		...	1.25

The financial effect of this revision of the settlement would be a new revenue of Rs. 49,589 which is Rs. 18,855 or 27.5 per cent. less than the present revenue of Rs. 68,444. The average incidence in rupees per acre (a) occupied, and (b) cultivated and assessed at full rates, is shown in the margin. The great diminution of revenue is due partly to the increased flooding and real depreciation of the land, partly to assessment in too high a class of extensions since last settlement, partly to over-assessment from the very beginning of that settlement. It was certainly erroneous to associate in the same tract such saucer-shaped kwins as these in which

	Current.	New.
a	Rs. 4.30	Rs. 3.00
b	4.48	3.11

fishery interests are predominant and the original jungle was *kaing* grass and water-lilies with the comparatively level kwins now forming Tract 12 in which fisheries receive no consideration and tree-jungle flourished. As noted above the rents and sale values are all lower than those of Tract 12. There can be no doubt that the equalisation of assessment-rates with Tract 12 was a mistake. The classification too was severe, and it was rendered still more severe by the treatment of extensions.

Soil Class.	Mr. MacKenna's Settlement figures.	Land Records, 1917-18.	New Settlement.
1	8,746	10,196	3,228
2	2,291	5,693	7,584
3	...	...	5,710
Total	11,037	15,889	16,552

The marginal statement shows the acreage in each soil-class under different conditions; the figures for the new settlement differing slightly from those of the Land Records through the resurvey of five kwins. Of the 4,852 acres of extensions since last settlement 1,450 acres have been assessed at Rs. 5 and 3,402 at Rs. 3.5, the latter being the lowest rate sanctioned for the tract. But practically all this land of new extension is severely flooded and belongs to the new third-class and even Rs. 3.5 was a quite unjustifiable assessment and Rs. 5 was monstrous. The assumed outturn

of 40 baskets per acre on which the rate of Rs. 3.5 was based would seem ludicrous were its results not so serious. Had this part of Tract I which is subordinated to fisheries been assessed at Rs. 4 and Rs. 2.5 under the current settlement, as would have been more in accordance with the treatment of other lands though still severe, the 1917-18 revenue would have been Rs. 53,538; even so the new third class land would have been overassessed but the cultivators in many cases would have been compensated by retaining the rate of Rs. 4 in the first class parts of their holdings in spite of the rise in the price of paddy. Statement 20 again shows the enormous reductions in classification which have been necessary, especially from first to second class; in part this has been due to real depreciation as stated in Chapter III through the increased flooding by the Yazudaing. Under these circumstances a large reduction of revenue must be accepted. I have proposed a higher rate for the second class than is indicated by the calculations because when the tract is receiving so much relief it can afford to pay this addition which still leaves the second class rate lower than that now current and in so many acres will be imposed upon land which now bears the first class rate.

#### TRACT 19.

361. Tract 19, which includes 39 kwins, occupies about a half of the land enclosed in the loop formed by the Yazudaing and Irrawaddy and is also continued eastwards across the Irrawaddy to include the northern part of the area between that river and the Kyaikpi River. In the current settlement this tract and Tract 18 together formed the north-eastern quarter of Tract I. In many ways the tract is intermediate between Tracts 12 and 18 and it has considerable resemblance to parts of Tract 15. The portion east of the Irrawaddy is a degraded corner of Tract 12. Its surface is uneven, fields of best average level often have a considerable slope, low swamps alternate abruptly with high land. Formerly tree jungle was common; *bamaw* was the common tree on middle levels but few *thayet* were associated with it, and *kyi* is more typical of the tract as a whole, while large areas were covered with *kyu*, *tauksa* and *nyaung* and some *teinbin* also appear and *pyinma* was plentiful on the higher parts. In the lower parts water is apt to stand rather deep because owing to the fewness and smallness of its draining streams the tide water gets out again very slowly. The water does not get out at every tide except near neap tide; the daily oscillation is only a smaller wave imposed upon the larger wave-form of which the spring tides are the crests and the neap tides the troughs. Everywhere there is a heavy growth of

grass owing to the continued entry of the tides in the hot weather; as the water is fresh there is no such injury to the soil as this entry causes in the southern tracts of the district, but there is either increased cost of cultivation or diminution of outturn. *Ngasein* is grown on the first-class lands as a rule, and *kaukgyi* on the second and third classes; a few internal kwins like Bamaw Kwin grow *kaukgyi* on first-class lands and get slightly larger outturns than other kwins, but they fail to get any nett increase of value for the harvest either because of the cost of conveying the paddy to the Kyaikpi River in small boats or because of low specific gravity of the grain, or for both reasons together. Sandbanks in the river are particularly in evidence in this part of the tract as causes of a decline in price; those in the Kyaikpi River prevent the passage of boats except at spring tide, those on the Irrawaddy side prevent barges coming to the bank to load except at a few spots. The northern part of the tract, between the Irrawaddy and the Yazudaing, changes slowly to the character of Tract 18 towards the north and centre. The outturn falls off a little at Duntabe but a rise of Rs. 3 in price compensates, further north Pôkamidaung gets normal outturn and, being free from sandbanks, the normal price in spite of a slight loss in specific gravity. The division of the two Tracts 18 and 19 was one of the most difficult to make because of this balancing of advantages and disadvantages, but local opinion has been followed. In the case of kwins 1250, 1251 and 1252 there was a difference of opinion locally and I had to decide to place them in Tract 19 because they have facilities for marketing, did not appear to be so badly flooded as Tract 18 on an inspection at a spring tide at the beginning of the rains, and are included in the most highly assessed tract of all in the current settlement, and because the people who claimed Tract 18 for these did not seem to appreciate fully that internal classification allowed for the relative proportions of good and bad. It was impossible, however exactly as in Tract 18 to avoid a large reduction of classification, though not quite so serious it leads to a loss of revenue on the resettlement of this tract. Statement 20 shows the very large area of 10,046 acres reduced from first to second class in a tract in which the total area of paddy land is 25,000 acres with only the small area of 145 acres raised from second class to first. Some part of this reduction is due to actual depreciation by increased flooding in the kwins towards the north but largely it is due to severe classification under the current settlement which made insufficient allowance for the irregularities of surface in this tract. There has been little extension of cultivation since last settlement.

362. There are no large towns in the tract but there are several large villages, of which Duntabe in the north and Nwayegyaw and Kywegan in the south may be mentioned. Cultivation is confined to paddy and a few house-gardens, but some groups of the latter are fairly large and they make up 376 acres altogether; there were also 13 acres of betel gardens in 1917-18 and in the south a very little dhani begins to appear. Sale-prices of land have advanced steadily since last settlement (Statement 6). At first they bade fair to differ comparatively little from those of Tract 12; but by 1917-18 they had been left behind, though the figures in Statement 17 based upon settlement records do not show so much difference as those of Statement 6 based upon records of the Land Records Department. Rents, too, approach those of Tract 12, and in Statement 5 Tract 19 is shown with a higher rent (in paddy) than Tract 12 in 1912-13; the ordinary local statement, however, is that rents are somewhat lower in Tract 19 as is suggested by the settlement figures in Statement 16 and the 1917-18 figures of Statement 6. Indebtedness amongst cultivating owners is rather above the average, the average debt of indebted owners is about the average for the settlement area, but more owners seem to be indebted. The average annual domestic expenditure also appears to be above the average per acre or per head for the settlement area even if the "Extraordinary" expenditure of the Karens is omitted. The price of paddy has been fixed at Rs. 99 for the whole tract and the cost of cultivation at Rs. 15.5. Outturns are estimated at 50, 34 and 18 baskets per acre, just a trifle below those of Tract I. Under the current settlement the assumed outturns are 50 and 40 and the rates Rs. 5 and Rs. 3.5 in every kwin.

363. **Tract 19.**—The calculation of the assessment-standards on the basis set out above and the proposed rates are as follows :—

*Assessment Tract 10.*

Soil Class.	Assumed gross produce		Value of net produce	Assessment Standards.			Basic portion of net produce taken.		Rate proposed.
	Government-standards.	Value.		One-fifth gross produce	Half tenant rate.	Quarter net produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
R-1	50	Rs. 49'5	Rs. 34'0	Rs. 9'9	Rs. 10'0	Rs. 8'50	} 10 100 }	Rs. 6'46	Rs. 6'50
R-2	34	33'7	18'2	6'7	9'0	4'55		3'49	3'75
R-3	18	17'8	.	3'6	5'0	...		..	1'50

The justification for proposing for second-class land a rate four annas above that calculated in column 9 lies in a comparison with the scale of rates (Rs. 7, Rs 4 and Rs 1'50) proposed for Tract 12 and in the largeness of the area now paying Rs. 5 per acre as first class but reduced to second class and in a consideration of the total financial effect of the proposals and the circumstances of the tract. The annual revenue accruing from the rates now proposed would be Rs. 1,01,223 which is Rs. 16,212 or 13'8 per cent. less than the current revenue of Rs. 1,17,435, the diminution being due to the necessity for reduction of classification of such large areas. The average incidence of the revenue in rupees per acre (a) occupied, and (b) cultivated and assessed at full rates is shown in the margin.

	Current.	New.
a	Rs. 4'6	Rs. 4'1
b	4'6	4'1

PRIMARY TRACTS 20, 21, 22—ASSESSMENT TRACTS 20, 21A, 21B AND 22.

364. Primary Tracts 20, 21, and 22 make up together the fifty-nine kwins settled by Lieutenant-Colonel Ormiston in 1905-06 in which the settlement is now to be revised. They occupy the small diamond-shaped area which juts out from the middle of the eastern edge of the district. In Map I the present settlement arrangements are shown, the combination of three soil-tracts and two price-tracts resulting in a somewhat kaleidoscopic map. Considerable changes have taken place since that settlement. At that time the local price of paddy was largely determined by a shortage of carts which no longer exists. But difficulties have arisen by the continued growth of sandbanks in both the Kyaikpi River on the western side and in the Kyawzan *chaung* on the eastern side. Neither of these rivers is navigable throughout by barges now in the dry season except on three to four days at spring tide. The sandbanks on the Kyaikpi River extend from the diffidence from the Irrawaddy to a little way below Kyaikpi and have reduced that town from an important centre in the Delta to a large village of mere local interest. On the other side the sandbanks extend all round the bend in the river which forms the northern point of the diamond and some way down the eastern side. The relative price of paddy in different kwins has consequently changed. Soil qualities have also changed through flooding. The more important change is that which seems to have been induced like that in Tracts 16, 17 and 18 by the recent changes in the embanking of the Irrawaddy in Ma-ubin District; this has led to a large increase in the spill of the Irrawaddy along the north-western edge of the tract, the extra water flooding low places in all kwins for some way across. Of small magnitude compared with this, but still of considerable local interest, is a certain interference with the drainage which has been caused by the raised footpath which Government has constructed from Kyaikpi to Kyawzan since last settlement. There has thus been a great deal of change in both the internal classification and in the tracting of kwins both for quality and for price. The changes are too complex to describe here. Three primary tracts, one divided into



two parts for assessment on account of a difference of price, have been formed and the distribution of kwins of the old tracts amongst these is shown by Maps I and III or by Statement 21, while Statement 20 shows the changes of classification.

365. The three new tracts may be conceived as lying on three different levels. Tract 21 is intermediate. Tract 22 is higher and has no flooded land but has for its second and third classes land which has an insufficient water-supply. Tract 20 is the lowest: its first-class land is on about the same level as that of Tract 22, but its second and third classes are lower instead of higher than the first class. Soils are generally clays but sandy where silt is received from floods. The configuration of the kwins is generally of the saucer type except in Tract 22. Tract 20 resembles very closely Tract 16 which is not far distant from it. *Ngasein* is grown in all three tracts on the first-class land and *kaukgyi* upon third-class except in Tract 22. Second-class land sometimes has one kind, sometimes the other. In Tract 20 dry broadcasting is practised.

366. Kyaikpi formerly was the capital of the area composed by the tract, but since the shoals formed near it Kyawzan on the eastern edge has begun to dispute its supremacy. The two towns are connected by the footpath already mentioned, and the map shows running in a north-easterly direction from Kyaikpi across the area a small stream which enables sampans and very small steamers to travel across very quickly, but it is too shallow for barges. As a result of the flooding the occupied area of the group of tracts diminished between 1914-15 and 1918-19 by 500 acres (see item 7 in the table of paragraph 208). Yet the sale-value of land has risen recently in all the tracts according to Statement 6 and stands now at 86, 96 and 98 rupees per acre. Forty-three per cent. in Tract 20, 50 per cent. in Tract 21 and 70 per cent. in Tract 22 are rented, the rent being about Rs. 11 in Tract 20 and Rs. 13 in the others. Indebtedness appears to be higher and more widespread than is the average of the settlement area. The standard of expenditure as shown by Statement 13 tends also to be distinctly above the average. The general impression obtained by looking about in the area is that the people are rather better off than in other parts of the settlement area. There are many good houses and some particularly good Christian churches such as the wooden one at Sitsalidôn and that of brick with coloured glass windows at Pattan. But much of this aspect of opulence is really an aspect of the indebtedness, and much is due to the area having been cultivated and settled for a long time. It is interesting to note that there are many Karen rent-receivers in the area and that one frequently hears there that Karens are addicted to a life of the *taingsa* (sit and eat) variety, meaning that they wish to live as receivers of interest and rent without working. This has so often been ascribed to the Burman as a quality which distinguishes him from the Karen that it is pleasing to find the reverse established, the truth is of course that neither Burmans nor Karens are sharply distinguished in this from human beings in general. The price of paddy in Tract 20 and in 21B appears to be slightly lower than in Tract 19 and to be fairly represented by 97; near Kyawzan in the area free from the effects of the sand-banks an additional Rs. 5 is obtained and Tract 21A was accordingly marked off. In Tract 22 there is a little uncertainty. I was unable to give much time to this trifling group and do not understand completely why its price should be lower than that of Tract 21B; but Rs. 95 has been reckoned in accordance with local statements. As explained in Chapter XII Rs. 16 has been assumed for the cost of cultivation for all four assessment-tracts. The outturns now proposed for the second class do not differ considerably from those assumed by Lieutenant-Colonel Ormiston, but they have of course the important qualification that there is now a third class provided. For the first class the assumptions for outturn have been raised considerably in practically every kwin, 46 baskets replacing 40 and 42 replacing 35. The rates of assessment proposed at last settlement by Lieutenant-Colonel Ormiston were not accepted by Government because they were too high. In the present case it is proposed to take a slightly larger share of the net produce than in the remainder of Mawlamyainggyun Township, namely twenty-hundredths or one-fifth instead of nineteen hundredths. This is the share considered fair by Government in the Resolution upon Lieutenant-

Colonel Ormiston's settlement for tracts in which the cost of cultivation exceeded Rs. 15, and it seems to give a reasonable system of rates having regard to all the circumstances.

367. The calculation of the assessment-standards and the proposed rates and their financial effect in each tract are as follows:—

*Assessment Tract 20.*

Soil Class.	Assumed gross produce.		Value of net produce.	Assessment standards.			Basic portion of net produce taken.		Rate proposed.
	Government standards.	Value.		One-fifth gross produce.	Half tenant rate.	Quarter net produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
R-1	42	Rs. 40'7	Rs. 24'7	Rs. 8'1	Rs. 6'0	Rs. 6'2	} $\frac{1}{5}$ {	Rs. 4'94	Rs. 5'00
R-2	28	27'2	11'2	5'4	6'0	2'8		2'24	2'50
R-3	15	14'5	...	2'9	2'0	...		...	1'25

The rate for second class lands has been placed at four annas more than is indicated by the calculated rates. This is justified by comparison with Tracts 16 and 17 and by the general financial effect and the balance of the system of rates: as was pointed out earlier in this chapter the calculated rates are indicators of suitable rates, but as none of the quantities on which they are based can be determined with exact precision small variations from them must be admitted. The financial effect of this revision of the settlement would be a new revenue of Rs. 17,316 which is Rs. 2,124 or 10'9 per cent. less than the current revenue of Rs. 19,440. This loss is entirely due to the extra flooding. The formation of sandbanks and, in other tracts, the necessity for a more reasonable assessment in the third class and the more equitable selection of land for the first class would in any case have moderated the enhancement, but the area placed in the third class has been largely increased by the new floods; this class includes no less than one-half the whole tract (4,872 acres in 9,602). The diminution of revenue is however less than in other tracts like 18 and 19 similarly affected, because the greater part of the new third class land in this case was already assessed at Rs. 1'625 or Rs. 1'875 and not, as in those tracts, at Rs. 3'5. On holdings which do not include third class land the proposed rates will represent a considerable increase of revenue. There is a small subsidiary comparative reduction in the new demand as compared with the old due to the settlement maps showing 2,567 acres of fallow while the surveyors showed only 2,220. The average incidence in rupees per acre (a) occupied and (b) cultivated and assessed at full rates under the current and the proposed settlement is shown in the margin.

	Current.	New.
	Rs. 2'0	Rs. 1'8
b	2'6	2'4

*Assessment Tract 21A.*

Soil Class.	Assumed gross produce.		Value of net produce.	Assessment standards.			Basic portion of net produce taken.		Rate proposed.
	Government standards.	Value.		One-fifth gross produce.	Half tenant rate.	Quarter net produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
R-1	Rs. 46	Rs. 46'9	Rs. 30'9	Rs. 9'4	Rs. 7'5	Rs. 7'7	} $\frac{1}{5}$ {	Rs. 6'18	Rs. 6'25
R-2	32	32'6	16'6	6'5	7'5	4'0		3'32	3'50
R-3	18	18'4	...	3'7	5'5	...		...	1'50

The financial effect of this revision of the settlement would be a new revenue of Rs. 28,608 which is Rs. 1,544 or 5'7 per cent. in excess of the current revenue of Rs. 27,064. No great increase could be expected in revising a

settlement which has had only thirteen years' currency including its initial period of intermediate rates; some losses are due to more correct assessment of low third class lands and a little to the obstruction of drainage by the footpath. The floods from the Yandoon bunds may have had a little effect in increasing the areas of second and third class too.

*Assessment Tract 21B.*

Soil Class.	Assumed gross produce.		Assessment standards.				Basic portion of net produce taken.		Rate proposed.
	Government standards.	Value.	Value of net produce.	One-fifth gross produce.	Half tenant rate.	Quarter net produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
R-1	46	Rs. 44.6	Rs. 28.6	Rs. 8.9	Rs. 7.8	Rs. 7.1	} $\frac{1}{5}$ {	Rs. 5.72	Rs. 5.75
R-2	32	31.0	15.0	6.2	7.8	3.7		3.00	3.00
R-3	18	17.5	...	3.5	5.5	...		...	1.50

The financial effect of this revision of the settlement would be a new revenue of Rs 40,326 which is Rs. 1,040 or 2.6 per cent. more than the current revenue of Rs 39,286. The average incidence in rupees per acre (a) occupied and (b) cultivated and assessed at full rates under the current and the proposed settlements is shown in the margin. The smallness of the increase is due to the formation of sandbanks, increased flooding and the more equitable assessment of third class lands

	Current.	New.
	Rs. 2.9	Rs. 2.9
	3.1	3.2

*Assessment Tract 22.*

Soil Class.	Assumed gross produce.		Assessment standards.				Basic portion of net produce taken.		Rate proposed.
	Government standards.	Value.	Value of net produce.	One-fifth gross produce.	Half tenant rate.	Quarter net produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
R1	42	Rs. 39.9	Rs. 23.9	Rs. 8.0	Rs. 6.0	Rs. 6.0	} $\frac{1}{5}$ {	Rs. 4.78	Rs. 5.00
R2	30	28.5	12.5	5.7	5.5	3.1		2.50	2.75
R3	16	15.2	...	3.0	4.5	...		...	1.50

The proposed rates upon both first and second class lands is four annas above that indicated by the calculations. This is justified by the general financial result and by comparison with the rates obtained for Tracts 20 and 21. The first class land of this tract is in no way inferior to that of Tract 20 but is rather superior on a general average as its inferior parts can be supplied with water to some extent from the higher second class while in Tract 20 the difficulty is flooding which is beyond the cultivator's power to control. The tract is too small also to determine whether Rs. 16 is correct for the cost of cultivation. The financial effect of the proposed revision of the settlement would be a new revenue of Rs. 13,508 which is Rs. 257 or 1.94 per cent. above the present revenue of Rs. 13,251. The smallness of the increase is due partly to the need to write so much land down to second and third class (Statement 20) and partly to the assessment of kwin 1211, (old number 1111) at the full rates of the tract under the current settlement through overlooking the footnote on page 119 of Lieutenant-Colonel Ormiston's report in which he recommends a lower rate; in a small tract of five kwins this has a large effect upon the financial result for the whole. The average incidence in rupees per acre (a) occupied and (b) cultivated and assessed at full rates under the current and the proposed settlement is shown in the margin.

	Current.	New.
a	Rs. 2.8	Rs. 2.9
b	2.8	2.9

368. For the whole group of Tracts 20, 21A, 21B and 22 the financial effect of the proposals is a new revenue of Rs. 99,758 which is Rs. 717 or 0·72 per cent. more than the current revenue of Rs. 99,041. The smallness of this increase is due largely to reductions through changes in the physical conditions for which compensation should be sought in the improvements made in other parts by the new embankments. The other main causes of the failure to show a considerable increase of revenue are the short term for which the current settlement has been in force, the effect of the sandbanks, and the usual anticipation of the increase by over-assessment of new extensions into very poor flooded land for which in many kwins no appropriate rate was provided, although from paragraph 7 of the Local Government's Resolution upon Lieutenant-Colonel Ormiston's report and the related recommendations in the Notes of the Settlement Commissioner and the Financial Commissioner it seems that it would have been permissible for Deputy Commissioners to prescribe such a rate. The term of the current settlement in this case has been particularly short, the full rates only came into force in 1909-10 and for half of the time they have been applied has fallen in war years, any large change in the demand under these conditions is clearly to be deprecated. The diminution of occupied area, too, though small yet, is like a straw showing how the wind is blowing.

PRIMARY TRACT 23.—ASSESSMENT TRACTS 23L AND 23M.

369. Primary Tract 23 consists of four separate groups of 11, 6, 8 and 4 kwins respectively, all included in Tract I of the current settlement of Mr. MacKenna and is best described as accommodating kwins along the southern and south-eastern edge of Tract 12 in which the water is so saline as to cause a clearly marked reduction of the quantity and quality of the outturn. It looks a little odd perhaps to have these four groups in one tract, but that happens chiefly because the forest reserve in the south-east corner really belongs to this tract of which only these small pieces are cultivated. Taking the four groups in order from west to east they may be named the Pyaleik (or Pyaleik and Anan *chaung*), Mabe, Myitkale and Shawgyaung groups. The Pyaleik group (in which the four kwins on the west of the Anan *chaung* are included) is composed almost entirely of *kanazo* land, and in accordance with the usual rule the cultivation is newer than in Tract 12 to its north though not so new as in Tract 28 to the south. Brackish water enters the fields at harvest-time and the river water is not fresh enough for drinking in the hot weather. Jungle has been only partially cleared, many *kanazo* trees still standing in the cultivated parts. The surface is broken up by a large number of watercourses and is very uneven, full of small hummocks and marshes, the persistence of the unevenness is due to defective ploughing, which again is due to the particularly heavy growth of grass stimulated by the inundations of the dry season. The salt water diminishes the outturn and makes the paddy lighter in weight than in Tract 12, coupled with greater distance from the market and diminished competition amongst buyers this causes the price of paddy to be about Rs. 5 lower than in Tract 12 so that Rs. 102 has been assumed for this settlement. There is particular difficulty in some years in this tract at harvest-time owing to incursions of salt water which spoil the sheaves laid upon the field-bunds, or the grain upon the threshing-floor. Many of the people are expecting the land to improve with more cultivation, but they are optimists who should take to company promotion, some improvement has been effected by bunding out the salt water in the hot weather, but it will be many years before this can be done so effectively as to reach the standard of Tract 12. As the Pyaleik neighbourhood is far from bazaars few pedlars come, and diet and life generally are unusually monotonous. Mosquitoes are troublesome even in the hot weather and are very bad in the rains, sandflies are often bad too. Rents are peculiarly high, frequently higher than in Tract 12; the highest rent I met was in this neighbourhood and was 24 baskets per acre in a holding of which about one-half was first-class. The competition amongst tenants seems to be due to the better tenants getting land in Tract 12 with its greater amenities and leaving the inferior tenants the choice of becoming labourers or indulging in mutual cut-throat competition here

where landlords however consider themselves no better off because of the increased risk of the tenant's default. The optimism already mentioned has also a part in causing these high rents.

370. As might be expected from the first description of the tract as a degraded part of Tract 12 there is a close resemblance between this tract and Tract 13. The Shawgyaung group receives salt water from the inward tides of the Bogale River, which impinge on its south-eastern corner and differs from the other groups in growing *ngasein* instead of *kaukgin* paddy on its first-class soils and in being fully cultivated. The Mytkale group also receives its salt water from the direction of Bogale. Both the Mytkale and the Mabe groups resemble Pyaleik closely except in not showing the same high rents. This difference is probably due to having been cultivated longer the defects of the land and water have been realised as they will also be in Pyaleik shortly and indeed have already been in Anan *chaung*. The Mabe group is characterised by a particularly heavy growth of *baw* grass as well as by the entry of salt water. The third-class land and all land not yet occupied consists of *kanazo* jungle (*nga-ye-taw*) of the most difficult kind, low and wet with salt water, cumbered with a tangle of its own roots and prickly jungle. Very little comparatively of this third-class land is yet cultivated.

371. Pyaleik is the largest village in the western part of the tract but is really quite insignificant and Kyonmange is the true regional centre, the two eastern groups look rather to Bogale than to Mawlamyainggyun as a result of getting from the former, which is nearer Rangoon, a slightly higher price for their paddy. There is some dhani in all the groups and a small area of house-gardens on the eastern side, apart from these there is no other cultivation than that of paddy. The area cultivated, however, has nearly doubled since 1902-03 and is still extending, especially in the group of kwins near Pyaleik. The sale-value of land as shown in Statement 6 has risen very rapidly from Rs. 39 to Rs. 101 per acre, but the current classification is too erroneous to allow any importance to be attached to the proportions shown in lines 4 and 5 of the statement. The figure for 1917-18, however, receives confirmation in the Rs. 112 deduced in Statement 17 from the enquiry made by the settlement party. The principal reason is the high average rent of 17·7 baskets per acre which is paid for the two-thirds of the tract let to tenants and has been explained in the last paragraph. The standard of living appears in Statement 13 to be somewhat low, partly because of the distance from bazaars and the fewness of peddlars who come to these parts partly because of the poverty of the people. Indebtedness appears to be distinctly high in Statement 15 and this agrees with the impression received when travelling in the tract. Paddy is sent from all the tract to Rangoon, in the Pyaleik group the trade is controlled by Kyonmange, in the Mabe group by Mawlamyainggyun, and in the other groups by Bogale. A price of Rs. 102 is fair for the whole tract, the eastern kwins which grow some *ngasein* obtaining some compensating advantage by nearness to Bogale. Outturns have been estimated at 48, 33 and 18 per acre, which may be compared with 50 and 40 assumed by Mr. MacKenna. The cost of cultivation is somewhat high and is reckoned in Statement 12B at Rs. 18 per acre.

372. **Tracts 23M and 23L.**—No distinction in assessment between the parts in the two townships of Labutta and Mawlamyainggyun is made at present and none is proposed. Separate figures are given for the two parts in Statement 19 but they will be taken together here. The current rates of assessment in both; as parts of current Tract I, are Rs. 5 and Rs. 3·5, but there is very little under the lower rate. For both tracts the fraction now taken of the net produce will be increased to one-fifth or 20 per cent. instead of the 19 per cent. taken in the remainder of Mr. MacKenna's Tracts I and II (new Tracts 12, 13, 18 and 19). The large allowance for the cost of cultivation is one reason for this, but the principal reason is that this will give rates which bear a suitable relation to those proposed for Tracts 13 and 19. Even with this increase of the assessment-fraction there will be, as in all tracts which have had a large recent extension of cultivation, a decrease

of total revenue. The calculation of assessment-standards with the foregoing data and the proposed rates are as follows —

*Assessment Tracts 23L and 23M.*

Soil Class.	Assumed gross produce		Value of net produce	Assessment Standards			Basic portion of net produce taken.		Rate proposed
	Government standards.	Value		One-fifth gross produce.	Half tenant rate.	Quarter net produce.	Fraction.	Value	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.
R-1	48	49'0	31'0	9'8	13'0	7'8	} $\frac{1}{5}$ {	6'20	6'25
R-2	33	33'7	15'7	6'7	8'0	3'9		3'14	3'25
R-3	18	18'3		3'7	6'5				1'50

The proposed rates are identical with those proposed for Tract 13 which seems to be of equal assessable capacity. The same rates in Tract 13 gave an increase by 18 2 per cent in the revenue, but in Tract 23 the financial effect of applying the proposed rates is a new revenue of Rs. 72,685 which is Rs. 11,430 or Rs. 13'6 per cent. in defect of the current revenue of Rs. 84,115. The average incidence is the same per acre occupied and per acre cultivated and assessed at full rates because there is no land assessed at fallow rate its value is Rs. 4'92 under the current and Rs. 4'25 under the proposed settlement. This present average incidence of Rs. 4'92 at once gives food for thought if it is remembered that Rs. 5 is the first class rate. It shows that there is ground for the complaint made by the cultivators of the Myitkale group against "the present level rate of Rs. 5 without distinction of quality" they asked that Rs. 5 should be made the first-class rate under the new settlement with second-class land cut off for lower assessment. It supports the Pyaleik landlords when they claim a right to charge a uniform rate of rent per *kwet* all over all holdings, when asked why they made no distinction between holdings with much good or much poor land they replied that they only copied Government who took the same revenue from all qualities of land. The actual acreages are shown in Statement 19, and to anybody who is acquainted with the conditions of a *kanaso* tract the proportions shown for second class under the current settlement are absurd the enormous area shown in Statement 20 reduced from first to second class (column 2A) is the natural result. This erroneous classification is due as in most tracts to the severity of the original settlement and to the consequent severe classification by surveyors of extensions. Taken in with the remainder of Tract 1 in the records of that settlement these *kwins* are indistinguishable; but if as a sample the Pyaleik group is taken—it was originally selected from the various tracts at random when I was studying this matter—it is found that the whole area of 1,434 acres was placed in the first class and that in this area 1,087 acres of worked land were associated with no less than 347 acres of fallow. The revenue rose at last settlement from Rs. 1,006 to Rs. 5,478 (increase of 440 per cent.) the rise being softened by intermediate rates for five years to Rs. 4,391 (increase of 330 per cent.). The meaning of so much fallow land was probably salt muddation—nothing is said about it and no surprise seems to have been felt at so much first-class land lying fallow—but in any case the application of the same rates to all land in Pyaleik as to selected first-class near Mawlamyaing-gyun could not be justified. Given a start like this and the consequent assessment of extensions at first-class rate nothing but a diminution of revenue could be expected whenever the assessments were revised. The difficulty is not to justify the reduction but to understand how the people have supported the present assessments. The truth is that they have not, but have surrendered their land to money-lenders who have carried on because they have been able to get such high rents (which do not depend solely upon the quality of the land) and because of the wave

of high paddy prices which began to rise just about the time when the original holders had to retire. There can be no doubt that in some measure the rise of rents in other tracts to the north has been due to this state of affairs in the south discouraging all extension into newer land. Immediately to the south, in the Kazaung area which adjoins this Pyaleik area and is now being settled for the first time, there is a flat rate of assessment of Rs. 2 per acre which compares very favourably with the Rs. 4.92 of Pyaleik. Kazaung was still untouched jungle at last settlement, but already 87 per cent. of its culturable land is cultivated; many passed over Pyaleik to go further south even to the salter water and still greater loneliness of Hlaingbôn (Tract 29).

PRIMARY TRACT 24.—ASSESSMENT TRACTS 24W, 24A AND 24B.

373. Primary Tract 24 with 32 kwins consists principally of the best of the three grades of kwins (Tracts 24, 25, 26) into which the main block of Mr. MacKenna's Tract IV has been divided, but it includes also five inferior kwins of his Tract II. In character it resembles Tracts 13 and 23 very closely, consisting of *kanazo* land, but it is inferior in both outturn and price. It is in fact one step lower than Tracts 13 and 23 in the regular scale of descent from Tract 12 through Tracts 23, 24, 25 and 26 to Mr. Duffin's Tract 7. Near the Pyamalaw River it is less salt than Tract 23, but the soil begins to show symptoms of the approach to the hard soils of Myaungmya Township which becomes clearly marked in Tract 26; away from the Pyamalaw the water is a little salter than in Tract 13 and even near that river four salt spring tides are received and a slight salt deposit forms on the surface. The cultivation is generally still quite new, the cultivated area having increased from 7,954 acres in 1902-03 to 30,508 in 1918-19—practically quadrupling. In most holdings there is some part in which the *kanazo* trees are either still standing or have been recently felled and lie upon the ground to be burned in due season. In the cleared patches the surface is still uneven; there has not yet been time to trim the surface by repeated ploughings, and this co-operates with the changes in soil texture and water to make the yield less than in Tracts 13 and 23. In the newest lands the soil is still full of humus; its true character can only be studied in the older holdings.

374. The regional capital in the southern part is Kanbè, which is just outside the tract on the opposite bank of the stream on the south-west side of kwin 754; the northern part just comes within the sphere of Kyônmangè. Kanbè, however, has the lion's share and though it is not yet of great size is rapidly growing; all the other villages are quite small. There is dhani in the creeks; but apart from this and a few house-gardens chiefly in the northern part of the tract there is no other cultivation than that of paddy. Sale-values of paddy-land have grown but are lower than in Tracts 13 and 23. Rents too, having grown steadily from 4.9 to 10.5 baskets per acre between 1902 and 1918, are still below those of Tract 13 and of course below the exaggerated rents of Tract 23. About three-fifths of the paddy-land is rented. Fifty-eight per cent. of the land is under mortgage. The scale of domestic expenditure appears to be about normal for Burmans but below the average for Karens who more generally live in small groups scattered in the jungle where they can avail themselves to some extent of free jungle products. Indebtedness is rather less than one would expect to find in a new tract in which only three-fifths of the land is rented—that is, say, one-half in the hands of non-agriculturists.

375. Under the current settlement the five kwins in Tract II have assumed outturns of 40 and 30 baskets per acre and corresponding rates of Rs. 4 and Rs. 2.5. As in so many other tracts it was absurd to suggest that these second-class assumptions and rates were in any sense appropriate to much of the land newly taken up; the matter was not so bad as in older tracts because some of the land not yet occupied at last settlement was of good quality whereas in the older tracts

only inferior land was left. But the classification has been farcical. In a total of 1,919 acres only 17 are assessed as second class. This could only be reasonable if the first-class assessment were exceedingly low or if the tract were a billiard table with 17 acres for the spots instead of being exceedingly uneven and cut up by streams and hollows. In reclassifying, 2 of the 17 acres were retained in the second class and 15 relegated to the third; and even of the first class 483 acres had to go down to third class while only 535 were fit to be kept in the first class. In the main part of the tract which under the current settlement stands in Tract IV with assumed outturns of 35 and 25 baskets and assessment-rates of Rs. 2.5 and 1.75 the matter has not been serious. The second class rate though high for what was really third class land could be paid because the first-class rate was low. Moreover, the classification was more reasonable though not satisfactory, and much of the land has been in the dome of its development-curve during the currency of the settlement.

376. For the new settlement the assumed outturns are placed at 44, 30 and 16 baskets. The first-class outturn is thus placed higher than in Mr. MacKenna's Tract II and all outturns are considerably higher than in his Tract IV. The price is estimated in the main body of the tract at Rs 7 below that of Tract 12 which gives Rs 100. But the portion in Wakèma Township gets a slight advantage of about Rs 2, and in deference to local views this part, which in any case had to be made a separate assessment-tract because of the division by a township boundary, has been styled Tract 24W and assigned a price of Rs. 102. Two kwins in the south have been given a price of Rs. 97 under the style of Tract 24B while 24A is the name of the main body of the tract. Both 24W and 24A include some kwins of Mr. MacKenna's Tract II, but 24W has most of them; all three tracts include some kwins of Tract IV. The cost of cultivation is reckoned at Rs. 16 in all parts and the normal assessment-fraction of one-sixth is adopted as for all tracts of high cost of cultivation in which present assessments permit this.

377. Tract 24—The calculation of assessment-standards and the proposed rates for each part are as follows.—

*Assessment Tract 24A.*

Soil Class.	Assumed gross produce.		Value of net produce.	Assessment standards			Basic portion of net produce taken		Rate proposed
	Government standards	Value.		One-fifth gross produce.	Half tenant rate.	Quarter net produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.
R-1	44	44	28	8.8	90	70	} $\frac{1}{6}$ {	4.67	4.75
R-2	30	30	14	6.0	50	35		2.33	2.50
R-3	16	16	...	3.2	40	...		...	1.85

The calculated rate for the second class indicates rather Rs. 2.25 than Rs. 2.50 for the assessment; but Rs. 2.50 has been adopted because it fits in with the general scheme of rates in Tracts 24, 25 and 26 better than Rs. 2.25 and compares better with the rates of Tract 13, while the calculated rates, as usual, are regarded as guides rather than fetters. The financial result of this revision of the settlement would be a new revenue of Rs. 34,076 which is Rs. 8,240 or 32 per cent. in excess of the current revenue of Rs. 25,836. The average incidence in rupees per acre (a) occupied and (b) cultivated and assessed at full rates is shown in the margin.

	Current.	New.
a	Rs. 2.08	Rs. 2.77
b	2.10	2.77



*Assessment Tract 24B.*

Soil Class.	Assumed gross produce.		Value of net produce.	Assessment standards			Basic portion of net produce taken.		Rate proposed.
	Government standards.	Value.		One-fifth gross produce.	Half tenant rate.	Quarter net produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.
R-1	44	48.7	26.7	8.5	9.0	6.7	} $\frac{1}{6}$ }	4.45	4.50
R-2	30	39.1	13.1	5.9	5.0	3.3		2.18	2.50
R-3	16	15.5	...	3.1	4.0	...		...	1.25

The calculated rate for the second class is again raised in this tract as in Tract 24A because there is no reason for distinguishing between the tracts. This part of the primary tract consists of two kwins which considered they would be harshly treated if assessed on the same scale as 24A and were supported in this contention by the cultivators of the neighbouring parts of Tract 24A. The paddy is a little lighter in weight and cost a little more to convey to the main river, and a total difference of Rs. 5 in the price results. But the effect of this is chiefly felt in the first class; it has little or no effect in the smaller balance left in second class land after the part of the cost of cultivation which is paid in kind has been met, and moreover, as in all these new tracts, the cost of cultivation of the second-class land is rather below the average. The financial effect is a new revenue of Rs. 1,675 which is Rs. 1.25 or 8.06 per cent. in excess of the current revenue of Rs. 1,550. The average incidence per acre (a) occupied and (b) cultivated and assessed at full rates is shown in the margin.

	Current.	New.
	Rs.	Rs.
a	2.09	2.26
b	2.09	2.26

*Assessment Tract 24W.*

Soil Class.	Assumed gross produce.		Value of net produce.	Assessment standards.			Basic portion of net produce taken.		Rate proposed.
	Government standards.	Value.		One fifth gross produce.	Half tenant rate.	Quarter net produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.
R-1	44	44.9	28.9	9.0	9.0	7.2	} $\frac{1}{6}$ }	4.81	5.00
R-2	30	30.6	14.6	6.1	5.0	3.6		2.43	2.50
R-3	16	16.3	...	3.3	4.0	...		...	1.25

For this tract also, consisting only of eight kwins of which five with two-thirds of the area belong to the lowly assessed Tract IV it seems desirable to differentiate from the main body of Tract 24A only in the first class, accordingly the above rates are proposed. The financial effect is a new revenue of Rs. 14,381 which is Rs. 70 or a negligible trifle per cent. below the current revenue of Rs. 14,451, the reduction being due to the anticipation of increase of revenue involved in the failure already described in the recognition of second class soils in the kwins of Tract II which form one-third of the tract. The average incidence per acre is Rs. 2.95 per acre for both the current and the proposed settlement.

378. For the whole of Tract 24 the financial effect of the proposals is a new revenue of Rs. 50,132 which is Rs. 8,295 or 19.8 per cent. in excess of the present demand of Rs. 41,837. There is really a fall of Rs. 1,282 on the five kwins of old Tract II and a rise of Rs. 9,677 or 28.3 per cent. upon the 27 kwins of Tract IV.

379. All the parts of Tract 24 were largely affected by the new surveys made in 1919 and the figures quoted for the "current revenue" above and in Statement 19 are calculations of what would have been the current revenue if the new maps had been ready when the assessments were made. The actual assessments made were as shown in the margin. Tract 24B is not given as its kwins were divided and parts of them are now in 25B. Part only of the difference of acres and rupees from those noted above is due to resurvey, on the figures of the actual assessments it will be seen that the new proposals give a small increase in Tract 24W.

	Acres.	Revenue.
		Rs.
24A	19,758	26,327
24W	4,778	14,247

## PRIMARY TRACTS 25 AND 26—ASSESSMENT TRACTS 25B, 25C AND 26.

380. Tracts 25 and 26 occupy together the balance of Mr. MacKenna's Tract IV which has not been included in Tract 24, the former having 30 and the latter 23 kwins. They represent two further successive steps in increasing salinity of water and stiffness of soil, so that the high third-class lands of Tract 26 resemble very much those of Tract 8. On Map III it will be seen that Tract 24 occupies most of the land quite close to the Pyanmalaw River which, as noted in Chapter I, has fresher water than other streams then on both sides of Tract 24. Tracts 25 and 26 distinguished by green and yellow colours form two zones of decreasing fertility with a disturbance of the system, however, by a narrow strip of kwins placed in Tract 25 along the left bank of the Ywe River. The eastern parts of Tracts 25 and 26 get their salt water from the Kakayan *chaung* and the Anan *chaung*, the western from the Ywe River and from the Waingkana *chaung* which forms a bye-pass for some of the water of the Ywe River, is rather saltier than the main river and flows through the middle of Tract 26. Low fields get salt water even as early as November. While classifying one often found numerous shells of *Pecten* scattered in the fields of all soil-classes in Tract 26 giving the clearest possible evidence of the great salinity of the inundations. Soils as already noted are stiff. The stiffness is chiefly in the higher soils which are generally very shallow, only four inches deep, and cover a subsoil of stiff yellow clay. The characteristic original vegetation of first class lands and low second-class lands, is *kanazo*, while on the higher lands *pyinma*, *myinga saukbin* and *kyetyo* predominate, *kyetyo* soils are very poor indeed, are frequently left fallow and in some cases are now being abandoned by the cultivators. Occasional complaints were made of the heaviness of the present assessment on these poorest soils though the rate is Rs 1.75 per acre.

381. In many parts of Tract 26 and the most westerly strip of Tract 25 there is practically no permanent population on account of the salinity of the water, the people leave these tracts as soon as harvest is complete and go to live in Kyagan on the right-hand bank of the Ywe River. For soil-classification arrangements had to be made to bring the cultivators ten or twelve miles or more by launch each day to visit and describe their own fields. There is no industry besides cultivation, and no cultivation besides paddy and odd strips of dham on the banks of streams, but already the water is too salt for dham to be of the best quality. Both Tracts 25 and 26 like Tract 24 still have only half their area cultivated although the cultivated area of Tract 25 has quadrupled and that of Tract 26 has more than doubled since last settlement in 1902-03. The sale-value of land is very small, only reaching Rs. 30 in Tract 25 and Rs. 24 in Tract 26 after very large recent increases. Only 27 and 19 per cent. of the land is encumbered with mortgages. In Tract 25 the proportion rented is 35 per cent., but in Tract 26 only the 18 per cent. normally due to non-economic causes is rented. Most of Tract 26 is occupied in fact by the original Karen pioneers who started cultivation there. Rents are comparatively low—8 baskets in 25 and 6 in 26—although they have in both cases risen rapidly in recent years. A normal proportion of owners are indebted, but the debts average less than for the whole

settlement area. The averages for the cost of living in Statement 13 have too narrow a basis to be of value, the people are generally of slender means but manage to make ends meet with the aid of jungle products. Outturns have been assumed in successive grades below those of Tract 24, namely 40, 28, 15 for Tract 25 and 36, 25, 14 for Tract 26, with these may be compared the outturns of 35 and 25 assumed by Mr. MacKenna. Price varies with the quality of the grain and the location of the holding, two grades have been recognised in Tract 25 with prices of Rs. 97 for Tract 25B and Rs. 92 for Tract 25C, but a single price of Rs. 92 covers the whole of Tract 26. The cost of cultivation is Rs. 13 all over. The calculation of assessment standards with these data and the proposed rates are as follows —

*Assessment Tract 25B.*

Soil Class.	Assumed gross produce.		Value of net produce	Assessment standards.			Basic portion of net produce taken.		Rate proposed.
	Government standards.	Value.		One-fifth gross produce.	Half tenant rate.	Quarter net produce	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.
R-1	40	38.8	25.8	7.7	7.0	6.4	} $\frac{1}{6}$ }	4.30	4.25
R-2	28	27.2	14.2	5.4	4.5	3.5		3.37	3.50
R-3	15	14.6	...	2.9	3.0	...		...	1.25

The financial result of this proposed revision of the settlement in Tract 25B would be a new revenue of Rs. 19,319 which is Rs. 1,245 or 6.9 per cent. more than the current revenue of Rs. 18,074. The average incidence per acre (a) occupied and (b) cultivated and assessed at full rates under the both current and proposed settlement is shown in the margin.

	Current.	New.
a	Rs. 1.99	1.5
b	2.01	2.14

*Assessment Tract 25C*

Soil Class.	Assumed gross produce.		Value of net produce	Assessment standards.			Basic portion of net produce taken.		Rate proposed.
	Government standards.	Value.		One-fifth gross produce.	Half tenant rate.	Quarter net produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.
R-1	40	36.8	23.8	7.4	7.0	5.9	} $\frac{1}{6}$ }	3.97	4.00
R-2	28	25.8	12.8	5.1	4.5	3.2		2.13	2.25
R-3	15	13.8	...	2.8	3.0	...		...	1.25

The financial result of this proposed revision of the settlement in Tract 25C would be a revenue of Rs. 6,481 which is Rs. 170 or 2.7 per cent. more than the current revenue of Rs. 6,311. The average incidence in rupees per acre (a) occupied and (b) cultivated and assessed at full rates under both the current and the proposed settlements is shown in the margin.

	Current.	New
a	Rs. 2.12	Rs. 2.18
b	2.18	2.24

Assessment Tract 26.

Soil Class.	Assumed gross produce.		Value of net produce.	Assessment standards.			Basic portion of net produce taken.		Rate proposed.
	Government standards.	Value.		One-half gross produce	Half tenant rate.	Quarter net produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
R-1	36	Rs. 33'1	Rs. 20'1	Rs. 6'6	Rs. 3'0	Rs. 5'0	} $\frac{1}{6}$ {	Rs. 3'35	Rs. 3'50
R-2	25	23'0	10'0	4'6	3'0	8'0		Rs. 1'67	2'00
R-3	14	12'9	..	2'6	2'0	..			1'25

The financial result of this proposed revision of the settlement in Tract 26 would be a revenue of Rs. 10,916 which is Rs. 966 or 8'1 per cent less than the current revenue of Rs. 11,882. The proposed second-class rate has been raised above the figure indicated by the calculations because so much of it has been reduced from first class at Rs. 2'5 that in spite of the increase of the first class rate by one rupee per acre Rs. 2'0 can be paid for it, also a rate of Rs. 2 is more in conformity with the scale of rates in Tract 25. The third class rate looks high, but the conditions of survey and simplicity on the map have caused a number of small patches of second class land here and there to be taken into the lower class. This tract is very poor and chiefly occupied by cultivating owners who in many cases are still struggling to cut the *kanuso* jungle to extend their holdings and require capital for that. The rates proposed are slightly higher than those sanctioned for Mr. Duffin's Tract 6 and could not, in any case, be raised high enough to give an increase of revenue the loss on this tract must be taken with the gain on Tracts 24 and 25, the new rates in all the tracts together being regarded as one system. The average incidence in rupees per acre (a) occupied and (b) cultivated and assessed at full rates under both the current and the proposed settlements is shown in the margin.

	Current.	New
a	Rs. 1'69	Rs. 1'55
b	2'05	1'89

	Acres.	Revenue.
		Rs.
24B } 25B }	10,060	19,977
25C	2,024	6,041
26	6,735	11,511

382. As in the case of Tract 24 figures are given in the margin to show the actual assessments by the Land Records Department in these tracts.

PRIMARY TRACT 27.—ASSESSMENT TRACTS 27CL, 27CM,  
27DL, 27DM.

383. Tract 27 consists of thirteen disconnected kwins on the western side of the Ywe River omitted from the earliest settlements of the hinterland of Kyagan and first settled by Mr. MacKenna in 1922-03. The settlement in these kwins ought to have been arranged to expire with the settlement of the adjacent land so that they would have been resettled when Mr. Duffin settled his Tracts 6 and 7. It is hardly possible to settle properly so small a collection of isolated kwins and it was proposed to endeavour to fit them in with Mr. Duffin's adjacent tracts and to assess them at the rates fixed for Tracts 6 or 7. But a difference of price was found to exist and there were difficulties about the survey. To enable the Land Records Department to supply proper maps the work in these kwins was postponed till the rains of 1919 were already threatening, but as the new survey could not be performed the old maps had to be used. These are very unsatisfactory and in most holdings it proved quite impossible to classify at all accurately the best attainable

was done by assigning an average soil-class, but as the greatest care had to be exercised not to cheat the assesses by assigning too high an average value the necessary result is under classification. Moreover many dividing lines could not be drawn because it would have been impossible to translate them to a new correct survey. I should have preferred to leave these kwins for resettlement at some future time after the new survey has been made, but it was too late to ask for orders. The whole group consist of high lands almost without inhabitants at the foot of the slope of the largest dome of Myaungmya Township with a hard sterile soil and generally a defective water-supply, though here and there are flooded hollows. Much land formerly cultivated has been abandoned. In several kwins the whole area has to be broadcasted "on account of the scarcity of labour"; but this means really that as the results of extra labour would not pay for it the cultivator is unwilling to employ and nobody looks in those parts for employment. The collection of eleven kwins with 2,014 acres of paddy land falls into no less than four assessment-tracts. There is a north and south line of division for price giving two tracts denoted by C with a price of Rs. 92 and D with a price of Rs. 87. There is an east and west line of division made by the boundary of Myaungmya and Labutta Townships, the parts so formed being distinguished by the letters M and L respectively. The best ground on which to base proposals is the general equality class by class of Tract 27C to Tract 26 in which the same price prevails, that is rates should be Rs. 3'50, Rs. 2'00 and Rs. 1'25 per acre in Tract 27C with a reduction of four annas per acre for Tract 27D. If calculations are desired the cost of cultivation may be taken from Statement 12B as Rs. 10 with the following effect —

*Assessment Tract 27C.*

Soil Class.	Assumed gross produce.		Value of net produce.	Assessment standards.			Basic portion of net produce taken.		Rate proposed.
	Government standards.	Value.		One-fifth gross produce.	Half tenant rate	Quarter net produce.	Fraction	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
R-1	34	31'3	Rs. 21'3	Rs. 6'3	Rs. ...	Rs. 5'3	} $\frac{1}{6}$ {	Rs. 3'54	Rs. 3'50
R-2	24	22'1	12'1	4'4	...	3'0		2'01	2'00
R-3	15	13'8	...	2'8	...	...			1'25

These first and second class rates for Tract 27C are four annas per acre above those sanctioned for Tract 6 with which the corresponding rates proposed for 27D would therefore agree. The best plan would be to defer the application of the new settlement in these kwins until the new survey is undertaken and then to allow one of the Burman Assistant Settlement Officers Maung Kya Zan and Maung Po Mya who worked in Tracts 26 and 27 to effect the new classification. If the proposed rates are applied to the new classification as effected in 1919 the financial effect will be a new revenue of Rs. 2,562 which is Rs. 1,092 or 30 per cent. less than the current revenue of Rs. 3,654. But what would be financial effect of a new survey one cannot judge, reclassification after survey would occupy only a few days and would certainly lead to a larger and fairer demand. A settlement of some kwins in the south of the district has already been proposed, and if earlier arrangements were not convenient these kwins might be treated then. The areas and revenues of these eleven kwins have been omitted in the totals of Statement 19; the total area concerned is 2,117 acres of which 2,014 acres are paddy-land.

TRACTS 28 AND 29.

384. The two Tracts 28 and 29 constitute the area in which an original settlement has been effected. The former has 12 kwins and the latter 25. Occupation in this area on a considerable scale seems to have begun about 1903 but a few started cultivation before that. The year 1903 seems to have seen the beginning

of the issue of grants. These were often styled leases in the proceedings, and orders were made for a lease to issue but the documents actually issued were *patta* grants. In the selection of applicants to receive grants there seems to have been some uncertainty of method. Looking up the proceedings one finds cases of rejection on the ground that the applicant had no cattle but as a matter of fact he would have had no use for them except for threshing for some years, and numbers of the pioneers did their threshing by hand. One case was rejected because the applicant has "neither children nor cattle" another applicant was limited (with the approval of the Deputy Commissioner) to ten acres (which is about half the natural size of a one man holding and could not be worked at a profit because 'he had only a wife to maintain and no children' had yet arrived. The general impression received is that the reasons for rejection were sometimes disingenuous. In March 1908 the issue of grants was stopped and any person was allowed to enter upon land as a squatter with the restriction that trees were not to be cut within twenty-two yards of certain streams. This condition had been mentioned to grantees also when issuing grants in earlier years, but it was not inserted in the grant and could not therefore be of avail. Moreover the grantees had often cultivated up to the edges of the streams before the grant issued the ten acre man without children had paid revenue up to the edge of the stream for four years before the issue of his grant. All this is characteristic of the administration of these new colonies. In May 1915 the Deputy Commissioner issued a notice that anybody occupying more than fifty acres would be evicted. A more satisfactory way of preventing capitalist exploitation of the area would have been to supply a travelling dispensary to help the pioneers fight the fever which was their principal source of financial difficulty. If to this had been added advances on either an individualist or co-operative basis to help tide over crises the present condition of affairs in which nearly all Tract 28 is controlled by non-agriculturists would probably have been different. The Deputy Commissioner's order was met of course by taking up land in the names of relations as cases have been known in Burma under similar circumstances of grants being applied for and received in the names of domestic animals the Deputy Commissioner might have expected his order to be a failure. The best comment however is perhaps the order issued by the Deputy Commissioner two months later in June 1915, after the survey and first assessment, in which he confessed that he thought cultivation was only just beginning in these parts. Meanwhile there was a survey made in the beginning of 1915, a Demarcation Officer having been appointed in Revenue Department Notification No. 71 of the 16th June 1914. An Inspector of Land Records was appointed to this difficult post, and he compiled a holding-map and assessment-register in which in practically every case of dispute the richest claimant was recorded as the assessee. The only supervision he received was that represented by a set of instructions and a number of letters from the Superintendent of Land Records ordering the work to be expedited, really such work ought to be done very slowly and patiently, but the whole area of over 30,000 acres of country very difficult to move about in was disposed of in six weeks. The instructions given to the Demarcation Officer were approved by the Deputy Commissioner in English but mistranslated into Burmese when issued. Many erroneous entries of "Landholder's Status" were made in the register, especially in the case of grantees who can never acquire such a status, and the surveyors began to show this status on the map in the manner prescribed for the Special Lease Area near Rangoon, recording persons supposed by them to have a landholder's status as having landholder's certificate. No Boundary Officer was appointed in 1916 the District Office could not even discover whether such an appointment had been made or not. But something of the kind seems to have been intended because the Subdivisional Officer, Wakama, used the designation "Boundary Officer" in signing some orders he issued to the Demarcation Officer. Assessments were then instituted in 1915-16 at a uniform rate of Rs. 2 per acre. It has been said by some that assessments were first made at this time, but that is not the case. Assessments had been made since the beginning in accordance with the terms of grants, but at the time of prohibiting the issue of grants in 1908 the Financial Commissioner directed that until 1915-16 new squatters should be exempted. The change made in 1916 was really to determine all exemptions and begin

complete assessments at Rs. 2 per acre on all kinds of land. The roll for these assessments was based upon the work of the Demarcation Officer. In 1916 when the settlement party arrived there was a temporary dislocation of the work in the district revenue office and no clue to all these occurrences was given. The party therefore proceeded according to the ordinary instructions, and while undertaking the original settlement of this area prepared a new holding register illustrated by maps; in the course of that proceeding were discovered the matters now related. It was decided however (as was mentioned at the end of Chapter VI), not to use these holding-registers and maps as a basis of assessments, because where the register already used by the Land Records Department for two years differed from it disputes would be engendered. A large number of disputes had already risen, some leading to violent crimes, and it seemed improper to introduce a new source of controversy. The new holding registers and maps were therefore deposited in the District Record Room, no copies being given to applicants in the manner enjoined by Settlement Instruction 137A except three given before the decision not to use the holding-registers prepared by the settlement party was arrived at. The Deputy Commissioner, however, stopped the false record of landholder's certificates in the assessment-maps as soon as the settlement party pointed out the mistake, and further a list was compiled by the settlement party of discrepancies between their holding-registers and the assessment-rolls of the Land Records Department and sent to the district office to be treated as an ordinary Errata Statement.

385. The two Tracts 28 and 29 of which some part of the history has been recounted constitute the two village-tracts of Kazaung and Hlaingbôn, and their dividing line does not differ very widely from the village-tract boundary. The Kazaung Tract, 28, is just south of the Pyaleik portion of Tract 23, and the Hlaingbôn Tract, 29, is just south of the Kazaung Tract, the two tracts thus represent successive steps in continuation of the degradation from the quality of Tract 12 which was found in Tract 23. Practically all the land had *kanazo* jungle and is now at the crest of its development-curve or has not yet reached that point. Little or none has yet started on the downward curve and there is an almost unaccountable optimism locally that the land will improve more and more till it equals Tract 12. This can never happen. The country is broken up by small tidal streams to an extreme degree, and that involves inequalities of level. The water is salt; there is in Tract 29 great difficulty about drinking-water except just near Hlaingbôn where there happens to be an old tank made for foresters thirty years ago and now free from salt, many hamlets trust to storage in earthen jars for the whole dry season, being unable to get any other fresh water (except by a long journey) from November to May. Salt water of course floods the fields, and a white deposit is formed in consequence on the surface of the ground. Tigers, elephants, pythons and crocodiles who formerly took part in the drama of life in these parts have now almost disappeared, tigers have perhaps completely gone, and elephants rarely spoil the crops now. But, as another writer has pointed out, it was not with herds of lions and tigers that the Lord and Moses chastised Egypt, but with swarms of flies, and of these the area has its full share. Mosquitoes and sandflies hold a condominium under which the tsetse and others swarm and multiply. In Tract 28 these conditions are all less pronounced than in Tract 29, as already stated the degradation through Tracts 12, 23, 28, 29 is by successive stages. The age of cultivation also diminishes tract by tract and consequently also the degree of development. Tract 29 consist practically of small isolated groups of cultivators scattered about a network of tidal creeks all overgrown with mangrove jungle.

386. In Tract 28 fifty-two per cent. of the land is under mortgage and forty-one per cent. let to tenants, little of these two percentages overlaps and practically all the tract is under the control of non-agriculturists even when not in their hands. In Tract 29 twenty per cent. is under mortgage and only fourteen per cent. is let. The state of Kazaung is due largely to the general ineptitude of the district revenue office, which, even when the demarcation was proceeding, had not discovered that there had been occupation of the land for some time. In the Hlaingbôn area where

the result was different the stream of colonists had hardly begun in 1908 when the issue of grants ceased. In Tract 28 land sells for Rs. 70 and in Tract 29 for Rs. 45 per acre. Seventy-seven per cent. of Tract 28 and forty-five per cent. of Tract 29 are occupied; it is probable that much further cultivation will be undertaken in Tract 29 and some more even in Tract 28. Outturns have been estimated at 42, 28 and 14 baskets in Tract 28 and at 38, 26, 14 in Tract 29. Prices are Rs. 7 and Rs. 10 respectively below those of Mawlamyainggyun, having improved considerably in the last few years as the land has settled down and the grain become less chaffy. It is proposed to apply the same assessment fraction of one-sixth to the net produce as was applied to the Tracts 24, 25 and 26 derived from Mr. MacKenna's Tract IV and occupying much the same positions in relation to the salt-water axis of the district. Taking the cost of cultivation per acre in Tract 28 as Rs. 16 and that in Tract 29 as Rs. 13.5 the calculation of assessment standards and the proposed rates for these tracts are as follows:—

*Assessment Tract 28.*

Soil Class.	Assumed gross produce.		Value of net produce.	Assessment standards.			Basic portion of net produce taken.		Rate proposed.
	Government standards.	Value.		One-fifth gross produce.	Half-tenant rate.	Quarter net produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.
R-1	42	42	26	8.4	...	6.5	} $\frac{1}{6}$ {	4.33	4.25
R-2	28	28	12	5.6	...	3.0		2.00	2.25
R-3	14	14	...	2.8	...	...		...	1.25

The rate for second-class land has been placed at four annas above the calculated rate because it so takes its place better in the general scheme of rates, particularly in comparison with the corresponding rate for Tract 29. The financial effect of imposing this system of rates in place of the Rs. 2 per acre charged uniformly upon all land now would be a total revenue of Rs. 24,661 which is Rs. 7,797 or 46.2 per cent. more than the current revenue of Rs. 16,864. There is no fallow land. The average incidence under the current settlement is the uniform rate of Rs. 2 and under the proposed settlement would be Rs. 2.92.

*Assessment Tract 29.*

Soil Class.	Assumed gross produce.		Value of net produce.	Assessment standards.			Basic portion of net produce taken.		Rate proposed.
	Government standards.	Value.		One-fifth gross produce.	Half-tenant rate.	Quarter net produce.	Fraction.	Value.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.
R-1	38	30.9	23.4	7.4	...	5.8	} $\frac{1}{6}$ {	3.90	4.0
R-2	26	25.2	11.7	5.0	...	2.9		1.95	2.0
R-3	14	13.6	...	2.7	...	...		...	1.0

The financial effect of imposing this system of rates in place of the Rs. 2 per acre charged uniformly upon all lands now would be a total revenue of Rs. 19,750 which is Rs. 934 or nearly 5 per cent. in excess of the current revenue of Rs. 18,816. The average incidence per acre under the present conditions is Rs. 2 and under the proposed system would be Rs. 2.10.

387. For Tracts 28 and 29 taken together, forming the whole area of 17,840 acres of original settlement, the result of the proposals is a new revenue of Rs. 44,411 which is Rs. 8,731 or 24.5 per cent. more than the current revenue of Rs. 35,680.



388. The rates proposed for the various assessment tracts are shown in the schedule below —

Summary											
Tract.	R-1	R-2	R-3.	Tract.	R-1	R-2	R-3.	Tract.	R-1	R-2	R-3.
8A	3'50	2'00	1'00	13	6'25	3'25	1'50	24W	5'00	2'50	1'25
8F	3'25	1'75	1'00	14	6'00	3'50	1'50	24A	4'75	2'50	1'25
8C	3'00	1'50	0'75	15	5'50	3'25	1'25	24B	4'50	2'50	1'25
9A	3'75	2'25	1'25	16	5'00	2'50	1'25	25B	4'25	2'50	1'25
9B	3'50	2'00	1'00	17	4'50	2'50	1'25	25C	4'00	2'25	1'25
10A	4'75	2'75	1'25	18	5'75	3'25	1'25	26	3'50	2'00	1'25
10B	4'50	2'50	1'25	19	6'50	3'75	1'50	27C1	3'50	2'00	1'25
11M	5'25	2'75	1'25	20	5'00	2'50	1'25	27CM			
11W	5'50	2'75	1'25	21A	6'25	3'50	1'50	27DL	2'5	1'75	1'00
12M	7'00	4'00	1'75	21B	5'75	3'00	1'50	27DM			
12W				22	5'00	2'75	1'50	28			
12WX	6'00	3'50	1'50	23L	6'25	3'25	1'50	29	4'00	2'00	1'00
				23M							

389. For the paddy land in the area occupied by Mr. Lowry's Tract C, D, E, the proposals for Tracts 8, 9, 10 and 11M (altogether 79,245 acres) yield a new revenue of Rs. 1,63,840 which is Rs. 9,632 or 6.2 per cent. in excess of the current revenue of Rs. 1,54,208. The average revenue per acre in the same area in 1905-06 the first year of application of the settlement was Rs. 2'48 but owing to extensions into poorer land assessed at second-class rates this rate had fallen in 1914-15 to Rs. 2'13, and by 1918-19 it had fallen further to Rs. 1'96. Under the new proposals this average becomes Rs. 2'07, the poor quality of the land lately taken under cultivation and necessarily placed in the third class explaining the comparative smallness of the increase in the same way as it explains the fall during the current settlement. In comparing with other revisions of settlement it must also be remembered that Mr. Lowry's settlement has had a currency of only fifteen years (from 1905-06 to 1919-20), in the first five of which intermediate rates were current.

390. For the five Tracts 12Wx and 14 to 17 inclusive which form the eastern block of Mr. Lowry's area of 1903-04 (and include also his one kwm of 1904-05) the proposed rates are as shown in the margin. The result of applying these would be a new revenue of Rs. 3,73,116 which is Rs. 37,880 or 11.3 per cent. more than the current revenue of Rs. 3,35,236. Allowing for the depreciation by increased flooding and for the unduly high assessment hitherto of what has now been denoted as third class this is a very considerable increase for a settlement which will have had a currency of only fifteen years. The average incidence per occupied acre in 1905-06, the first year of the application of the current settlement, was Rs. 3'40, and in 1914-15 had fallen only to Rs. 3'36 in spite of the large increase of inferior land under the proposals this average will be Rs. 3'29, a not untoward result if the necessity for marking 38,040 acres as third class in a total of 113,556 acres is remembered, and the fact that all recent extensions have been made in severely flooded land.

391. For the whole of the 192,801 acres of the 1903-04 and 1904-05 settlements the result is a new revenue of Rs. 5,36,956 which is Rs. 47,512 or 9.7 per

cent. above the current revenue of Rs. 4,89,444. The average rates per acre of Rs. 2.78 proposed and Rs. 2.54 current may be compared with the similar averages given in paragraph 208 (column 8).

392. For the area comprised in Mr. MacKenna's Tracts I and II taken together and now represented by Tracts 11W, 12, 13, 18, 19, 23 and 24W (the last including also a trifle from old Tract IV) the result of the new proposals is a total revenue on 178,701 acres of Rs. 8,23,803 which is Rs. 6,580 or 0.8 per cent. in excess of the current revenue of Rs. 8,17,223. If Lieutenant-Colonel Ormiston's area of 37,239 acres is combined with this area to form an area comprising the whole of the Mawlamyainggyun Township and all the southern part of the Wakema Township omitted from Mr. Lowry's settlement the result for a total area of 215,940 acres is a new revenue of Rs. 9,23,561 which is only Rs. 7,297 or 0.8 per cent. in excess of the current revenue of Rs. 9,16,264. The reasons for this result have been fully explained in the notes upon each tract.

393. For the area occupied by Mr. MacKenna's Tract IV (excluding the small area already counted in Wakema Township and that now comprised in Tract 27) which is equivalent to the sum of new Tracts 24A, 24B, 25B, 25C and 26 the result is a new revenue for 32,252 acres of Rs. 72,467 which is Rs. 8,814 or 13.8 per cent. in excess of the old revenue of Rs. 63,653.

394. Thus for all the 458,883 acres in the whole settlement area (omitting Tract 27 of 2,014 acres) the new revenue would be Rs. 15,77,395 which is Rs. 72,354 or 4.8 per cent. in excess of the current revenue of Rs. 15,05,041. Compared with the increase in the price of paddy since last settlement this increase is small but the reasons have been given in dealing with the separate tracts and in the description of the current settlements in Chapter V. Throughout the greater part of the Mawlamyainggyun and Labutta Townships the original classification, especially if considered with reference to the assumed outturns and the rates imposed, was extremely harsh. The assumptions for second class land in particular were extremely high when it is remembered that no lower class was formed. The idea that 40 baskets per acre was anything like a fair estimate for the second class as a whole was a serious mistake which was made worse by the failure throughout so large an area to classify at all, the whole being placed, as in the case of the Pyaleik kwins of Tract 23L, in the first class. The surveyors acting in accordance with their orders assessed extensions which have been made in inferior land not previously taken up at the same rate as the nearest similar land which was nearly always in the first class. Consequently the tracts which have had large extensions of cultivation always show decreases or only small increases of revenue, the increase of revenue which would naturally have resulted from the increase in the price of paddy having been very largely anticipated. The deterioration through increased flooding in Tracts 17, 18, 19, 20 and 21 has led to actual reductions in revenue for which compensation will doubtlessly be found in other parts but cannot be found within the settlement area. But for the greater part of the increase associated with this revision of the settlement by the officers who prepared the forecast one must look at the rise in the average incidence per acre from Rs. 3.31 in the first years of the current settlements to Rs. 3.44 in 1914-15. It is self-evident that with extensions of cultivation generally being made in the inferior parts of the land this average rate ought to have decreased instead of increasing as it has done.

395. No estimate of the effect of intermediate rates is offered. In Chapter XVII it will be proposed that intermediate assessments shall be introduced instead of intermediate rates. The effect of these cannot be estimated but it may confidently be asserted that it will not be considerable when so much of the land is to be assessed at a lower rate than hitherto and when hardly any holding lies entirely in the first class—which is in most tracts the only condition under which a large increase of revenue in any one holding can occur.

## CHAPTER XV.—RURAL LAND NOT USED FOR PADDY CULTIVATION.

## (a) GENERAL.

396 It was explained in paragraph 239 of Chapter VII that all cultivation other than dham and wet paddy cultivation of main-kind R had been assigned to two main-kinds H and Y. Primarily the description H was applied to orchards and Y to plots with miscellaneous vegetable gardens, the essential difference being that Y plots require a large application of labour every year to renew the crops while in H plots the plants are chiefly perennial. But these descriptions will not cover all the plots which had to be classified. House-sites may be orchards including a house, or more enclosures, or anything between, the house may be an accessory to the garden or the garden an appanage of the house, the garden may yield profit or some amenity, such as shade for the house or consist only of a few wild trees allowed to stand only because there is no temptation to cut them down. All inferior sites, including all which are essentially house-sites and have no profit-yielding trees worth considering in proportion to their area, were taken into Y main-kind; while the gardens of trees which gave some amenity or profit without any such large annual investment of labour as miscellaneous vegetable gardens require were placed in H main-kind. All the miscellaneous plots thus taken into H or Y without really deserving the primary descriptions of those main-kinds are of small area and it would be useless to distinguish them in separate assessment classes. The only crops for which special rates will be proposed are dhani and betel; the former because it can afford and is accustomed to bear a high rate and the latter because it has no permanent site. These will be dealt with in parts (b) and (c) of this chapter.

397 It naturally happens that all village sites fall into either H or Y main-kind, but as will be explained in the following chapter it must not be assumed that the settlement party intended to define village boundaries in any way. The principle was to indicate the rate at which assessment should be made if it were made at all. With this principle it is possible also to simplify the maps because there is no longer any need to outline with the soil class line every assessed plot in a village. All the assessed plots could be enclosed in a single block without any suggestion that the unassessed plots ought to be assessed; yet the maps show what rate should be applied if at any time a plot now unassessed becomes by coalescence with other plots large enough to be assessed. When in such a group of sites of either H or Y quality one or two were exceptional and belonged rather to the other kind this difference was sometimes ignored, the exceptional sites were classified with the main body of their neighbours unless they were large enough singly or in a group to form a separate block. Commonly it was possible in such cases to divide the village into two large blocks, one of H and one of Y land. No hardship is caused by this irregular classification because each site concerned is so small that the difference of its revenue at the two rates would be negligible and all lands which really satisfied the primary descriptions of H and Y were correctly marked.

398. Similar action was taken in some cases in which only a few minute sites of a quarter or one-third of an acre not contiguous but dotted about the kwin constituted all the H and Y lands in the kwin. It will have been noted already that instead of H and Y some such symbols as G-1 and G-2 representing two qualities in one main-kind might have been used, and this would have been more in accordance with the ordinary practice. But the use of G, GM, GC, etc., as crop-symbols is a strong objection to using G also as a main-kind symbol; it leads to endless confusion and error in the records. And as every holding falls entirely into either one or the other class and is never divided like a paddy holding between two or more classes it conduces to ease and accuracy in compiling the assessment-roll if a separate list is made for each class; with two symbols, such as H and Y

this ensues automatically. But it is altogether unnecessary to make a separate roll for a single small holding of perhaps one-fifth of an acre. Consequently in *kwins* in which this could conveniently and fairly be done all these sites were placed in one or the other main-kind. The sums of revenue in question are one or two *anna*s in each case and cause no hardship to any assesses; the difference to Government is the net result of additions and subtractions and is probably very small, while it is certainly repaid in each case of subtraction by the saving of forms and labour in the assessment. The number of such cases was reduced by the application of another principle which will be best understood by approaching it from the genetic standpoint. It is the invariable practice in settlements to treat the sites of the temporary field-huts of paddy cultivators as paddy-land and to associate them in all records with the fields adjoining them. The same principle applies with equal fairness and convenience whether the field hut is a temporary shelter or a wooden house. When a man has cultivated the same land for several years he naturally begins to make some garden around the site of his hut, and then to replace the hut with a more convenient building and to live in it all the year. But this house bears the same relation to the cultivation as did the temporary field-hut. Consequently all small isolated homesteads standing on paddy land in the same ownership were allowed to stand in the same soil-class as the adjacent fields; if on the boundary of a soil-block the site was placed in the lower class. There was a correction necessary in all areas used for such statistical purposes as records of the cost of cultivation, but this presented no difficulty. On the other hand the maps are immensely simpler: there are no tiny blocks of soil-class in which the boundary line when printed would become a mere blob. Surveyors should be directed to treat as one holding all parts marked for the same main-kind whether used for growing paddy or for a homestead, distinguishing the latter only by a fallow symbol. They will thus be saved the labour of making large numbers of small and confused holding boundaries and of compiling many sheets of assessment-roll; and the labour in connection with writing, checking and issuing tax-tickets will all be reduced. As most house-sites fall into second class and none into third the revenue is not effected. Whenever the house-site and the surrounding paddy land were in different ownership—so that the house-site was not an essential part of the paddy-holding—the areas were differentiated and the true main-kind assigned; so too when the house-site had grown to a patriarchal settlement or a real garden had developed around it.

399. The assignment to the third class in R main-kind of some lands used for miscellaneous cultivation while being built up with silt in North Kyonpauk Circle has already been explained in paragraph 258. Some small areas in the same region on which are grown paddy or beans according to the season have also been placed in the third class of paddy land. There is a very small area of true "kaing" cultivation on the bank of the Irrawaddy just where it first enters the district. This was provisionally placed in a main-kind K at first, but it was found difficult to decide for many holdings whether K or Y would be more appropriate and enquiries showed little if any difference in assessment capacity; the total area including holdings of doubtful classification was found to be under a thousand acres and finally all was taken into Y. It has already been explained in Chapter III that the so-called "mayin" of the district is really ordinary paddy in flooded land. Accordingly it has not been distinguished from third-class paddy-land in the settlement maps, and it is recommended that *mayin* grown on newly-formed or unclassified land in the future should be assessed at the local rate for R-3. The *thetke* gardens in the north-west of Wakema Township are all in narrow strips amongst third-class paddy-land and appear to yield a profit of about Rs. 4 per acre; they are turned into paddy land whenever it is possible to clear out the ~~thetke~~ and then invariably fall into the third class. They have therefore been classified as R-3 except in the few abnormal cases in which there were trees in the same plot which required classification as Y or H. Sugar-cane is grown only on freshly cleared land to introduce paddy. It is not always possible to do this, the conditions—especially those related to water—may not be suitable or "seed" may not be available or the cultivator's imagination may not reach so far. When sugar is planted it commonly furnishes a better harvest than the poor chaffy yield of

paddy which is obtained in the first year, but it is never continued for more than two years. The inferior black cane is used and the yield generally bears no relation to the yield obtained in proper sugar-cane plantations as the canes are planted as best they can be amongst the roots of the jungle. Fairness, policy and convenience in assessment all demand that the assessment shall be that naturally given to the land when it is first used for paddy, which in nearly every case means that of third class paddy-land. Second crops are so rare that it would be impossible to organise their assessment even if it were desired to do so, there is a special objection to the thought of assessing them in this district just now because many cultivators who are inclined to experiment with jute are deterred in part by a fear of double assessment if any legume or green manure is grown between the jute crops. There is also no assessment of second crops in the part of the district outside the area of this settlement. Consequently no suggestion of a rate for second crops for the period of this new settlement will be made.

400. It is therefore needful only to suggest a single rate for each of H and Y main kinds in each tract. No reasons for differentiating one tract from another in this respect can be offered. There are no gardens run on such a plan that any reasonable or representative estimate of profits can be offered. Enquiries were made but the variation of conditions is so wide that it would be misleading to give any figures. At present all gardens in Mr. MacKenna's area and in Curden Tract II of Mr. Lowry's area are assessed at Rs. 2.5 but the total of these is not large. In Garden Tract I of Mr. Lowry's area and in all Lieutenant-Colonel Ormiston's area the rate for gardens is Rs. 3. Of the total of 15,277 acres assessed as garden under the current settlement 10,385 acres are assessed at Rs. 3 and 4,892 at Rs. 2.5. Except in Mr. Lowry's Garden Tract II where the rate is Rs. 2.0 the rate for all miscellaneous land is Rs. 2.5. Of a total of 3,953 acres assessed by the surveyors 3,753 acres fall within the portion rated at Rs. 2.5 and only 200 acres are assessed at Rs. 2. I propose for all H land a rate of Rs. 3.5 per acre and for all Y land a rate of Rs. 2.5 per acre yielding a total revenue of Rs. 56,526 in place of Rs. 52,541 now paid. The new revenue includes an uncertain sum not exceeding Rs. 237 due to the inclusion of betel-gardens in the area and may be reckoned therefore to give an increase of rather above Rs. 3,780 or 7.2 per cent.

#### (b) BETEL GARDENS.

401. The normal rate now in force for the assessment of betel-gardens is Rs. 10 per acre everywhere except in Tracts 28 and 29 where it is Rs. 2, but in the area of Mr. Lowry's settlement of 1903-04 the notification of the rates included a condition that a fixed rate of twelve annas should be imposed on all vineyards of one-tenth of an acre or less, and in the area of Lieutenant-Colonel Ormiston's settlement it was directed that the rate of Rs. 10 should be "subject to a minimum assessment of Re. 1." Whether the last means that gardens so small that the calculated assessment is below one rupee shall be omitted from assessment or that all gardens below one-tenth of an acre shall pay one rupee and larger gardens be assessed at ten rupees per acre is doubtful. The latter interpretation, like the order on the 1903-04 settlement, is illegal because it contravenes Land and Revenue Rule 75. But it is the interpretation which has been applied and every garden, however small, is assessed.

402. The gardens are only of a temporary nature; there are none of the permanent kind found near Prome, but all last for just for one season. They are generally very small and poor. The site may be in land of any kind, often it is a corner of a garden, but equally often it is a little patch of a paddy field. The object of the minimum assessment was to meet the fact that it is not worth while assessing small sums of four or six annas, particularly when the assessment involves a special measurement for the one season and a deduction from the area assessed

at soil-class rates in one part of the holding-register as well as a special entry in another. One such entry of a few annas is often the only entry of its class in the *kwin* and involves the consumption of labour and forms costing the whole of the revenue by the time the holding-register, the assessment-roll, the tax-ticket and the commission have all been provided. But the psychological effect upon the people of a system which seizes upon every minute patch of betel, only large enough for home consumption, is of importance. This is not the place to discuss the desirability of discouraging the use of betel which to some minds involves several disagreeable habits. The statesmanlike view is that if people insist upon using betel they should be encouraged to grow enough for their own needs in each house-garden, and that the feeling of oppression which results from assessing minute plots of such cultivation for a petty indulgence of the cultivator should be avoided.

403. Another consideration arises from the effect upon the work of surveyors if whenever betel is grown they have to modify the area of a garden or paddy-holding in their registers as well as make an entry for the betel-garden. This will become even more important when the system of permanent holding-numbers is introduced, especially if—as would be so convenient and for garden holdings so simple—the tax-tickets corresponding to the fixed holding-numbers are printed for the period of the settlement. There is a clear advantage if the rate for such a crop as betel of which the site is impermanent is prescribed as an addition to the soil-class rate.

404. The betel crop is very profitable if no allowance is made for the large amount of labour which the cultivator must give to it, but not so profitable otherwise. On account of the concentration of the work in a small area Rs. 10 per acre has become a standard rate of assessment in Lower Burma for betel-gardens of moderate or poor quality and the following proposals are formulated as approximately equivalent to that rate. I propose that in all except the two Tracts 28 and 29 of original settlement the rate for betel-gardens wherever found shall be Rs. 7 per acre in addition to the soil-class rate assessed upon the same land according to its classification for the settlement. In H and Y land and second-class paddy land this will be approximately equal to a rate of Rs. 10 per acre. In the small areas concerned in each garden the difference in the actual assessment and that calculated at Rs. 10 will be a fraction of an anna even in first-class paddy-land the difference will be negligible. Gardens on land which has not previously been occupied hardly ever occur, the rate in such a case should be the bare Rs. 7 as such cases always have extra expenses such as that of making a fence to protect the garden. My sole hesitation in making this proposal lay in the difference it makes between the present settlement area and the part treated by Mr. Duffin in 1912-14 where the rate sanctioned was Rs. 10 per acre with the condition that the minimum assessment on any one holding shall be one rupee. To this there is the same objection as to the order in Lieutenant-Colonel Ormiston's settlement, and there are further difficulties in the interpretation of "holding." I strongly deprecate the extension of this order to the remainder of the district, which is more than twice as large as Mr. Duffin's area. The advantage of maintaining unchanged the area of permanently occupied garden and paddy-land in spite of the temporary cultivation within it of a betel-garden is great, and quite overcomes the disadvantage of having two systems in one district. And moreover if reform in each part of the district is to be withheld because the other part has been settled on unreformed lines every improvement whatsoever becomes impossible. Also the proposal will lead to the concurrent existence of only two rates in the district instead of the four systems now in vogue and even this can be simplified at the next revision in Mr. Duffin's area. For only four surveyors will the two rates operate in the same charge, and these particular charges will rarely if ever have to make any assessments upon betel-gardens. The whole of the country east of the Pyanmalaw River, including the whole of Mawlamyaingyun and Wakema Townships and more besides, will be under one system. No confusion can arise with regard to the Rs. 7 being in addition to the soil-class rate even in the few charges where both systems will be in force, because the difference of system will be recalled by the difference of rates.

405. In the whole of the two excluded Tracts 28 and 29 are eight betel-gardens owned by seven persons and totalling nine-tenths of an acre and assessed at Rs. 2 per acre. I recommend charging Rs. 4 per acre in addition to the soil-class rate and ignoring the question of intermediate rates on the ground that the sums in question are so small. It is also being proposed that the settlement in this area shall be for only ten years.

406. The foregoing proposal will perhaps facilitate a satisfactory solution of the problem of small gardens. These will be assessed at soil-class rates in any case and I propose that the additional assessment be omitted in all cases in which the total area of one assessee's gardens in one kwin is below 0.07 acre. The assessment on this minimum area will be eight annas, and the mnemonic connection between the Rs. 7 and the 0.07 will prevent any confusion in the minds of surveyors. It is not possible to predict precisely the effect of these proposals because the number of gardens which are less than 0.07 acre is not known. Assuming that all are assessed Statement 19 shows a total revenue of Rs. 550, the remainder of the present revenue demand being included in the demand at soil class rates. It is certain that the reduction of revenue would not be large—probably about Rs. 200—while the increase of contentment and satisfaction with the settlement would be considerable.

407. At present the betel-gardens are allowed to cause unnecessary trouble to the surveyors because each is given a separate number in the area-statements, all the process of dividing a survey-number being followed for the sake of one assessment and with the effect of complicating the map and area-statement for all succeeding years. I suggest that no survey number should be given to betel-gardens; there is no difficulty in assessing correctly without them. Holding numbers may be distinguished by some symbol to denote that the areas are not to be added to the remainder of the kwin to determine the total cultivated area. The annual report of cultivated areas (Season and Crop Report) may be treated conventionally by deducting the whole area of betel-gardens separately shown from the assessed area of mixed gardens without tabulating precisely in what kind of holding each betel-garden falls—the error involved in this would be too small to be of interest to anybody.

### (c) DHANI.

408. The dhan palm (*Nipa fruticans*) grows in patches between high and low-tide levels in all the creeks which have a suitable degree of salinity and after paddy is the most important crop in the area of the settlement. The optimum area is roughly a strip about twelve miles wide with parallel edges running north-west and south-east, its axis passing near Myaungmya and its north-eastern limit being approximately that shown on the map in the frontispiece to this report. North-east of this strip dhan cannot grow because the water is fresh all the year round; to the south-west the water being too salt the quality rapidly falls off. *Kazaung* falls on the southern edge of the strip, and the dhan at Hlaingbôn is already inferior. That at Kanbè is better than that at Kyagan on account of the fresher water in the Pyanmalaw, and the best is probably found near Labutkala and Pyinywa. Usually the palms grow on the banks of the creeks, but there are also plantations covering whole islands towards the south. Continual additions of silt, due partly to the resistance which the dhan itself offers to the current, raise the level of such islands in time so that the dhan, which demands for soil a mud which being almost a highly viscous liquid offers little resistance to the expansion of the roots, tends to fail on the central parts leaving a narrow strip along the edge. On the other hand in the optimum area one continually finds that quite small hollows in the paddy-fields which receive tidal water are filled with dhan, as also are all the little distributaries which meander across the kwins. A few plants grow wild in new situations, and seeds falling between trees give rise to new roots in established plantations; but generally the palms only grow where they have been deliberately planted. They

will not grow on quite new accretions; only after three or four years when a considerable amount of miscellaneous vegetation has appeared and diminishes the force of the current can dhani be planted successfully. Generally, too, dhani stops short a little above lowtide level. The palms flower about March and the fruits form in April, ripening and falling off in the following February. Most gardens produce no fruits because the half-ripe fruits in August and September are such an edible attraction to persons passing along the rivers in boats, and because there is little to save ripe fruits which fall from being carried away by the current. In some localities these influences being less effective seeds fall when ripe and sprout on the ground under the parent tree. The Labutkala *chaung* is such a locality and supplies seed to many parts including all the area subject to the Kyōnmangè capitalists. The owners of the Labutkala dhani do not take any great trouble to sell seedlings; if a customer comes and asks for seed the children of the neighbourhood will be offered two to three annas a hundred to go out and collect seeds and they will collect anywhere without respect to ownership. Formerly there appears to have been a custom of collecting seeds in a low pile between tide levels surrounded by an enclosure of planks to prevent escape with the tide, and keeping them there to be sold with shoots ten to sixteen inches long; but this custom seems to be rarely followed now, although the price of seeds, Rs. 2 per thousand, is about the same. Seeds are collected at any time in the year, usually however in March, April and May. By April they have sprouted and in October they may have shoots a foot long. Planting is done by hand, usually from March to May, using either newly ripe seeds or seeds of the previous year ready sprouted and placing them four to six feet apart. Twigs are bent over the seeds to keep them from being washed away where that seems necessary; when that is not done about one-third are reckoned to be lost altogether from this cause and from failure to grow. Naturally in the small patches maintained to provide thatch for their owner's house with perhaps a small surplus for sale, which form the majority of gardens, it is difficult to discover what expenses are incurred in starting a garden; generally a garden near the house costs nothing at all beyond a few odd half-hours of labour. But a number of persons, chiefly at Kyōnmangè, have invested in plantations lower down the river, often of eight to twelve acres, on an industrial basis; and some idea of their expenses can be given. Shoots purchased at Labutkala cost Rs. 20 for 10,000 which will be sufficient for about six acres. Carriage to Kyōnmangè costs Rs. 10 including the unloading at Kyōnmangè to await the engagement of men to plant them. For planting two or three men go together for company; if the ground is soft three men can plant two to three thousand a day. Usually about three to five thousand seeds are taken in one journey, which with going and coming occupies five or six days. Hire of boat costs Rs. 5 for the journey; food for three men Re. 1 per day; wages eight annas per man per day; the cost of planting six acres is therefore about Rs. 5 per thousand seeds or Rs. 8 per acre. Allowing for losses an acre will have initially about a thousand successful plants. In the third and fifth years the jungle must be cleared at a cost of Rs. 7 per acre each time and this expense recurs every two or three years thereafter. Cutting may begin in the fifth or sixth year, but the seventh year is more usual and only half the subsequent yield can then be taken. Full bearing is reached in the tenth year, and the tenth to eighteenth years produce also the best leaves; in the best samples a leaf at this stage is a load requiring two men to carry it. Often the trees begin to weaken before the eighteenth year owing to continued additions to the soil raising its level so that it gets hard; or on the other hand the garden may be destroyed in whole or part by erosion. The true history of the trees is therefore difficult to learn; but it seems that after about the eighteenth year the fronds tend to get shorter although the trees may go on past their fiftieth year without dying and some say they never die if they are treated carefully by cutters and kept free from weeds and do not suffer through erosion or accretion. New leaves appear every year in March, generally one to each plant; when cutting in March or April this newly-formed leaf and the leaf of the previous year are left and the one leaf a year older than that is cut. The cutters strip the leaflets from the rachis at once and only carry the former away. In the fourth year and occasionally thereafter a special phenomenon occurs, two new shoots being formed; thereafter each of these



*shoots* develops as a separate plant with a new shoot every year. As each new shoot appears in the cleft between the last two preceding it is possible to trace back the order of formation of the leaves of which stumps remain; observation of several clumps showed that this parthenogenesis took place at nine or ten years' interval but this period probably varies from place to place with soil-condition and in some plants did not seem to occur at all. Combined with the production of some new trees from fallen seeds this leads of course to a large increase in the number of palms in the garden.

409. Dhani is always marketed in the form of the *byit* which are used for making the roofs and walls of houses. To make a *byit* the worker, sitting on the ground, holds under the left arm a split bamboo six feet and four to six inches long and about half an inch wide, resting its forward end on the knees. A dhani leaflet is then taken and slipped with the left hand under the bamboo so as to lie perpendicular to that and have about four inches of the wide end, which in the growing plant was attached to the rachis, protruding towards the right hand. A sharp upward knock with the right hand while the left hand holds the bamboo down breaks the midrib, of which the right hand can then draw out a piece about four inches long. The leaflet is next drawn through as far as its middle point and folded over the bamboo, the two folds being pinned together with the broken piece of midrib held in the right hand. Successive leaflets being thus folded over the bamboo contiguous to each other until the other end of the bamboo is reached, the worker obtains a *byit*—that is, a fringe about 15 to 18 inches deep and 76 or 77 inches long hanging from the bamboo strip. As the length of a *byit* never varies more than an inch or so, the number of leaflets in it varies with the width of these from 40 to 70 averaging about 52. The *byit* makers are nearly always females from twelve years of age upwards without limit; I have seen a very quick worker make three *byit* of 55 leaflets each in fifteen minutes, while an old woman took fifteen minutes for one of 46 leaflets. An average worker fastens about eight leaflets a minute, but some additional time is needed to carry leaflets from the store to the working spot and to place the bamboo in position and eight *byit* an hour means hard work. The pay is eight annas a hundred *byit* and the daily wage varies from ten pies to six annas, most getting about five annas.

410. Owners of small gardens naturally cut their own dhani and often the juvenile and female members of the family make the *byit*. But as in this cottage industry the costs are shared with those of other occupations valid and reliable figures for the profits are not obtainable. Moreover a small change in the rate of assessment would be of no consequence to these gardens of small area. For the purpose of investigating profits, therefore, it is best to consider the larger gardens whose owners engage labourers at job or piece rates for each operation and confine themselves to supervising and marketing. A large number of *byit* are produced by such owners living at Kyōnmangè, and a fair average example for the purpose of calculating costs is furnished by one of these who owns an extensive plantation yielding forty thousand *byit* each year. Dhani cutters are hired at Rs. 8 per thousand *byit*, this means that they must go in a boat furnished by the employer, cut the dhani, separate the leaflets from the rachis, tie them up in bundles called *paw*, and bring the *paw* to their employer, unloading the boat and depositing the *paw* in a place convenient for the *byit* makers. The number of *byit* eventually produced by each cargo of *paw* determines the amount of the hire. As an average *paw* yields twenty *byit* it contains from 800 to 1,400 leaflets according to the size of these. A boat worked by one man and carrying about fifty *paw* is hired at Rs. 4 a month, more commonly a boat worked by four or five men and carrying 200 to 250 *paw* is hired at Rs 15 a month, in either case three trips can be made in a month, each lasting about eight days, the days of spring tides being rest-days as they are not suited to the work. The work of cutting is carried on from January to April, chiefly in the Burmese months of Tabodwè and Tabaung. If the cutters are not skilful, they have to be hired again to clean up the plantation at the end of the season; skilful workers will leave little to be cleaned up, but commonly the owner will encourage them to work quickly, accepting the extra expense for clearing

as a result, the holding under consideration costs usually Rs. 30 to Rs. 40 for cleaning up each season, and about Rs. 100 for the triennial clean-up. The bamboo strips known as *dan* which make the backbone of the *byit* are bought at Rs. 30 per ten thousand, or bamboos fourteen cubits long and furnishing twenty *dan* each may be bought at Rs. 4.5 per 100 and cut up at one anna per 100 *dan*. The *byit* are made as soon as the *paw* arrive at the village and then they must be stacked at once (by children at two to four annas per thousand) in small blocks to dry and to prevent attacks of insects. Where the work is done on a large scale a light tent of mats supported by the bamboo poles must be erected to protect the workers from the sun; this is usually built out on to the road in front of the employer's house, and its net cost for our example with 40,000 *byit* after allowing for other uses of the materials after dismantling is approximately Rs. 40. The cost of *byit* manufacture may therefore be reckoned at Rs. 19 per thousand apart from the interest on capital. Perhaps Rs. 21 might be taken as an average to allow for journeys of the employer to the garden and for expenses of marketing which always occur although the *byit* are sold at the place of manufacture. This estimate ignores however the cost of Rs. 8 per acre for establishing the garden, the interest on all capital used and the land-revenue.

Rupees per 1,000 <i>byit</i> .		Rs.
Cutting	...	8
Boat	...	1.2
Cleaning up	..	1.5
Bamboos	..	3
Sewing	...	5
Tent	..	0.1
Stacking	..	0.2
Total	...	19.0

411. The rate of produce of the gardens varies widely, but nothing is found approaching the annual rate of 3,500 *byit* per acre which Mr. Arbuthnot found in the Hanthawaddy Settlement. The garden of the last paragraph is a successful one and yields about 2,200 per acre. There are difficulties about the measurements owing to the loss of trees by the hardening and erosion of the land. Eight hundred *byit* per acre is a common rate in small gardens of nominally half an acre or so. One large garden assessed as eleven acres now yields 8,000 *byit* at the age of thirty years, but this is towards the southern limit of the optimum zone and probably suffers from neglect. Conditions inimical to dhani are excessive or insufficient salinity of the water, waves due to wind or traffic washing away soil from the roots, heavy wind and the lack of the society of other plants, one or other of these conditions operates nearly everywhere. In addition many gardens suffer because they are far away from supervision. Perhaps 1,000 to 2,000 *byit* per acre is the usual range of outturn and 1,300 the normal, supposing areas were correctly estimated. The dhani from the salter areas is inferior to that from farther north-east because it is so much more liable to attack by insects that it can only be made to last two seasons at most and commonly lasts only one; the superior kinds, if the house is closed up completely once a year for some hours with a smoky fire inside, will often last three or four—though usually this precaution is neglected and most of the dhani lasts only two seasons. But the selling price is the same for both kinds because the poorer kind is entirely absorbed by the local demand. The price varies from Rs. 3 to Rs. 4 per hundred *byit* at the place of manufacture; and Rs. 20 to Rs. 25 per acre approximates to the annual value of the net produce ignoring the costs of capital and of establishing the garden.

412 The rate of Rs. 5 per acre, which was imposed under all the current settlements, therefore appears to be suitable also for the forthcoming settlement, particularly as it has now become the customary rate for this crop. Special consideration however is required for the two Tracts 28 and 29 of original settlement. Their present rate for dhani is Rs. 2 per acre, and as a short settlement of ten years is to be proposed for this area I suggest that the dhani rate should be Rs. 3 for five years and raised to Rs. 4 thereafter. It is particularly undesirable to discourage dhani cultivation in this area which is now just undergoing colonisation. Apart from these two tracts the dhani revenue will remain unchanged. Within these tracts the dhani area is 379 acres and the proposed rates would yield an immediate increase of Rs. 379 with an equal increase again in the sixth year of the settlement.

413. There are peculiar difficulties in determining fairly the area to be assessed to dhani, but inspecting officers should be asked to give more attention to it. Whatever the difficulty about surveying the edge on the water side there is no reason why parts of gardens in which the constant addition of silt has raised the level so high that the dhani will no longer grow should still be assessed at the dhani rate. There are numerous cases of a garden of mangoes and betel-nut palms with a dhani strip on the edge being charged the dhani rate all over. The reason is a confusion in the minds of surveyors between crop-rates and main-kind rates which is excusable under the terms of the current settlements. In order that land may be reverted to its proper assessment when it ceases to yield these particularly valuable crops the notification of rates for the new settlement should state precisely that the rate for dhani, as for betel, is a crop-rate operating through all main-kinds.

#### (d) SOLITARY TREES.

414. The total number of assessed solitary trees' in the settlement area is only 2,605 and the revenue demand is Rs. 651, all being charged at a four-anna rate. The trees are always of comparatively small value, and it is quite impossible in practice to check their assessment which should therefore be discontinued as it was in the case of Mr. Duffin's settlement of the remaining one-third of the district.

#### (e) CONCLUSION.

415. For all other than paddy-land the result of the proposals is thus that an area of 21,188 acres will yield a revenue of Rs. 73,446 which is Rs. 3,166 or 4.5 per cent. in excess of the current revenue of Rs. 70,280 which includes the tree-tax. In notifying the new rates it is imperative that R, H and Y lands shall be described only by their main-kind symbols and the rate for dhani shall be definitely prescribed as a crop-rate to be applied in substitution for the soil-class rate so long as dhani is grown and similarly that for betel as a crop-rate in addition to the soil-class rate.

### CHAPTER XVI.—TOWNS AND VILLAGES.

416. In the central parts of the towns all gardens and house-sites and uncultivated lands have been included in H main-kind, in all other respects the land of towns and villages has not been distinguished in classification from other land. Distinction in fact would have been impossible even if it had been desired, because, apart from the land in the five areas which constitute towns under the Town and Village Lands Act, there is nothing to show the Settlement Officer which land is under the Town and Village Lands Act and which land is under the Land and Revenue Act, or which is a recognised village-site and which is not. It often happens probably that the boundary of a block of land of one soil-class is a village-boundary, but that must be regarded as accidental, the settlement party had no intention of defining the village-land. As in the maps of rural land the classification shown on the maps indicates the rate to be applied if the land is assessed and does not pretend to show liability to assessment.

417. If it is assumed that there is no village-land anywhere in the district, and admitted therefore that no provision for dwelling-places has been made, the only land for which the Financial Commissioner will need to notify rates of assessment will be that in the five towns, revising part of his notification No. 68 of 1912. But if that assumption is not made this (which is the usual procedure) will not be sufficient, rates must be prescribed for village-lands too. It is neither necessary nor possible to give a list of the "villages"; the notification should direct that in every kwin all areas and

trees subject to the Town and Village Lands Act (and not included in the towns for which rates are separately prescribed) are to be assessed in accordance with the Settlement Officer's classification and at the rates which have been or shall be imposed under the Land and Revenue Act in the portions of the same kwin to which the latter act applies. (Outside the five towns there are no kwins which could be held to fall entirely under the Town and Village Lands Act.) Such a notification would legalise all the assessments without in any way affecting the problem of the definition of "village-lands," which cannot possibly be solved before the new settlement comes into force

418 In the three towns of Myaungmya, Mawlamyanggyun and Wakèma it is desirable to leave all increments of tax-paying capacity due to the urban character for the benefit of the local funds and to fix the same rate of assessment to land-revenue for each soil-class as for the rural land of the same class in the vicinity. The rates for Myaungmya would thus be those prescribed by the Local Government for Tract 8A, and for Mawlamyanggyun and Wakèma those prescribed for Tracts 12 and 14 respectively. For Shwelaung and Kyaikpi the case is slightly different because district cess money is and must be spent there although it cannot legally be collected. Shwelaung belongs to Tract 5, the portion of Kyaikpi on the west of Kyaikpi River belongs to Tract 20 and that on the east to 21B. A system might well be started for such towns by which rates would be prescribed which exceed those prescribed for the surrounding rural tracts by approximately ten per cent. the total excess of revenue due to this difference of rates should be calculated for the year of the settlement, and, since the area under fallow or reduced rates in towns in any year is almost negligible a fixed assignment of the multiple of ten rupees nearest below this total should be made by the Local Government to the District Cess Fund. But the establishment of this principle in the present case of two towns with a very small assessed area is not worth while the same rates may therefore be imposed in Shwelaung and Kyaikpi as in Tracts 15, 20 and 21B. I also propose of course that the boundaries of Kyaikpi Town shall be carefully surveyed and that special maps and assessment rolls shall be kept for it apart from those for the adjoining rural lands

419. As the area of the village-land is unknown no estimate of the revenue derived from it can be made that revenue has already been included, however, in the estimates made for the yield of the proposed rates in each rural tract in Chapter XIV. For the towns Statement 19 shows that the new revenue will be Rs. 7,122 in place of the old revenue of Rs. 6,713, the increase being Rs. 409 or 6.1 per cent. The old revenue amounted to Rs. 3.75 per acre occupied in the year of the new settlement and the corresponding figure for the proposed revenue will be Rs. 3.98.

## CHAPTER XVII.—REDUCTION OF NORMAL ASSESSMENTS.

420. The system in vogue at present for ameliorating the hardship felt by assesses at the beginning of a new settlement on account of the effect upon their domestic economy of an increase in the revenue-demand upon paddy lands consists in the application in all soil-classes in which the new rates exceed by fifty per cent. the old rates in soil-classes of the same name of reduced rates which remain in force for five years before the full new maximum rates are substituted for them. This idea was foreshadowed even in the original Hanthawaddy and Bassein settlements of 1879-80, and it was applied in this form as long ago as 1890 in a settlement in the old Thongwa District, although it was only explicitly defined as the fixed policy of Government in 1901-02. In those days the soil-classification preceding the revision was generally uniform throughout a kwin, and the revised classification was itself fairly broad. But in recent settlements the steadily increasing magnitude of the rates has demanded much closer and more detailed correspondence between the land and its soil-class, and classification has therefore become

more complex. The control of the enhancement of the liabilities of the assesses through class-rates is now impossible\* ; large enhancements in some parts of a holding cause no shock to the assessee if there are sufficient reductions in other parts due to changes of classification. The assessee is concerned not with the rates of assessment in each class but with the total demand made upon him ; and it is clear that the ideal system of controlling the enhancements must deal not with rates but with the total demand upon each assessee which results from applying those rates. Until recently, however, the problem of dealing with these demands has been regarded as too difficult to be attacked, and the system of intermediate rates has been applied as a subterfuge to evade that problem. Unfortunately it fails completely in its object, and not merely that but causes fresh harm. It resembles a rifle liable to gross errors fired at the wrong target by an unskilful marksman. Not only does it in many cases fail to give the required relief and in other cases give relief which is not necessary and is therefore a needless reduction of the revenue but it often succeeds in actually reducing for a time the revenue of an assessee whose revenue would have been enhanced in quite a moderate or even small degree if the normal rates had been applied at once and will, on account of the temporary reduction, be enhanced by more than fifty per cent. when the period of intermediate rates expires. Apart from the objections to such technical inefficiency there is the bewilderment which this third class of cases must cause amongst the assesses. Moreover, where there had been a change in tracting it often happened that the old soil-class corresponding to a particular new one had a different name, a matter which was entirely ignored by the system of intermediate rates. The system in fact, if applied to the settlements of the present era, is both futile and mischievous and is quite indefensible.

421. An attempt was made in Bassein after the settlement of 1912-14 to deal with the enhancements by holdings. It failed because orders were issued only on the 29th January, after most of the assessment-rolls had been completed. But unfortunately the failure was ascribed by many, not to this, the true cause, but to the inherent difficulties of the problem. On account of this verdict and the clear futility of the ordinary system of intermediate rates a system was proposed in Prome of dealing with kwin as units. It was only proposed because the application to holdings had been pronounced impossible, and it was not accepted. Meanwhile another scheme to outflank the problem had been devised, working like the system of intermediate rates by fields and consisting essentially of a modification of that system and orders were issued to apply it in the present settlement. This was the reason for showing both the old and the new soil-class of each paddy-field in the classified area statements as explained in Chapter VI. (Statement 20 shows a summary of the tabulation.) The intention was to prescribe for a time, besides any intermediate rates required according to the system in vogue, special reduced rates for the fields which had been raised in class. (But the logical concomitant of special enhanced rates for fields which had been degraded was, for obvious reasons, not contemplated.) The system was applied in the revision of the settlement of newly-irrigated areas in the Shwebo District, but the conditions there were peculiar and success there no recommendation for application in Myaungmya. A few of the errors of the crude system of intermediate rates are met ; but most of them remain and are the more serious because of the false hopes raised by the modified system. The system requires for the present settlement one additional rate of revenue in each kwin and the marking on the maps of land raised from second to first class. In the ordinary case in which the old settlement also used three soil-classes the matter would be more complicated, especially if as happens in one part of the Myaungmya District, there were four new soil-classes in one tract ; and it would be almost impossible where, as in Tharrawaddy, there are five. The system could not therefore be of universal application even if it applied in Myaungmya. But the change in the revenue demanded from each assessee is the

\* It may become possible again hereafter if the revision of soil-classification is found to require few changes.

net result of increases in the demand on some portions of his land and decreases in that on other portions, and any system which neglects these decreases must either sacrifice revenue without need or give insufficient relief in holdings which have no land reduced in class. The special rates could be arranged so that it would no longer be possible for the assessment upon any holding to be increased by more than fifty per cent., but it would still happen that some assesseses for whom some small and easily borne enhancement was appropriate would have false hopes engendered by a decrease of revenue for five years and would be disappointed then by an increase which had only been enlarged by the intermediate rates and would cause a real shock to the standard of living which the temporary reduction had induced. When kwins of several old assessment-tracts are included in one new assessment-tract the system involves a complex system of rates; as there would be no complexity in each kwin I do not feel this is an objection but I am aware that some do object to having a large number of sets of rates within the charge of one surveyor. The real objection to the system lies not in the difficulty of its application but in its entire failure to achieve the aim in view. It fails because it is a mechanical system applied to land and ignores entirely all considerations of flesh and blood.

422. A system was therefore devised to deal with the problem directly by holdings and automatically—that is, each assessee should receive without applying for it the benefit due on his holding, this term being understood to mean the sum of all the land he owned in one kwin. Intermediate assessments are substituted for assessments based upon intermediate rates. But there is no need to describe the system here because it happened that the Commissioner of Settlements and Land Records also attacked the problem independently and simultaneously, and the two solutions were found to differ only in one minor detail. I understand that it is proposed to apply this solution in the Akyab District in the 1919-20 season. It is only necessary here, so far as method is concerned, to plead that it shall be applied in the Myaungmya District too, and that no intermediate acre-rates shall be sanctioned. There is however one point for consideration. The people are just emerging from a painful experience of bad paddy markets and are still enduring high prices of the necessities they purchase—enhancements which could be borne at other times may be extremely onerous now. Further, the average revenue paid by an assessee is much higher than in 1901-02 when the scale of maximum enhancements was discussed, and increase of one-third of the present demand will be as onerous as an increase of one-half would have been then. I propose therefore that the maximum permissible increase of demand upon any one assessee shall be fixed for the present case at 33·3 per cent. in the area of revised settlement, and 66·6 per cent. in the area of the original settlement. The calculations required from the revenue surveyor for a 33·3 per cent. limit will be no more difficult than with a fifty per cent. limit—it is only a matter of dividing by three instead of by two; the limit of 66·6 per cent. involves an additional multiplication by two for each assessee in a kwin, but it would only apply in two surveyors' charges with about 940 holdings and would possibly involve only half that number of calculations. The reduced limits of enhancement would require more cases of rebate to be noted in the Revenue Office but this would not involve any additional labour. The difference in the yield of revenue in the five years would not be very large, and the importance of this consideration is easily exaggerated.

423. No question of intermediate rates arises in the case of H and Y main-kinds, nor in the assessment proposed for dhani and betel-gardens in general. The proposed rate of Rs. 3 for dhani in Tracts 28 and 29 may be treated as an intermediate rate if so desired because, as there is only one rate for dhani under both the old conditions and the new settlement, the difficulties of intermediate rates do not arise. But it would be better to notify the changing scale forthwith so as to avoid a claim that a limit of fifty per cent. increase had been established as a precedent as a basis of intermediate rates.

Intermediate rates in other than Paddy land.

424. In an area in which there are numerous water channels and a general level equal to that of a medium tide, it is natural that works of improvement of holdings should generally take the form of dams for keeping out the tides or for keeping in the water which would otherwise escape to the rivers. The preliminary notices issued in the middle of 1916 included the usual invitation to assesses who had incurred expense in making improvements to present applications for exemption from enhancement of their assessment, and each year in the crop-reaping season the Assistant Settlement Officers and myself frequently took pains to explain the matter to assemblages of the people. Not only the prescribed pre-settlement notices issued in 1916 but also the warning notices published in 1918 and 1919 explained the matter of these exemptions and invited applications, the obscurities of the prescribed notice being replaced in the later notices by plain language. Again the notice sent by the Assistant Settlement Officer four days before his inspection (as explained in Chapter VII) repeated the invitation. Assistant Settlement Officers were also directed to encourage such applications, and classifying inspectors were told to remind of the matter any persons who had effected expensive improvements which came to their notice when classifying. Comparatively few formal written applications were made. There were often informal discussions between cultivators and officers of the party, generally in public at the time of the final inspection of the classification and on the ground concerned, upon the prospect of such an application being successful, and it was customary to treat such as definite applications for exemption, disposing with all formalities of written applications, where there seemed any prospect of exemption being due but more often a summary conversational enquiry showed at once that the cost of improvement had already been recouped by the increase in production; or else the land in question still fell entirely into the class of lowest assessment. In either case no concession could be granted in accordance with the orders relating to this subject which are based upon the Governor-General's Resolution No. 1 of 1902 and have been understood to mean that Government had promised that, until the cost of work of improvement had been entirely repaid, with interest, by the extra profit yielded by the improved land over and above its yield before the improvement was made, Government would refrain from raising the land-revenue of that improved land on account of the improvement. The essence of the promise is a refraining. There might still be an increase of land-revenue on other grounds; and the promise, in Burma, means simply that for the period stated the land shall not be placed in a higher soil-class than it would have been if the improvement had not been made. The procedure of the party followed literally the terms of the promise in this form. The expenses incurred before and after the coming into force of the new settlement received separate treatment. Recurrent expenditure for maintaining and repairing, an improvement during the new settlement was regarded as a defect of the land being classified in the same way as any other quality which reduced its net productive value, the classification assigned being the same as for all other land of the same *net* productive value. Many cases in which the improvement consisted of a small piece of earthwork which had to be almost completely renewed every year were disposed of at once on this principle, the whole cost every year being treated as a special cost of cultivation. Land which in its improved condition was so fertile as to yield the same net produce as ordinary first-class land even after meeting the extra expenditure, would still be placed in the first class, while land of the same gross yield as ordinary land first or second class but costing an additional two or three rupees per acre for attention to bunds over and above the ordinary cost of cultivation would be placed in the second class whether an application for exemption from enhancement was made or not. Such a reduction of class was not regarded as an exemption at all. But when an application for exemption was made, either on the assessee's own initiative or at the suggestion of an officer of the party, a second hypothetical classification of the land was made on the supposition that the improvement had not been effected. If, as often happened, it was found that although the land had been improved no part had actually been placed in a higher class than it would have been without the improvement, it was considered that the conditional promise

of Government to refrain from enhancement had been completely observed without granting any special exemption. (The numerous cases already noted in which the improved land was still placed in the third class were specially simple cases of this class.) If however the actual classification of any portion was found to be higher than the hypothetical classification, an enquiry was made into the cost of the improvement and the profits derived from it, the number of years for which the hypothetical classification should be adopted instead of the higher actual classification being regarded as the number of equated annual payments equal to the extra harvest derived through the improvement (less the cost of its maintenance) which would be required to meet a debt equal to its cost with interest at twelve per cent. per annum. In a few cases in which the area of enhanced classification was a minute patch of less than an acre it was thought better to adopt the lower hypothetical classification for the whole period of the new settlement than to incur the extra labour of watching the correct assessment year by year on such a small piece. But a definite stand was taken against the view that the capital cost of payment for improvements can properly be met in general by placing the land in a low class. That method is unfair to the other assesseees who for any reason have not made such improvements and become eligible for the same treatment; and by failing to make known the attitude of Government on the matter it fails to encourage the making of improvements. Another rule, which follows directly from the Government's orders but is not generally appreciated, was that the classification under the current settlement is quite irrelevant to the matter of exemption. The only questions are; what is the classification of the basis of the new settlement, and what would it have been if the improvement had not been made? For instance, the lowest soil-class in paddy-land at last settlement was the second, but land which now fell into second class but would have been third class in the new settlement if the improvement had not been made was treated as having been raised in class and become entitled to exemption although its class-number was still the second as before. It frequently happened that land now placed in the second class was so regarded as enhanced in classification although under the current settlement it had been assessed as first class and was therefore descending a class. Classification under the current settlement had some influence at times upon the classification for the new settlement, and may therefore have affected the question of exemption indirectly in some case. But it seemed clear that excessive assessment under the current settlement, due in nearly every case to the erroneous assessment by surveyors of newly-cultivated land with which most applications for exemption were naturally connected should not operate to prevent an assessee from obtaining a concession to which, if he had escaped the excessive assessment, he would have been entitled.

425. Strictly the harvest of each year since the construction of the improvement should be valued at the price ruling in that year, and as the years in question would always be those towards the end of the current settlement the average of these prices would be distinctly above the price assumed for calculating assessments under the new settlement, though this is perhaps the proper price for valuing future harvests in calculating the number of years' exemption to be given. As being distinctly in favour of the applicants a price of one rupee per village basket was adopted all through. The simplification of the calculations so achieved was not of great importance in the applications which were examined in detail; but it was convenient for the rapid examination of cases in which the question was whether it was worth while to open an enquiry. In a considerable number of cases the assessee was unable to give any estimate of the increase in the harvest which resulted from the improvement but was able to state the increase in the rent he received. Rents have steadily increased in the last ten years even in unimproved land, but it was safe to assume that if the increase in rent had repaid the cost of improvement the increase of the harvest, if known, would be found to have been still greater.

426. Of the seventy-seven applications into which detailed enquiry was made, (1) thirteen were rejected because the land still fell entirely in the third class which will have a lower assessment than any other land, (2) fifteen were rejected because



even without the improvement the land would have been classified in the same way though it would have stood lower in the range of each class; (3) forty-five were rejected because the whole cost of the improvement had been fully recouped by the increased produce; (4) one case was a petition from several cultivators in the Hlaing-bôn area, and was rejected on the ground that as every holding in the assessment tract was entitled to special consideration on this account the proper procedure would be to take the expenses of development into consideration in fixing the assessment-rates and not to make special concessions to those individuals who were able to produce accounts; no other procedure in fact would have been practicable; (5) in three cases some exemption was granted. The applicants in these three cases were informed of the success of their application, but as in each case the exemption was due for twenty years or more it was decided to record only the reduced classification on the Settlement map and make no entries in the register of exemptions. The number of rejections in every class would have been very much greater if every case discussed were included. The seventy-seven treated were those in which the necessity for rejection was not immediately apparent. The causes of this result are not far to seek. Improvements tend to be few where a large proportion of the land is rented; not because landlords are careless but because with constantly changing tenants the best way of improving the land is seldom studied by the cultivators who alone can discover it. Again, only those improvements which promise an immediate large return are ever undertaken; the three successful applications represented undertakings which were really failures if judged by what had been expected of them. Since 1914 the general financial stringency has forbidden any large expenditure; so every undertaking would be at least six years old when the new settlement came into force and would therefore have had a good opportunity to repay its cost. Finally the nature of the country is such that a comparatively trifling cost expended in a dam for a stream does effect an immense improvement, and the stiff clay of the ordinary subsoil is peculiarly suited for the construction of such dams; they often last only for one season, and in a large proportion of the holding in some tracts some concession in classification was made on account of the extra expense of cultivation involved in them. But either because of this temporary character or because of the comparatively large return they earn they do not satisfy the conditions required for an exemption.

#### CHAPTER XVIII.—FINANCIAL SUMMARY AND COMPLETION OF THE PROPOSALS.

427. The total results of the proposals for all paddy-land and for all other land have already been given at the conclusions of Chapters XIV and XV respectively. The result of the proposals for all the land (excluding Tract 27) is a new revenue of Rs. 16,57,963 which is Rs. 75,929 or 4·8 per cent. in excess of the current demand of Rs. 15,82,034, the average rates of incidence per acre occupied being Rs. 3·44 and Rs. 3·30 for the proposals and the current demand respectively. The reduction due to intermediate assessments could only be calculated by calculating the assessment of every holding. There is no reduction due to exemption of improvements from enhanced assessments. The area of cultivation may be expected to increase by the extension into low *kanazo* lands and other low lands in the saucer-kwins which are raised by silt-deposits at a rather slower rate than in the past; perhaps 5,000 acres per annum, with a corresponding annual increase of revenue of about Rs. 6,250 may be expected for the next few years. The capitation-tax may also be expected to increase by about Rs. 3,150 per annum, making a total increase of Rs. 9,400 per annum.

428. A period of twenty years is proposed for the settlement area in general. But for the kwins of Tract 27 the new settlement (whether based on the classification effected during the present settlement or on a new classification after resurvey) the period should be so adjusted as to expire at the same time as the current settlement of Tracts 6 and 7. For Tracts 28 and 29 a period of ten years would be better than one of

twenty years. The rates of assessment now proposed for them are pitched at the same level, class for class, as those proposed for other southerly tracts, and it would not be equitable in regard to other tracts to enhance the rates on account of any increase in the price of paddy at Rangoon in the meantime. But much land which had to be placed in the second or third class in 1917 because it was in its initial stage of development or because of imperfections of the survey will then be fit for higher classification which would not only secure for Government an equitable increase of revenue but would avoid many of the difficulties which will arise at reclassification twenty years hence if the present classification is retained so long.

429. Referring to the first paragraph of Chapter V it will be seen that in the Treingyun Kwin which was transferred from the Ma-ubin to the Myaungmya District in 1918 the current rates may not be changed before the 1st July 1921, one year after the beginning of the new settlement in all other kwins. Special notice must be taken of this by notifying the new rates to take effect only from the above date in this kwin and to take effect for only nineteen years. The new rates could be applied forthwith in each plot where they are less than the old, but this would introduce immense complication for little purpose.

430. When Treingyun kwin was transferred to Myaungmya District Pegyun Kwin which is quite near was transferred to Ma-ubin District. No proposals are made for new rates in Pegyun Kwin although it lay within the settlement area at the beginning of the operations. But it is suggested that the continuation of the present settlement in that kwin after the 30th June 1920 requires notification. The authority for the current rates is Notification No. 454 dated the 18th September 1905, which sets a definite limitation of fifteen years to its own application. The discretionary power of the Revenue Officer under section 24 of the Land and Revenue Act might warrant the continuation of the rates after the expiry of that period if there were a Revenue Officer empowered under that section. The Local Government is hardly such a Revenue Officer and in any case it seems clear that the assesses are entitled to be informed of any decision on this matter and in particular of the period for which the current rates are extended. This period should be such as to put Pegyun Kwin on the same footing as the neighbouring kwins of Ma-ubin District in which the current settlement expires, it is believed, on the 30th June 1921.

### PART III.

#### CHAPTER XIX.—MISCELLANEOUS NOTES.

431. The Land Records Department in Myaungmya District, having the advantages of high rates of revenue and extensive holdings, is able to claim to cost a smaller proportion of the revenue than the corresponding department of any other district. But it cannot well claim to do the best work. The work of the surveyors shows clear evidence of a bad tradition from a period of defective supervision in the past, and it has not been possible for more recent officers to remove all the defects inherited. Extremely bad work in some of the original and early revision surveys was revealed in many parts and was shown with special clearness in the kwins resurveyed in 1919, in which it was very difficult and often impossible to correlate the features of the new map with the map hitherto in use. The errors in the latter have not only made it impossible for surveyors to assess accurately, they have had a serious psychological effect upon the district by encouraging similarly bad work. Considerable improvement has been effected and the new surveys of 1914 and subsequent years have assisted towards this result; but the department has still a good deal to learn about that accuracy which ought to be its characteristic feature. It is to be hoped that the new area statements prepared by the settlement party will facilitate further improvements which could hardly have been achieved with the area statements hitherto in use in so many of the kwins.

432 More care should be taken to see that surveyors have a correct schedule of the rates they have to apply ; and each surveyor should have a schedule for his own charge and not a copy of the Local Government's notification for the whole settlement area, which confuses him and leads to errors. Correct fallow-marking and assessment requires more supervision by the inspectors. The surveys of "kaing" land, too, are badly done and have not been checked in the past by the inspector ; as these surveys are confined to one charge there ought to be no difficulty in checking thoroughly. An important reform which is required is more careful writing of the names of persons in maps and registers. These are commonly written in a cursive script through which, by successive copyings, many errors creep in. Names of men and women are confused, a former tenant's wife's name is shown for the owner with *Nga* or *Maung* substituted perhaps for *Ma*,  $\alpha\delta$  becomes  $\alpha\delta$  and then  $\alpha\delta$  and then  $\beta$ . A careful copper-plate style should be insisted upon. The work can be reduced by combining in one holding all continuous stretches of land held by one person under the same tenure, ignoring the discontinuities caused by very small ditches (This would also, by reducing their number, facilitate the check of the revenue receipts in which numerous errors have been found.) Until the matter was pointed out by the settlement party the unnecessary subdivision of holdings was a marked feature of the maps ; some surveyors had attempted to apply orders relating only to the special Lease Area of the Hanthawaddy and Insein Districts, and, having complicated those orders according to fancy, were assigning separate holding-numbers even to parts of a holding which had been purchased on different occasions. Besides thus multiplying entries in assessment registers and therefore increasing errors this practice has increased all the work in connection with collections and has made many statistics relating to the size of holdings of doubtful value.

433. Surveyors' residences are a subject worthy of consideration. With a desire probably for ease of inspection of their offices many surveyors have been grouped in centres which are sometimes at an inconvenient distance from some of their charges. There are perhaps a few cases where a junction of steamer routes is more generally convenient for the cultivators of a surveyor's charge than any village within the charge, but a decision on this in any particular case should be taken with care. It is a good working rule that the revenue surveyor should generally live within his charge ; otherwise it is difficult to insist upon people making the reports regarding alienations of land which the law and statistical considerations require. Even worse however than bad location of surveyors' headquarters is the practice of some surveyors of keeping an almirah with a few records in their official headquarters and actually living in another place. The district officers previous to the last one or two years seem to have been extraordinarily blind or lax in this matter. The same lack of discipline was no doubt at the bottom of the order given by a surveyor at Thayettaw, and brought to notice through a statement made by cultivators to the Settlement Officer, that a modification of the field-bunds must not be made without the surveyor's previous sanction.

434. Surveyors should be forbidden to assess unculturable streams and ponds in a holding. It is not necessary to draw the very complex multiple-connected holding-boundaries which would result from excluding these from the holdings on the map ; it would be enough to write "water" or a word of similar import instead of the acreage against the survey number when summing the area of the holding in the Register of Fields. (In this district no corresponding mark need be put upon the map.) The practice of simplifying holding-marking by carrying holding-boundaries up to the banks of streams so as to include uncultivated land should however be forbidden, so that it will be more difficult for those errors to occur which lead in the manner noted in paragraph 42 of Chapter I to the evictions of samill hamlets.

435. These evictions take place at the hands of the subordinate judges who commonly decide such cases on the evidence of the revenue surveyor. The root of the evil is the belief that the Land Records maps and registers are a record of

title. The surveyor declares the land to be in the ownership of the person in whose name it is shown on his current map, though that name may be the result of a clerical error; the Courts give so much weight to such evidence that they ignore all evidence of disinterested local residents and the surveyor practically judges the case. Two or three cases of considerable hamlets being so treated were brought to the notice of the Deputy Commissioner who also discovered instances for himself; there are other cases which do not reach Court because hope of successful resistance to the owner of the paddy land is so weak. I am well aware that there are two schools of thought on this matter, but I have no doubt myself that it is desirable to take the view that Land Records registers are made for the purposes of assessment and statistics, and have only such weight in proving title as those purposes confer when the facility of the accumulation of copying errors in them is recognised.

436. The principle comes to the fore again in the record of the boundaries of the holdings of absentee landlords. The Land Records Manual (section 441) requires the written agreement of the *cultivator* of the adjacent holding before the holding-boundary can be modified. In the Myaungmya District it has been assumed that *cultivator* means the "owner,"—that is the person in highest possession,—and where this person lives at a distance errors in the map are allowed to persist in spite of the agreement of the tenants and other local persons as to the boundary observed in the cultivation every year.

437. The present Superintendent of Land Records and other officers have generally ascribed the defects of the Land Records work of the district to the inefficiency of surveyors, but three years of settlement work in the district have led me to see that the failure of the department has been not at the base but at the apex. The work and discipline of the surveyors could never have deteriorated so much otherwise. The ultimate cause may be expressed in the one word *Mud*. There has been a dislike for wading about in tidal and flooded kwins and clambering in *kanaso* jungle, and for work with the extreme discomforts of hordes of mosquitoes and other insects at night. Moreover one cannot move rapidly across country a foot deep in water in its higher levels and up to the waist in others, and again a great deal of time is consumed in retracing steps because of the network of streams with shelving margins of mud and mangrove jungle which make swimming impossible. The settlement party of course found the same difficulties, and the extension of the time required for its work arose out of these conditions. Thus efficient inspection of the surveyors' work has been difficult and has become more difficult as cultivation has extended.

438. In the last few years the district officers have striven to effect an improvement, and their efforts have—as has already been mentioned—met with some success. But a satisfactory Land Records Department in the Myaungmya District can only be obtained by strengthening the supervising staff. The weakness of surveyors and inspectors will only be cured by this method. An Assistant Superintendent of Land Records has been employed since the middle of 1918, but that is not sufficient. It would be better to appoint one to each subdivision, Myaungmya and Wakèma, each being responsible to the Superintendent for the mechanical routine of assessments and statistics throughout his charge and to leave the Superintendent to control the Assistants and deal with other work. The Assistants should deal with field work more fully and carefully than usual because the efficiency of all revenue officers in the work of Land Records inspections is less than in less muddy districts. The Assistant in Myaungmya Subdivision should however have his own office away from the Superintendent's, or he will inevitably become a headquarters assistant instead of standing, as he must for efficiency, on the same footing as his *confère* at Wakèma. There has been a proposal to provide the Superintendent with a motor-launch, and this ought to be done; but the launch while small enough to travel in most creeks should be large enough to accommodate him at night occasionally and to travel without extreme discomfort on the larger rivers if its full value is to be realised. The Assistants would be better without launches. As the Land Records work of the district costs only 1'14 annas per occupied acre, the cost

of these reforms could be afforded, full value too would be obtained for it. Probably the district would continue to cost least in the province in proportion to its revenue collection and probably in conjunction with more equitable assessments, the additional officers would have an effect—none the less real though not patent—upon the crime record.

439 An instance of the failure of the department which is a clear index to the seat of the trouble is the index-map of the kwins of the district with its complementary list of kwins. When the settlement operations began the index-map and list in use were full of errors. Navigable rivers were omitted, small ditches were shown as broad streams—so that one wasted time trying to reach a kwin by a route found presently to be impossible. The kwins shown on the index-map bore no resemblance in many parts to the kwins as surveyed in the 16-inch maps; in other places the numbering was different. The names in the list did not agree with the names on the 16-inch map, and in the latter were often different in English and in Burmese—a sure indication of the location of the fault. A piece of land was often included in two kwins and assessed twice, in other cases plots near the boundary of two kwins were omitted from both. The names of adjacent kwins around the margin of the 16-inch maps were also incorrect in numerous cases—probably as a result of the bad indexes—and inspecting officers who attempted to see two kwins on one day thus summoned the wrong cultivators for the second kwin if they did not take care to piece maps together beforehand to verify the relative situation. There were duplications of kwins with the same number, there were kwins in the list which did not exist, there were kwins which failed to appear on the map or in the list, or even, incredible as it seems, in either. Surveyors seem to have sent in assessment-rolls but there cannot have been any effective check if such matters as these escaped notice. An officer going to inspect a kwin was not safe unless he took a large number of maps with him so that he could select the one which bore most resemblance to the ground which he inspected. The kwin bearing the name of the village on the river bank would be in the middle of the saucer, the high kwin on the bank would probably be named on the 16-inch map after some marsh miles away and have a different name again in the list. Or, again, a village named A would be found in the kwin named B and the village named B in kwin A. Naturally it happened that the cultivators of wrong kwin were often summoned. The surveyors, in the midst of this confusion, gave their own names and numbers to some of the kwins, and naturally omitted to make the correction on some maps or in some registers. Much more could be said, but the above is incredible enough without addition. Many valuable hours of the settlement party were lost during the field work through the waste of time due to these bad indexes, and there was again increased difficulty and waste of time in the recess seasons owing to the need to keep many pieces of work in an unfinished condition for as long even as two years because of the danger involved in the faulty indexes. It would have been very dangerous to propose rates for any kwin which was described either by number or by name under the conditions of 1916, and even the principle which is about to be described would have led to difficulties.

440. Throughout the operations the settlement party made a careful examination of the maps it used and reported the errors to the Superintendent of Land Records, who in 1918 took up the task of preparing a correct index-map and list. That task was not completed when the maps of this report were drawn—although their preparation was postponed on this account until it was inconveniently late—and there may have been subsequent changes in the map used by the district officers. It is presumed that these subsequent changes will be few, and it is laid down that the maps of this report are to be read topographically, so that the tracting decided by the party will be retained correctly and assessments therefore correctly made, in spite of any interchanges of kwin numbers. For any case in which the number of a kwin according to the index-map finally adopted by the Deputy Commissioner differs from the number shown for the kwin occupying the same position on the maps of this report care must be taken that the land indicated by these maps is assessed according to the rates of the tract in which it is shown on them and all

lists connected with this report corrected accordingly. It will be necessary amongst other things to make a comparison, kwin by kwin, of the maps of this report and the finally adopted index-map of the district before notifying Government's orders for the revised settlement.

441. Like their *confrères* in many other districts of Lower Burma the surveyors of the district are ignorant of the meaning of "main-kind." They have sometimes, for instance, assessed land at the rate for betel-gardens continuously for years after the betel-garden was destroyed and the land should have reverted to the ordinary rate of garden or paddy-land. Superintendents have often caused this by having the symbol of a betel-garden printed on newly surveyed maps in the positions which happened to be occupied by betel-gardens at the time of survey. Crop-marks in gardens have indeed been so confused with main-kind symbols, that when the soil-class lines were printed on the maps a few years ago the crop mark G was printed with them. It is particularly to be noted that in the present settlement the main-kind of every plot has been shown on the settlement maps. It was used for garden land to prevent confusion with the crop-symbol. There should be no attempt to change the settlement party's main-kind,—e.g. in the case of small house-sites in paddy holdings or in the case of low flooded lands used for miscellaneous cultivations—because the crop happens to seem incongruous. Surveyors should be carefully instructed about the difference between main-kind and crop-symbols before the new settlement is applied. The only crop-rates proposed are those for betel and dhani, these should apply to those crops in whatever main-kind they fall and care should be taken in future to avoid printing on the maps any symbol for either of them.

442. It is desirable that the meanings of the terms *circle* and *charge* should be defined. Originally a circle was the domain of a *taik-thagy* and then it came to be the charge of a surveyor and is so used in notifications. The Land Records Department uses the word "circle" for the charge of an inspector, including about ten of the units described as circles by Government. This is apt to lead to confusion in such cases as the Financial Commissioner's notification with regard to fallow-rates in which areas are defined by reference to (surveyors') circles. A new name should be prescribed for the area supervised by an inspector.

443. Throughout the period of the operations Mr. E. L. George was the Superintendent of Land Records, and I am greatly indebted to him for his cordial co-operation on many occasions, and particularly for his exertions in connection with the resurveys of 1919 and the prompt preparation of the corresponding new area statements. The surveyors and inspectors also worked hard to assist in the rectification of their area statements, and in the first year of the operations when part of the settlement party was still engaged in finishing the Prome Settlement they gave as noted in Chapter XI some help in the crop-reaping work. The Assistant Superintendent Maung Ba Nyun gave good help in preparing revised area statements for the surveyors in 1918, but he unfortunately died in the middle of the work which had then to be completed without his assistance. Maung Ba who succeeded him checked practically all these area statements for the area treated in 1919. Here also I desire to add a note of my indebtedness to Mr. J. S. Furnivall, I.C.S., who was the Deputy Commissioner of Myaungmya during the greater part of the operations and so helped with discussion and criticism on many occasions that I experienced a great disappointment when he was transferred in 1919 before I had begun to write this report.

444. The cost of the settlement operations for the period of three years occupied may be placed at Rs. 2,15,578, allowing for the expense debitable to the Prome Settlement in the first month when the party was employed in both the Prome and the Myaungmya

Districts and excluding the cost of the launch and houseboat supplied by the Marine Department for about six months each year, but including the cost of the Settlement Officer and one clerk in November 1919 while the report was being completed. This total gives an average cost of Rs. 177 per square mile, of the settlement area and 71 annas per acre classified. The estimated cost was Rs. 1,58,356. But as noted in Chapter VI, the period of two years was quite insufficient, and indeed that should have been clear from the beginning. The settlement of Tracts 1 to 7 covered 232,000 acres and occupied two years, one-third of the party being engaged on other work in one recess season. In the present settlement 484,000 acres, more than double that area, have been classified, and holding-registers have been compiled in 18,315 acres of this area in addition. In a great part of the former area local communications are easy: there is freedom to travel direct by land and ponies are used by the residents. In the area of the present settlement there was the greatest difficulty in moving about amongst the tangle of creeks, direct journeys by land are rarely possible and circuitous water-routes must be used, in classifying a kwin frequent retracing of steps was characteristic, and the crossing of a stream was a matter so familiar as to deserve no attention though it always involved considerable delay. It was unreasonable therefore to set down two years for the work. The estimated cost was Rs. 79,178 per annum and in three years this would make Rs. 2,37,534 or Rs. 196 per square mile.

445. The objections to changing a Settlement Officer during a particular course of settlement operations are so strong that the Officers and Men of the Party officer who begins the operations should always complete them if he survives, and I have accordingly held charge of the party throughout its work in Myaungmya. The Great War made its influence felt as it led to the Settlement Officer being called away for two months for military training in 1917 and thereby so retarded the work that very great endeavours were necessary to make up the leeway in the next years. The War also forbade the appointment of a European Assistant Settlement Officer until September 1919, when the work was almost finished, and by this I not only lost valuable assistance in the field and useful discussion of ideas arising in the course of the work, but incurred also additional labour in guiding and checking the work of the Burman members of the party in spite of the loyal endeavours of most of these to render the best of service. I fear, however, that many defects in this report will bear witness to the stress which I have suffered through being deprived of European assistance. Major Batten, I.A., the Assistant Settlement Officer, who arrived less than two months before the end of the work with a view to taking the party on to the Tavoy Settlement, gave as much help as was then possible under the conditions, I am deeply indebted to him for relief from much harassing work at a trying time. Maung Po Shein as Assistant Settlement Officer gave generous and valuable help from the beginning to the end. Maung Shwe Hmaw worked hard through the first year and the second recess, but he was called away in the second field-season and for the third year to undertake other work in Upper Burma. Maung Kya Zan as usual gave himself unsparingly all through, except in the second recess when he was temporarily transferred to other work. Maung Tun Hla's heart was not in settlement work away from his native Arakan and he did not achieve quite so much as the foregoing in the field. But he worked extremely well in each recess and perhaps deserves more praise for the field work which he found uncongenial than a grudging taskmaster, himself overpressed, sometimes felt inclined to give. During an illness of Maung Tun Hla in 1919 the Senior Inspector, Maung Po Mya, officiated as Assistant Settlement Officer and worked hard and satisfactorily; and he continued to do extremely good work later when he was appointed to the fourth and extra post of Assistant Settlement Officer which was created as a temporary measure for the last six months of the work. The Head Clerk, Maung Ba Sein, continued to give as always most excellent service in all directions. The services of the subordinate members of the party have been noted in the office records. I regret to report that one clerk was guilty of extortion from the cultivators; he managed to escape conviction by the Criminal Court but he was dismissed from Government service.