



12093A REPORT

ON

THE SETTLEMENT OPERATIONS

IN THE

KYAIKTO SUBDIVISION,

SEASON 1896-97.

Accompanied by Maps.

(26)



RANGOON:

PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRINTING, BURMA

1898.

8 JAN 2010



G.P.

336.222

(591)

B927th

TABLE OF CONTENTS.

REPORT ON THE SETTLEMENT OPERATIONS IN THE KYAIKTO SUB-DIVISION, SEASON 1896-97.

CHAPTER I.

General Description of the country.

	Para.	Page.
Physical features ...	1	1
Area ...	2	ib.
Health and climate ...	3	2
Rainfall ...	4	ib.
Races of the people ...	5	ib.
Occupation of the people ...	6	3
Salt ...	7	5
Varieties of paddy ...	8	6
Mode of agriculture ...	9	ib.
Manuring ...	10	ib.
Labour ...	11	ib.
Inroads of the sea ...	12	7
Canal between Kyaikto and Kawkadut ...	13	ib.
Other calamities ...	14	ib.
Drainage canals ...	15	8
Cattle statistics—mortality ...	16	9
Number of cattle ...	17	ib.
Hire of cattle ...	18	ib.
Price of cattle ...	19	ib.
Grazing ...	20	10
Grazing-grounds ...	21	ib.
Reserving of grazing-grounds ...	22	ib.
Bilin township ...	23	11
Other recommendations ...	24	12
Fuel ...	25	ib.
Proposed reserves ...	26	ib.
Fisheries ...	27	13
Communications—roads ...	28	14
Communications—water ...	29	ib.
Principal towns and villages ...	30	15
Towns and villages of more than 1,000 inhabitants ...	31	17
Export markets ...	32	ib.
Cultivation of Madras sugar-cane ...	33	ib.
Encouragement of cane cultivation ...	34	ib.
Area under cultivation ...	35	18
Soils ...	36	ib.
Cultivation ...	37	ib.
Extent to which each holding is cultivated ...	38	19
Manufacture of jaggery ...	39	ib.
Fuel used ...	40	20
Sugar refining ...	41	ib.
Disposal of jaggery ...	42	ib.
Prices ...	43	ib.
Betelnut, ...	44	21
Sale of fruit ...	45	ib.
Profits ...	46	ib.
Bye-products ...	47	ib.
Betel-vine ...	48	ib.
Oranges ...	49	22
Other gardens ...	50	ib.
Dahnyin cultivation ...	51	ib.
Miscellaneous cultivation ...	52	ib.
Island cultivation, Sittang river ...	53	23
Cultivation of <i>kyaukkaung</i> cane ...	54	ib.
Cane profits ...	ib.	ib.
Cocoanut trees ...	55	ib.

CHAPTER II.

General Condition of the People.

Density of the population ...	56	23
Standard of living ...	57	24
Cost of living ...	58	ib.
Cost of cultivation ...	59	ib.

Indebtedness of cultivators.

Paddy cultivators ...	60	25
Sugar-cane cultivators ...	61	27
Area of cultivation and waste ...	62	ib.

	Para.	Page
Average area of holdings	63	29
Pressure on the soil	64	ib.
Waste-land grants	65	ib.
Tenants	66	30
Reasons for letting	67	32
Sugarcane plantation tenants	ib.	ib.

CHAPTER III.

Past Assessments and Fiscal History.

Previous assessments	68	32
Assessment rates	69	33
Former and present rates	70	ib.
Result of holding survey	71	34
Amount of past and expiring assessments	72	ib.
Facility or difficulty of collection	73	ib.
Former and present market value of land	74	35
Garden sales	75	38
Cane land sales and mortgages	76	ib.
Reasons for selling and mortgaging	77	41

CHAPTER IV.

Progress of the Country since the last Revision of Rates.

Area under cultivation	78	41
Fallow area	79	ib.
Comparison of assessed area	80	42
Increase of the population	81	44
Area held under the various kinds of tenure and the number of tenure-holders of each class	82	46
Grants	83	47
Method of obtaining grants	84	ib.
Case of dispute as to occupancy of certain lands	85	48
Thugyis and surveyors	86	ib.
Copies of receipts	ib.	ib.
Former and present rates of productiveness per acre	87	ib.
Past and present average holdings	88	49
Former and present prices of produce	89	ib.

CHAPTER V.

Proposed Assessment Rates.

Assessment tracts	90	49
Soil classes	91	51
Average area of holdings in each tract	92	ib.
Gross productiveness per acre assumed for each class of soil	93	ib.
Local value per 100 standard baskets adopted for each tract	94	52
Cost of living and cultivation per acre	95	53
Rates, theoretical and proposed, for paddy-land	96	ib.
Comparison of proposed rates with tenant rents and sale rate	97	ib.
Present <i>kwin</i> rates	98	54
Comparison with the rates of revised assessment in adjoining circles	99	55
Garden assessment tract	100	ib.
Miscellaneous cultivation	ib.	ib.

Cane Cultivation.

Classification of the soils	101	57
Area of the <i>ta</i>	102	ib.
Cost of cultivation	103	ib.
Outturn per acre	104	58
Cost of manufacture	105	ib.
Living expenses	106	ib.
Prices obtained	107	59
Present rates	108	ib.
Tracts	109	ib.
Rates proposed	110	ib.
Solitary fruit-tree and <i>taungya</i> tax	111	60
Comparison of present and proposed demand	112	ib.
Duration of the settlement	113	62
Settlement Officers and establishment	114	ib.
Delay in submission of report	115	ib.

APPENDICES.

	Page.
Statement I	iii.
Statement No. II.—Cattle Statistics	iv.
Statement No. III.—Fishery	v.
Statement No. IV-A.—General Agricultural Statistics (Paddy)	vi.
Statement No. IV-B.—General Agricultural Statistics	viii.
Statement No. IV-C.—Abstract of General Agricultural Statistics by Tracts	x
Statement No. V-A.—Abstract of tenant statistics	xi
Statement No. V-B.—Tenants	xiii
Statement No. VI-A.—Revenue assessed, including cess (Thugyis' rolls) in the Thaton district	xv

CONTENTS.

111.

	Page.
Statement No. VI-B.—Revenue assessed for paddy-land (Thugyis' rolls) in the Thatôn district	xv.
Statement No. VI-C.—Revenue assessed for gardens and miscellaneous cultivation (Thugyis' rolls) in the Thatôn district	ib.
Statement No. VI-D.—Revenue assessed for sugar-cane cultivation (Thugyis' rolls) in the Thatôn district	xvi.
Statement No. VII.—Coercive processes issued (average of four years) in Kyaikto subdivision	xvii.
Statement No. VIII.—Remissions granted (average of four years) in Kyaikto subdivision	ib.
Statement No. IX-A.—Crop statistics	xviii.
Statement No. IX-B.—Abstract of crop measurement statistics by circles	xxxvi.
Statement No. IX-C.—Abstract of crop measurement statistics by tracts	ib.
Statement No. IX-D.—Crop statistics	xxxvii.
Statement No. X-A.—Area under cultivation (Thugyis' rolls) in the Thatôn district	xxxviii.
Statement No. X-B.—Area under paddy cultivation (Thugyis' rolls) in the Thatôn district	xxxix.
Statement No. X-C.—Area of garden and miscellaneous cultivation (Thugyis' rolls) in the Thatôn district	xl.
Statement No. X-D.—Area of sugar-cane cultivation (Thugyis' rolls) in the Thatôn district	xli.
Statement No. X-E.—Area under fallow land (Thugyis' rolls) in the Thatôn district	xlii.
Statement No. X-F.—Area of fallow cane land (Thugyis' rolls) in the Thatôn district	xliii.
Statement No. XI-A.—Comparative statement of the local prices of paddy for four years from 1893-94 to 1896-97	xliv.
Statement No. XI-B.—Price of fruits, &c., at Kyaikto during the year 1896-97	xlvi.
Statement No. XII-A.—Land-sale in four years (Paddy)	xlvi.
Statement No. XII-B.—Land-sale in four years (Gardens)	ib.
Statement No. XII-C.—Land-sale in four years	xlix.
Statement No. XII-D.—Land-sale in four years	ib.
Statement No. XIII-A.—Soil classification, proposed rates, and present and proposed demand for each <i>kwin</i> (Paddy cultivation)	1.
Statement No. XIII-B.—Classification, proposed rates, and present and proposed demand for each <i>kwin</i> (Garden cultivation)	lxvi.
Statement No. XIII-C.—Proposed rates and present and proposed demand for each <i>kwin</i> (Miscellaneous cultivation)	lxxviii.
Statement No. XIII-D.—Soil classification, proposed rates, and present and proposed demand for each <i>kwin</i> (Sugar-cane cultivation)	lxxx.
Statement No. XIV-A.—Soil classification, proposed rates, and present and proposed demand for each tract (Paddy cultivation)	lxxxii.
Statement No. XIV-B.—Classification, proposed rates, and proposed demand for each tract (Garden cultivation)	ib.
Statement No. XIV-D.—Classification, proposed rates, and demand for each tract (Sugar-cane cultivation)	lxxxiv.
Statement No. XIV-C.—Classification, proposed rates, and proposed demand for each tract (Miscellaneous cultivation)	ib.
Statement No. XV.—Financial results	lxxxv.
Statement No. II.—Statement of holdings of 100 acres and over 100 acres in area	lxxxvi.

REPORT

ON

THE SETTLEMENT OPERATIONS

IN THE

KYAIKTO SUBDIVISION

SEASON 1896-97

CHAPTER I.

GENERAL DESCRIPTION OF THE COUNTRY.

THE Kyaikto subdivision of the Thatôn district is bounded on the north by high hills and by the Sittang river. This river, which from a short distance below Myitcho runs almost due south, on reaching Wimpadaw makes a great bend, and, after running for a few miles in a north-westerly direction, turns successively to the south, south-west and east before it empties itself into the Gulf of Martaban, by which the subdivision is bounded on the west and partly on the south. On the east are ranges of hills separating the Salween and Thatôn districts.

Besides the Sittang, there are several other rivers running generally in a southerly direction. The Bilin river, which rises in the Papun hills, separates Bilin and Zôkthôk circles from Thatôn township. The Thebyu rises near Kyaiktiyo, and, after a tortuous course, empties itself into the Gulf of Martaban. A new mouth to this river has lately formed. The Kadat *chaung*, on the banks of which Kyaikto town is built, has altered its course greatly in the last few years; its lower reaches have entirely disappeared in the sea.

A mile or two to the south-east of Kyaikto town is a range of hills, on one of which the famed Kelatha pagoda stands. All the country to the north-west, west and south of these hills is one vast paddy-plain, for the most part alluvial, with villages dotted here and there; while directly to the north and east, except for the cane cultivation on the banks of the river, there are either unculturable jungle tracts or other hills where garden and *taungya* cultivation is carried on.

2. The area of so much of the subdivision as has been surveyed and brought under settlement this year is 610.54 square miles, of which 36.30 per cent. is under cultivation.

Area.

The gross area, with the area cultivated, is given in the table below circle by circle:—

District.	Township.	Circle.	Serial No.	Cultivated area.	Gross area.	Square miles.	Percentage of cultivated to gross area—columns 5 and 6.	Remarks.
1	2	3	4	5	6	7	8	9
				Acres.	Acres.		Acres.	
Thatôn.	Bilin.	Bilin ...	1	14,118'51	39,124'23	61'13	36'08	
		Zôkthôk ...	2	27,292'15	37,726'07	58'95	72'34	
		Kawkhame ...	3	29,031'21	51,575'62	80'59	56'28	
		Kinywa ...	4	14,643'09	28,863'58	45'10	50'73	
		Yinôn ...	5	2,813'17	45,966'65	71'82	6'12	
		Total ...	...	87,898'13	203,256'15	317'59	43'24	
	Kyaikto.	Taikkala ...	6	7,618'78	14,001'50	21'88	54'41	
		Shwehle ...	7	22,513'45	49,412'39	77'20	45'56	
		Sittang ...	8	13,465'62	47,620'18	74'40	28'27	
		Kyaikto ...	9	8,133'01	31,619'14	49'40	25'72	
		Kyônpagu ...	10	2,227'01	44,845'87	70'07	4'96	
		Total ...	...	53,957'87	187,499'08	292'95	28'77	
		GRAND TOTAL ...	...	141,856'00	390,755'23	610'54	36'30	

3. Although the climate of the subdivision cannot be said to be unhealthy, the water-supply in the majority of villages is most wretched and much disease results therefrom. The Health and climate. paddy-plains are intersected by salt-water creeks and the ground is saturated with salt. Tanks are dug in which the rain-water collects, and the people make this last till about February. But as the water in the tanks gets shallower it also becomes dirty and foul, and much that is then drunk is absolutely unfit for human consumption. In some villages the inhabitants obtain their water by carting it out daily from places where there is a better supply. The Wimpadaw villagers cart all their water after the tanks are dry from Mayangyaung, some 4 miles distant. But notwithstanding these precautions cholera appears in many places with frequency. Wells would be useless in most places, but aid might certainly be given from the District Cess Fund to construct large tanks in the villages on the paddy-plain. Now that the Wimpadaw lock has been abandoned, the people are anxious that it may be handed over to them; they propose to bund up the openings and store a larger supply of rain-water than they have hitherto been able to collect.

4. Statement No. I of Appendix A shows the rainfall for the last two years as registered in Kyaikto. The fall is always sufficient. Probably the amount in the south of the subdivision, *i.e.*, in Kawkhame, Zôkthôk and Bilin circles, is heavier than near Kyaikto. These circles are nearer to Thatôn, where in 1895 the rainfall was just double that in Kyaikto.

5. According to the census report of 1891 the population of the Kyaikto subdivision is distributed racially as follows:—

Races of the people.

	Population.
Burmans ...	31,154
Talaings ...	21,304
Karens ...	20,435
Shans ...	7,658
Natives of India ...	1,652
Chinese ...	472
Others ...	81

Burmans.—Burmans are to be met everywhere, but chiefly in Sittang, Kyaikto and Bilin circles, where they collect in or near the larger towns.

Talaings.—The Talaings, or those who still call themselves Talaings, live chiefly in Zôkthôk, Kawkhame and Shwehle circles. Their language is dying out; the elders still speak it, but most of the younger people talk Burmese only, and call themselves Talaings or Burmans as the fancy moves them. Nearly 5,000 Burmans (according to the tables) live in Kinywa circle, but many of these are, I think, really Talaings.

Karens.—Most of the Karens live in the hilly tracts of Bilin, Yinôn, Kyaikto and Kyônpagu circles. In Kinywa there are also a number, some having gardens on the hillsides, while others have taken to planting paddy since the country became drained. Of late years a few have taken up new land in Zôkthôk circle; some of these men live there all the year round, but the majority move there for the field season from Kinywa circle.

Shans and Taungthus.—I do not think that the number of Shans in the subdivision is so large as is given above. Taungthus have been entirely omitted from the census tables. On examining these tables I found that the parent tongue of the majority of people in Nyaungpalin (Bilin circle) is given as Shan. This village is almost entirely populated by Taungthus, and many are also met in Kinywa circle. Unlike the Talaing language, the Taungthu is still spoken in the houses; the children all understand it. Shans are found engaged in sugarcane cultivation in Bilin circle, and also work land in Yinôn and Kinywa circles; many of them are traders in Kyaikto town.

Chinese and Natives of India.—These are found scattered in twos and threes all through the country—traders, pedlars and money-lenders for the most part—but in the north there are a number of Chittagonian boatmen plying for hire on the canals and river.

I omit any lengthy accounts of the manners and customs of each race as they have been fully described in former reports.

6. According to the thugyi's capitation-rolls, a summary of which is inserted

Occupation of the people.	below, nearly 70 per cent. of the population are engaged in agriculture. Of the balance some are traders, others are boat-owners or boat-men, sawyers, fishermen, and the like. The only industry of any importance besides agriculture is the manufacture of salt, mainly in Kawkhame and Shwehle circles. At one time a large pottery business was carried on in Wimpadaw, the pots being used for salt-boiling; but since iron cauldrons have superseded earthen pots, this industry has practically died out.
---------------------------	---

Serial No.	Name of town-ship.	Circle.	AGRICULTURISTS.				NON-AGRICULTURISTS.									Grand total persons.	PERCENTAGE.			Remarks.
			Paddy cultivators.	Orchard and garden:	Vegetable and <i>tann-gya</i> .	Total persons.	Doctors.	Stall-keepers.	Blacksmiths.	Sculptors and car-penters.	Traders.	Petty traders.	Gold and silversmiths.				Agriculturists.	Non-agriculturists.	Coolies and others.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Bilin	Bilin ...	612	64	1,402	2,078	2	...	5	1	40	144	4	196	320	2,594	80'11	7'55	12'34	Occupation not given and not included in grand total; nearly all agriculturists.
2		Zokthök ...	1,040	...	...	1,040	1	...	...	...	30	27	...	58	294	1,392	74'71	4'17	21'12
3		Kawkhame ...	2,087	...	...	2,087	1	...	...	...	3	43	...	47	488	2,622	79'60	1'79	18'61
4		Kinywa ...	1,157	504	...	1,661	8	...	6	...	...	129	7	150	580	2,391	69'47	6'27	24'26
5		Yinôn ...	146	359	1,008	1,513	...	...	...	...	24	...	...	24	215	1,752	86'36	1'37	12'27
		Total	5,042	927	2,410	8,379	12	...	11	1	97	343	11	475	1,897	10,751	77'94	4'42	17'61	
6	Kyaikto...	Taikkala ...	488	...	...	488	...	2	...	...	2	...	1	5	4	497	98'19	1'01	'80
7		Shwehle ...	841	...	...	841	...	3	...	...	...	...	2	5	27	873	96'34	'57	3'09
8		Sittang ...	386	4	79	469	...	...	6	4	63	233	5	311	637	1,417	33'10	21'95	44'95
9		Kyaikto ...	513	24	487	1,024	1	10	5	...	65	165	31	277	1,237	2,538	40'35	10'91	48'74	
10		Kyônpagu ...	...	...	...	...	...	...	...	...	...	...	...	...	...	1,319	...	...	...
		Total	2,228	28	566	2,822	1	15	11	4	130	398	39	598	1,905	5,325	53'00	11'23	35'77	
		GRAND TOTAL	7,270	955	2,976	11,201	13	15	22	5	227	741	50	1,073	3,802	16,076	69'68	6'67	23'65	

7. The manufacture of salt from saline earth was described by Mr. Pennell in the report on the Amherst district for 1891-92.

Salt.

The method of manufacture in Kyaikto is exactly similar. The salt-boilers are almost exclusively Burmans and Talaings, but one Eurasian has lately started in Shwehle circle. The people mostly live in the villages contiguous to the salt-fields; others, however, come from some distance and reside in a *tè* close to their furnaces for the season. Salt is not manufactured by the same people year after year. It is rather a means of making money to which those who have failed in other branches resort for a season or two and then make a fresh start in their original occupation.

Fuel.—The fuel used is cut during the rains and is generally floated down stream to some village near the salt works, where it is stored until the dry weather. In Bilin township most of the wood is cut in the forests bordering the upper reaches of the Thebyu *chaung* and then floated down, but some is obtained from the jungles near Kawkadut and Zòkthòk. In the Kyaikto township most of the fuel is cut in the jungle behind Kyaikkatha on the borders of Shwehle and Kyôn-pagu circles, where there is tree jungle of large extent. Some salt-boilers in Shwehle have been paying a forest tax of Rs. 2-8-0 per 1,000 billets, but there seems to have been no authority for its collection. Most of the manufacturers cut their own fuel; those who do not, pay Re. 1 to Rs. 1-8-0 per cart-load.

Pans.—The iron pans or cauldrons generally cost Rs. 5 each. The Zòkthòk thugyi appears to be the supplier of pans to all the workers in Bilin township and to many in Kyaikto; others are obtained from traders in Kyaikkatha and Pegu. Each pan holds 10 gallons, measures 4 feet by 3 feet, and is from 2½ to 3 inches in depth. In Bilin township the average number of pans used by each manufacturer is two; in Kyaikto the number varies between four and seven. There are generally four boilings by day and four by night, a few manufacturers working only by day. The contents of one pan, soon after the salt was made, were found to weigh 6.50 viss.

A large number of people were examined as to the profits made, and I give below a statement of the expenses and income of a manufacturer I examined near Angwi village in Shwehle circle. The other cases examined gave very similar results—

	Rs.	Rs.	Rs.
Cost of <i>tè</i>	25		
Well	10		
License fee (five cauldrons)	150		
Wood tax	5		
Five cauldrons cost Rs. 4 each	20		
		210	
Wages of three coolies at Rs. 13 each for 4½ months, say		175	
Hire of two bullocks for the season at 600 viss of salt, say Rs. 55 per 1,000 viss		33	
			418
Outturn from five cauldrons working day and night, stated to be 150 viss per 24 hours, for 4 months at Rs. 55 per 1,000 viss			990
Profit per pan			114.6

The outturn in the above statement is taken as the manufacturer gave it. I should say that it is nearer 200 viss a day, and Rs. 60 per 1,000 viss is, I believe, a truer average price.

This man, besides the bullock hired, has two yokes of his own and two carts. They are all used to collect the salt earth.

The coolies start work at least a fortnight before manufacture can commence. The season only lasts about four months as salt cannot be manufactured during the rains. If the cost of firewood, which is cut in the off-season, be deducted at the current rates per cart-load, the profit per pan would be about Rs. 80.

8. The country under settlement is entirely a *kaukgyi*-growing tract. In the south of Kawkhame and Zòkthòk circles, the *lawthut* and *byat* varieties of *kaukgyi* are grown as the cultivators state that the Moulmein buyers prefer them to any other kind of paddy. *Yahaing* (which falls more properly under the head of *kauklat*) is grown in one

or two *kwins* which are liable to salt-water floods early in the dry season. This crop is reaped about a month earlier than *lawthut* or *byat*. North of the *lawthut* country, *thidat* and *ngasein* are planted together and known as *yawgyaw*. Further north again, and also in Bilin circle, *thidat*, *ngaseinbyaw*, *ngaseingyan*, *shwewa* and one or two other varieties are grown, sometimes separately, but often one or two sorts are planted together. *Kaukhnyin*, which is practically only grown for home consumption, is met with everywhere, a field or two in most holdings being planted with this crop.

Mayin paddy is nowhere found. *Taungyas* of course abound on the hillsides in Btlin, Yinôn, and Kyônpagu circles.

9. The cultivators who do not live in villages, within a very short distance of their fields build a hut close to their holdings and reside there from the time the crop ripens until it is all gathered in; or if they do not live there themselves, their coolies invariably do. After the dry weather sets in water for both man and beast is generally obtained from a shallow tank or well in which the rain-water has accumulated; when this store is exhausted, water has to be carted out daily from the nearest village. The plough, the harrow, and the *setdôn* are in common use all over the subdivision. In Shwehle circle a few holdings are kneaded by a herd after they have been ploughed. In Bilin circle and in the south of Kawkhame and Zôkthôk the paddy is transplanted from nurseries. Over nearly the whole remaining area the paddy is sown broadcast. The consequence is that in many of the flooded or semi-flooded *kwins* a very large amount of seed paddy is used, for often the young plants are killed by the excessive amount of water, which rises rapidly, and then seedlings have to be procured and the damaged portion of the field planted. I asked many why they did not transplant more freely instead of sowing broadcast. The reason given was that there is always a chance of the sown crop succeeding, while, if they have nurseries and then transplant, they have the certainty of heavy labour expenses for which the extra outturn would not compensate. The *Ta-lains* certainly always prefer to sow broadcast when possible.

10. I heard of no paddy-fields which are manured, *i.e.*, to which manure is regularly carted in order to improve the soil. But the cattle roam about the *kwins* and the people thoroughly understand that the fertility of the soil is improved by the droppings. In one *kwin* where sugar is grown (Kyaukyedwin in the Thebyu *chaung*) and where the soil has deteriorated, a *Taungthu* named Maung U carted in 20 loads of manure at a cost of Rs. 10 and spread one load on each *ta* of his holdings. He said, however, that the manure had not improved the land at all, and he was thinking of throwing up his holding and taking up a fresh plot on the Kadatchaung-bya, where his son had preceded him, and where fresh land had been found. In Kyônpagu circle I saw manure being used in a *ya* where *pein-u* was about to be sown.

11. Both Upper Burmans and natives of India as well as the neighbouring villagers are employed as field labourers. The wives and daughters of the cultivators do not seem to be given much field-work to do and everywhere a large number of labourers are hired. A man hired for the whole season is generally given 200 baskets of paddy and his food. For ploughing only a good man can get 100 baskets, the average ploughman being paid 60—80 baskets. Most cultivators have one headman at the higher rate and several others at the lower. The hire of reapers is very similar. They do the reaping and winnowing and help to harvest the crop. Natives of India, however, take contract work for reaping only, and they are paid about Rs 80 and also given a little rice, some chillies, &c., for reaping a crop the estimated yield of which is 1,000 baskets. Upper Burmans came down in rather larger numbers this year, and in several instances where the men were unable to obtain work separately a gang was formed and reaping done on contract.

Many men were met owning large holdings who had originally started as labourers. Receiving high wages, they were able to save sufficient money and start on their own account when the land which was formerly flooded became culturable a few years ago.

12. In former times the sea touched the foot of the Kelatha hills in Kinywa circle. Ayetthema is situated on the side of these hills, and in a "Memorandum of a tour in parts of the Amherst, Shwegyin, and Pegu Districts" Mr. Taw Sein Ko makes the following remarks:

"It is the ancient Taikkala and the Golamathakanagara of the Kalyani Inscriptions. Dr Forchhammer in his notes on the Early History and Geography of British Burma, II, page 7, says: 'Though the seashore is now about 12 miles to the west, this place was still an important seaport in the 16th and 17th centuries; it is marked on the map of Professor Lassen as Takkala, but erroneously placed a few miles north of Tavoy. Cables, ropes, and other vestiges of sea-going vessels are still frequently dug up about Taikkala' * * *

Gradually the sea receded, and old men point out the places where they remember the coast to have been when they were children. The *chaungst* and water-courses became blocked up, and the country becoming flooded, no land could be worked. For how many years I cannot say, but certainly for the last 15 or 20 years the sea has been steadily eating away the land and is apparently bent on returning to its former bed. In Map No. 1 the boundaries of the subdivision are shown as they were 20 years ago; the red line across shows how much land has disappeared since then. Hngetthaik was a small village some ten years ago. Then land further west was washed away and people fell back on this and other villages in the neighbourhood and took up new land which the advent of the sea had drained and rendered culturable. The sea has once more overtaken them and they have been forced to move further east. The country was cadastrally surveyed as late as 1894-95, but several *kwins* in Kawkhame, Taikkala, and Shwele circles have completely disappeared since then. Not only does the sea wash away large areas of land annually, but except in the north of Kawkhame, where the land is high (and even then to a slight extent), the action of the tides and floods forms *chaungst* which completely cut up the land and render cultivation impossible for nearly a mile inland, though it must be also admitted that the same *chaungst* drain and render workable the land further in. I was shown many holdings where half of the fields had been washed bodily away with the unripened crop still on them, while the remainder of the crop was completely spoiled by the forming of these *chaungst*.

13. There is a canal now being dug between Kyaikto and Kawkadut which passes between Ayetthema and the sea. When Dr. Forchhammer wrote his notes the sea was 12 miles distant from Ayetthema. At the end of this hot season there remained only three miles of land and the sea to the nearest part of the canal was distant less than $2\frac{1}{2}$ miles. Considering this and what I have said about the way the land is cut up by the "hat" *chaungst*, I would earnestly recommend that the completion of the canal be delayed. It is impossible for any person to say whether the sea will remain where it now is, or advance or recede; the probabilities are that it will steadily advance, and if it does, the canal will be completely ruined. In two years' time it will be seen if the work can be continued with safety.

14. In the centre of Shwehle and Sittang circles the *kwins* are yearly flooded to such an extent that, except on the *kondans*, no work can be carried on. In several instances drainage cuts have been dug and old *chaungst* cleared out by the cultivators, and by this means some land has come under cultivation.

Salt.—Salt oozes through the soil in many *kwins* in the subdivision, appearing here and there in patches, more especially on the lands close to salt-water creeks. If much salt comes through and there is no timely rain to wash it away, the portion of the crop affected is entirely ruined. Sometimes this "*panon*" as it is called, appears in the same fields year after year, but there is always the chance of its disappearing and a few fields are left fallow on account of it.

Birds.—All crops are naturally visited by birds, but in the north-west corner of Sittang circle the sparrows are a regular plague. The *kwins* near are low and are covered with *kain* grass, and this may be one cause; but *kwins* in the north of Shwehle circle similarly situated with regard to flooded lands do not suffer to the same extent. The cultivators have to erect a net-work of cords hanging from

bamboos all over the *kwin*s affected when the crop is ripening. These cords are so close to each other that it is scarcely an exaggeration to say that an agile man could swing himself along by his hands from one end of the *kwin* to the other.

Insects.—Insects are much complained of in the cane-growing lands. Several varieties attack the cane, some at the root and others on the leaves. Those that eat the root are much dreaded, for it is, of course, impossible to clear them off and the canes attacked invariably die. In the paddy-plains, except in a *kwin* or two near Zòkihòk, insects are not very much complained of.

Pigs.—Pigs and other wild animals eat the sugarcane, and, to keep them and also domestic animals out of the crop, plantations are always very strongly fenced.

15. *Sittang and Shwehle circles.*—About six years ago some 20 Punjabis

Drainage canals.

were granted land in the neighbourhood of Letpanbu village, Shwehle circle, and money* was given them to make a canal through the flooded country. This canal they dug, commencing within about half a mile of Kya-in, which divides the two circles, and ending at Letpanbu village. The land round about is fertile, and if the canal had been a success a large area would have come under cultivation. The cut was a failure for several reasons: it is neither broad enough nor deep enough, and from what I heard it would appear that no levels were taken. All the grantees but one disposed of their land and went away. This one is Raman Singh, formerly of the Khelat-i-Ghilzai regiment, afterwards a police sergeant, wounded in the Kyaikto outbreak twelve years ago. He now has several paddy-holdings, some of which he works himself, while others are let out to tenants. I went over the ground with him and am of opinion that if the canal were properly made it would be not only of great advantage to the people, but the land rendered culturable would bring in a large revenue and well repay any sums spent on its reclamation. If the canal were carried on across the Kya-in fishery into Baungsein *kwin*, a large tract in Sittang circle, now valueless, would also come under cultivation. The fishery, which sold last year for Rs. 3,650, would be damaged and might be entirely spoiled, but I estimate that in the two circles some 6,000 acres would become culturable and the advantages both direct and indirect would more than compensate for the loss of the fishery. As far back as 1884 the Deputy Commissioner of Shwegyin called attention to the benefit which would probably result if this canal were made. If its construction be undertaken, the land should be marked out in 10 or 15-acre blocks and grants given out with great care; speculators and non-cultivators generally already have far too much land in these circles. No periods of exemption would be necessary.

To drain the land in Shogyi *kwin*, Sittang circle, the people are very anxious that a cut should be made through Bokadaw *kwin* and South Letpanthônbin island *kwin*. The land is lower on this side than on the other, where the river is nearer. So far as I can see, the project is feasible and the gain would more than counterbalance the expense.

The opinion of a skilled Engineer, however, would have to be taken about these proposals. The former might result in the course of the Sittang being altered,† and I do not know how the tides would influence the canal through Letpanthônbin.

Winkadat *kwin* might also be drained if a cut were made to one of the water-courses to the south-east and the latter deepened; while the people in Thabyegôn want to make a cut into the Kyaikto-Wimpadaw (old) canal.

Bilin circle.—In Payaseik Ashe *kwin* there are a number of acres of land which cannot be cultivated on account of floods. There is a large jhil at the back of the *kwin* and the cultivators want a cut made to the Bilin river to drain off the surplus water. The distance is short. There are other *kwin*s (Tabetswe, &c.) which are flooded and in most parts unworkable. I understand, however, that it is impossible to drain them on account of the embankment made some years ago to reclaim land on the Thatôn side.

* I am informed that Rs. 1,400 were given from the District Fund and that the men spent another Rs. 1,000 of their own.

† If the course of this river were altered, two villages, Alòk and Letpanbu, would probably have to be moved, but much good land would come under cultivation.

Various drainage canals have been cut by the Government in this and other circles from time to time, the largest probably being the cut between Kawkadut and Zókali made in 1885. How far these canals have helped to drain the country it is not possible to estimate, as the advance of the sea has opened up *chaungs* which have drawn off the surplus water of the country at the same time.

16. The settlement and district returns of cattle mortality are not contrasted this year, the reason being that the number of cattle which died, according to the statistics collected by this office, particularly in the hilly circles where there is little paddy cultivation, was very much smaller than the number shown in the district returns. The latter may not be exact, but they are not likely to err in recording more deaths than actually occurred. Only the returns for three years are available; those for 1892-93 were not complete.

The average number of buffaloes which die in one year is 789.66 or 5.40 per cent. of the total number; of bullocks 636.33 or 2.58 per cent. In 1894-95 dysentery was prevalent in Bilin township. Whole villages, however, do not appear to have suffered. In some places 8 or 10 head belonging to one owner died, while the cattle of the other villagers remained healthy and well. It would seem from the return (Statement II of Appendix A) that fewer Kawkhame circle cattle died than Zókthók or Bilin cattle, but I think that this was really not the case. There was at that time no grazing-ground in Kawkhame circle and the cattle were pastured in the grazing-grounds at the juncture of Kinywa, Bilin and Zókthók circles, where a certain number of them died; the reports were then made to the nearest registrar. There seems to be always a little disease about, and it was rather bad in Kinywa this year; but from the replies of the majority of cultivators who were questioned as to the cause of their cattle dying, I gathered that overwork and under-feeding during the ploughing season are answerable for some half of the deaths. In other words the cultivators, who for the most part are well off, in order to obtain a few more baskets of paddy, will work their animals till they are fit for nothing.

17. In no circle are there more buffaloes than bullocks; the latter are slowly but surely driving out the former, except where the ground is very heavy and too deep to be properly worked with bullocks. The reason commonly and truly given is that buffaloes are more liable to disease. Another reason, too, is occasionally given, especially in the neighbourhood of large towns, namely, that bullocks can be used for cart-work in the off-season, when buffaloes are practically useless. There are now twice as many bullocks in actual use as there are buffaloes. No old figures for the Kyaikto subdivision are available, but the following is interesting:—

In 1876-77, in the Shwegyin district, buffaloes exceeded bullocks by 146 per cent.

In 1896-97, in the Kyaikto subdivision of the old Shwegyin district, bullocks exceeded buffaloes by 68 per cent.

For the cultivated area under rice and cane there is now one yoke of plough-cattle per 8.29 acres. As, however, buffaloes which are used to plough paddy-land can afterwards be used in the cane land, more animals are really available than the above figures would show.

18. Except in the small and unimportant *kwins* in the east of Kinywa circle and high up the Thebyu *chaung*, where buffaloes can be hired for 50 to 60 baskets per yoke and bullocks for 25 to 30 baskets, the rate of hire all through the subdivision is uniform. For buffaloes 100 to 125 baskets a yoke for ploughing, the hirer being responsible for their safety. The 100 basket rate is usually paid to Karen owners, but if disease breaks out in or near the *kwin* the animals are at once taken away. When 125 baskets are paid, the owner has to risk the chance of disease breaking out. Sixty baskets of paddy are usually given as the hire of a yoke of bullocks. These rates are rather higher than those charged in the tracts settled in other parts of the Thatôn district or in Amherst.

19. Cattle are brought into the subdivision in the cold weather from Tilôn, Naunglôn, and Kawkareik. Buffaloes sell for from Rs. 80 for a yoke untrained to Rs. 160 for a trained

pair in good condition. Bullocks cost from Rs. 60 to Rs. 130 a pair, but for neither bullocks nor for buffaloes are the highest prices often given. An average buffalo is bought for Rs. 65 and an average bullock for Rs. 45. The price of a good pair of trotting bullocks ranges much higher, and animals of either sort which have been attacked by and recovered from rinderpest, dysentery, &c., can always be sold for a large price.

20. In the dry weather, after the crops have been harvested, cattle are let loose in the *kwins*. A good crop of grass generally springs up once the paddy is off the ground. In the ploughing season, after the morning work is over the cattle are grazed on the *kansins* and spare plots of ground, or in the grazing-ground if there happens to be one in the immediate neighbourhood. At night they are taken in and fastened up in the pens. After the ploughing, cattle are sent away to the grazing-grounds. Karens living at the foot of the hills herd many of them; the hire being five baskets of paddy if the animal is fetched home at the end of the rains; ten baskets if left till after the harvest. Sometimes a cash rate is paid. The grazier is responsible for the loss of cattle by theft or straying, but not for animals which die from disease.

Grazing-grounds.

21. The subjoined statement shows the grazing-grounds already allotted and those proposed for reservation:—

Grazing-grounds.

Township.	Circle.	GRAZING AREA.				Number of grazing grounds in each circle.	NUMBER OF CATTLE.			Total area cultivated.	Percentage of grazing to total area cultivated.	Area of grazing per animal.	Remarks.
		Proposed for reservation.	Already reserved.	Area outside settlement.	Total area.		Buffaloes.	Bullocks.	Total.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Blin.	Blin ...	895'03	253'10	...	1,148'13	6	2,123	3,718	5,841	14,119'37	8'13	'10	
	Zokthök ...	468'13	359'53	...	827'66	23	1,261	2,465	3,726	27,292'15	3'03	'22	
	Kawkhame ...	339'19	2,702'00	...	3,041'19	13	2,564	3,384	5,948	20,031'21	10'47	'51	
	Kinywa ...	22'60	1,136'24	...	1,158'84	5	1,605	3,028	5,633	14,643'09	7'91	'20	
	Yinön ...	1,001'29	...	...	1,001'29	3	829	661	1,490	2,813'17	67'58	'17	
	Total ...	3,626'24	4,450'87	...	8,077'11	50	8,472	14,156	22,628	87,898'80	9'18	'35	
Kyaihto.	Taikkala ...	1'26	...	...	1'26	1	661	854	1,515	7,618'78	'01	...	
	Shwehie ...	3,631'77	4,069'16	...	6,700'93	5	1,728	1,851	3,579	22,513'45	25'33	'87	
	Sittang ...	21'87	3,003'90	...	3,025'77	9	1,092	2,265	3,357	13,465'63	22'47	'90	
	Kyaihto ...	4,146'49	...	...	4,146'49	5	1,548	3,740	5,288	8,134'55	50'97	'78	
	Kyönpaga ...	1,149'43	...	...	1,149'43	2	1,113	1,752	2,865	2,227'01	51'61	'40	
	Total ...	7,950'82	7,073'06	...	15,023'88	22	6,143	10,462	16,605	53,959'41	27'84	'90	
GRAND TOTAL ...		11,577'05	11,523'97	...	23,100'99	72	14,615	24,618	39,233	141,858'30	16'28	'58	

22. *Kyaihto township*.—Proposals were made in 1884 by the Deputy Commissioner to reserve grazing-grounds with a total area of 1,742 acres in Kanni, Letpya (now called Kya-in Sagyet *kwin*) and Naungbo *kwins*. The Commissioner returned the proposals with an order to the effect that each grazing-ground *kwin* must be kept separate and that it must be distinctly shown for which villages each *kwin* was reserved. Nothing further appears to have been done and the grounds were never legally reserved. Proceedings have, however, been taken on several occasions against cultivators for trespassing on the proposed area in Letpya and Kanni and fines have been inflicted. This year further prosecutions were instituted. Even if the map filed in the grazing-ground proceedings be taken as really representing a duly reserved grazing-ground, the land cultivated by one of those prosecuted (Maung Tha Dun) is clearly outside its

limits. The south-west boundary of the Letpya ground is the Kya-in *yo*, where, after flowing due south, it takes a sudden turn to the south-east. Maung Tha Dun's cultivation lies entirely south of this stretch of the *yo* and therefore cannot be within the limits of the reserve as represented by the map. As regards the Kanni grazing-ground nothing can be said definitely. There are no natural boundaries, and all that the map can show is that a certain area of a certain shape was intended to be reserved. According to the maps filed in the Township Court at Kyaikto for the purpose of proving trespass the encroachments are large, but this is certainly not the case, and it is difficult to see what permanent mark the surveyor had to work from. On the south the Wimpadaw-Kyaihto cart-track alters yearly; on the north the Letpya *yo* was originally surveyed so roughly as to give no assistance, while on the east and west the boundaries are these very holdings, the cultivators of which are being prosecuted for trespass. I propose that the grazing-grounds shall be reserved as they now stand; and masonry pillars might with advantage be erected where the boundaries are paddy-holdings.

In the Naungbo Sagyet the Naungbo *in* has been leased. The water here is required for cattle and the stream should not be auctioned. Brick-making should also be put a stop to in this grazing-ground.

In the Letpya ground mentioned above there is a fishery sold on a five years' lease. Baling should be prohibited.

The Taikkala grazing-ground was formally allotted in 1884. In 1887 a number of people whose land elsewhere had been washed away were permitted by the Deputy Commissioner to cultivate in this grazing-ground, but the formal sanction of the Commissioner does not appear to have been obtained. Later, in 1892, the Deputy Commissioner, Shwegyin, ordered the grazing-ground to be properly demarcated and entered in the Register of grazing-grounds, but the occupants were apparently not ejected. Land is undoubtedly wanted for grazing in this neighbourhood, but it would be a distinct hardship on the cultivators, many of whom have bought their holdings, to turn them out now.

The Singoing Sagyet in Shwehle circle has been demarcated as one *kwin*. It is recognized as a village grazing-ground, but the people are aware that it has never been formally reserved and are likely to encroach if it is not reserved at once.

If the land in the centre of Shwehle and Sittang circles becomes culturable at any time, another grazing-ground should be reserved in a central position.

The people are anxious that the Shwehle grazing-ground, reserved in 1884, should be thrown open to cultivation. This ground has been demarcated and surveyed as two *kwins*, namely, the Angwi and Shwehle-Kywe Sagyet *kwins*. The land to the south has been washed away and many cultivators complain that they have no fields to work. There is a certain amount of other grazing available in the neighbourhood, and I am therefore of opinion that the south or Shwehle grazing *kwin* may be thrown open to cultivation. But I propose that yearly leases shall be given, so that no rights to the land may accrue, for if the sea recedes, the ground will again be required for grazing purposes.

Another grazing-ground which may be in part thrown open is the Letpanthônbin Island Sagyet, in Sittang circle. When the reservation was made in 1885 the area was stated to be 2,686.20 acres. Since then the land has silted up and the ground is an island no longer. The total area at present exceeds 5,200 acres, and this has been divided into two *kwins*. The southern *kwin* measures 2,500 acres, and if this is kept reserved, the north *kwin* may well be opened up. The people are in favour of this, but it will be necessary to keep out men who already have sufficient land. Those who have lost their fields through erosion should certainly have the first chance, no matter which circle they originally cultivated in.

23. *Bilin township*.—The Sinaing grazing-ground in Kawkhame circle was finally reserved this year. The cultivators in the neighbourhood complained greatly about there being no grazing-ground and said that many of their cattle died from want of food ("and want of proper attendance" might fairly be added). The reservation of this large area ought to effect some improvement. Unfortunately, before the final demarcation a number of cultivators had settled on the land and

they have had to be ejected. Many of them were men whose land in other *kwin*s had been washed away. I have proposed some alterations in the boundaries to the Deputy Commissioner, which, if accepted, will exclude from the reserve some of the land held by genuine cultivators and include a large area taken up by non-cultivating landlords as a speculation.

For Kyônkami and Kyônkalauk *kwin*s in Zôkthôk circle a grazing-ground is much wanted, but there is no available land. If the land near, in the Bilin river rises much more (sandbanks are now forming), a grazing-ground should be set apart before cultivation is allowed.

The Leikôn and Nyaungpalin *ins* in Bilin circle should be reserved for cattle drinking purposes.

The Thithogyun grazing-ground is proposed, not so much on account of present as of future needs. There is a large uncultivated plain here which is likely to come under the plough within a year or two as the country is gradually being drained; the villages in the vicinity will then increase in size and the cattle become more numerous.

24. If any *kwin*s become culturable which are not so now, cattle-paths should be reserved before grants are given out. The people are glad to have these paths, which are really useful.

Other recommendations.

Under the old Waste Land Rules of 1863 land "in the vicinity of all villages within a circuit of half a mile from existing boundaries" was reserved for grazing purposes. I am afraid there are not many villages in Kyaikto where such a reservation would now be possible; but the rule was a good one, and in other parts of the country might perhaps be applied with advantage.

25. In Resolution of the Chief Commissioner, Burma, in the Forest Department, No. 1R.—42, dated the 13th October 1894, it was ordered that the Settlement Officer should ascertain "what action has been taken in the tract under settlement under Land Revenue and Agricultural Department Resolution No. 106R., dated the 20th April 1886, and whether the orders issued in that Resolution have had any effect "in preserving the supply of firewood." The Settlement Officer was also ordered to make proposals for the preservation of the supply of firewood.

Fuel.

The Kyaikto subdivision may roughly be divided into two parts: first, the part to the west of the Kyaikto-Bilin road, consisting for the most part of plains; second, the hill tracts on the east of the road. The plains are treeless and have been so for many years except in the south of Zôkthôk circle and the south-east of Kawkhame. Many of the *kwin*s have had nothing in the shape of tree jungle on them within the memory of man. No reservation of any of the tree jungle now existing in the plains has been made, and as the country further south is coming under cultivation rapidly, it would be well to do so at once. The villages in the far south of Zôkthôk are few and small as the cultivators mostly come from a distance, but, as the jungle becomes cleared, probably the villages will increase in size. There is another reason besides the preservation of the fuel supply why, in my opinion, a reservation should be made in the south. The encroachments of the sea seem to be lessened to some extent where there is tree jungle and not only open *kwin* land. I cannot state positively that this is a fact, for there may be currents at work of which I have no knowledge, but I have noted in one or two places (e.g., Kyugyauk *kwin* in Kawkhame circle) that the land on which tree jungle stands has not been washed away, while land without trees in the vicinity is disappearing.

26. The villages in the great paddy-plain, except those in the south of Zôkthôk mentioned above, obtain their wood from four sources. Those near the sea are supplied with a fair quantity of driftwood. Of the remainder, some obtain their fuel from the jungle behind Zôkthôk village which lies between Zôkthôk and the Kyaikto-Bilin road, or from high up the Thebyu *chaung*, where Karens cut the trees and load the wood into carts at a very low rate. Nearly all the fuel used is cut and carted in by house-owners themselves. There is, however, a small trade in fuel, and I did

Proposed reserves.

not find that the price per cart-load (Re. 1 in Zókthók village) had increased at all of late years. The fourth source from which fuel is obtained for these villages and also for the villages in Kinywa circle is the jungle on the Kélattha hills and the unculturable highland to the north-east of them. There is ample fuel here for many years to come and no reserve is necessary.

The reservation in the south of Zókthók circle should be in the form of a continuous strip of jungle on west, south and east of Thitchauktaw and Dipyan *kwin*s.

Fuel for the salt-boilers in Kawkhame circle is nearly all brought in from a considerable distance, being floated down the Thebyu *chaung*.

The people in Bilin town obtain their fuel from the jungle on the hill immediately behind the town. They are also within reach of other jungles on the borders of and in Yinôn circle. But as the town is a large one, it will perhaps be advisable, as a precautionary measure, to make a reserve. The jungle along the Bilin-Kyaikto road for some 8 miles is unsurveyed, and I cannot therefore propose any definite boundaries, but I would recommend that a reserve be made close to the road and about 3 miles or 4 miles out of Bilin. As to the area to be taken up, 3,000 acres or so ought to be ample, there being so much other jungle in the neighbourhood of the town.

The fuel supply for Kyaikto town, in which the population is about 5,200, is obtained chiefly from the neighbourhood of Naungbo and Winkalaw. Near Kyaikto is the Naungbo grazing-ground *kwin*, and adjoining this is jungle block *kwin* No. 403, in which there are some 3,000 acres of uncultivated jungle. There are but few *taungyas*, and the *kwin* is at present used as a grazing-ground (unreserved). So much of the *kwin* as is not garden or village land might be taken up as a fuel reserve, in which, of course, cattle would continue to graze. To the north and east of this *kwin* there is a large area of unsurveyed jungle. If two blocks of about 3,000 acres each were here taken up, there would, I think, be an ample reserve, each of the three blocks being closed from time to time.

For Kyaikkatha village, and for certain villages in Shwehle circle on the other side of the canal, I think a small reserve is necessary. Most of the fuel passes through Kalun, a small village about 2 miles from Kyaikkatha, and during the dry season I am told 20 to 30 cart-loads are daily taken away. In addition to the firewood used for ordinary household purposes there are two other drains on the supply—the salt-boilers, and the launch which runs between Kyaikto and Wimpadaw. The owner of this launch informs me that his annual consumption is about 11,250 cubic feet. The wood used is cut under a license with limits as to girth, and the age of the trees felled varies from 18 years upwards. The wood is fetched into Supanu village, on the bank of the canal, by Burman cartmen, who receive 8 annas for each journey, and for felling and splitting annas 4 per 100 billets. Several trees were pointed out which had been felled for firewood for the launch, only the trunk of the tree as far up as the lower branches had been used, all the large upper branches lying waste. The larger trees along the Kalun-In-gabo road appeared mostly to have been cut. Jungle block *kwin* No. 431 contains about 2,500 acres of tree jungle and this might be reserved and a similar area in the unsurveyed jungle to the east. No salt-boilers or firewood contractor for the launch should be allowed to get their fuel therein. There is almost unbroken jungle for some miles further to the east and north-east where the supply of fuel for trade purposes can be obtained.

27. There are 25 leased fisheries within the settlement tract. Of these the largest are the Shwelanbo and Kya-in fisheries in Sittang and Shwehle circles. The latter fishery stretches across from Alok village in Sittang circle to near Letpanbu in Shwehle, and it was difficult to make an accurate map of it. The map filed in the district records does not show a very large number of watercourses, which, if not sold to, are at any rate worked by, the lessee or his tenants. If the irrigation works recommended in paragraph 15 are not undertaken, this unwieldy *in* might well be divided into two. The present *in* thugyi has let out parts of his fishery for more than Rs. 1,500.

The price of many fisheries has fallen considerably of late years; this fall has been caused by the near approach of the sea, salt-water driving out the fish. Baling is carried on nearly everywhere, whether provision is made for the same in the lease or not.

The Kyauklôngyi *in* thugyi claims every small watercourse running through the *kwins* under the Kelatha hills into the Kyauklôngyi *chaung* and he has had disputes with the cultivators. One or two of these *yos* are wanted for other purposes and proposals will be made to the Deputy Commissioner.

In Bilin circle the lessee of the Apu-apa and Kape fisheries claims the right to the Leikôn and Nyaungpalin *ins*. It is not quite clear whether they are leased to him or not, but they are both required for watering cattle.

The Kalun *in* in Kyônpagu circle was bought last year by one Sutan. An Advocate of Kyaikto named Ebrahim was his surety, and as it was Ebrahim and not the actual lessee who worked the fishery, it seems likely that the latter was put up to buy it for the former, who was not qualified to bid. The sum given, Rs. 1,880, was lower than the price given in the previous year, and Ebrahim stated that the water is deeper now than formerly, which prevents proper bunds from being erected. He himself, however, worked the "*myinwun*" allowed for four months and then let the *in* to four tenants for Rs. 1,515.

Although local salt is used for curing fish, a large amount of Indian salt is also bought for this purpose, the reason being that there is not sufficient of the former procurable at the time when fishermen require it.

A list of the fisheries, with rents paid, will be found in Statement III, Appendix A.

28. There is a Public Works Department unmetalled road leading from

Communications—Roads.

Bilin to Kyaikto, and thence to Sittang. All the streams are bridged, but as the rainfall is heavy, the road is generally much cut up. The bridge over the Kalun *chaung* badly wants repairs. Between Kyaikto and Bilin the road does not pass through a single village of any importance and is far removed from the paddy-plain. Jaggery is, however, carted along this road. There is a cart-track leading from Kyaikto to Ayetthema and from thence to Kawkadut. It passes along the foot of the Kelatha hills, through a long chain of villages. A canal is now being dug close to these hills in the direction of the Bilin river. The advisability of going on with this work is discussed elsewhere; if it be discontinued, some of the money thus set free might well be spent on improving the Kyaikto-Kawkadut road, along which there is much traffic, and in carrying it on from Kawkadut to the present Bilin-Kyaikto road, which it would meet about $2\frac{1}{2}$ miles from Bilin.

In the dry weather there are numerous cart-tracks all over the plain between neighbouring villages. But to avoid the tidal creeks and the canals, long rounds have often to be taken. On the most important routes temporary bridges are put up by men who exact a small toll for each cart which passes over. Near Zokali, where there is a canal emptying itself into the Bilin river, men put straw down at each low tide to enable carts to cross over the deep mud, taking a toll in the same way as the bridge owners. These bridges and crossings are a great convenience, and the toll demanded is always cheerfully paid. I have heard a rumour that it is in contemplation to declare these crossings to be public ferries and to put them up to auction. This will mean naturally that the tolls charged will be higher than they now are, and it will be an additional, if indirect, tax on paddy. From some *kwins* the paddy has all to be carted across watercourses.

A mile out of Bilin on the Thatôn road there is a public ferry over the Bilin river. At certain seasons the river is fordable for carts, but drivers complain that the ferry lessee blocks up the exit on the Thatôn side with his raft, which he refuses to remove until toll has been paid.

29. There is a canal between Wimpadaw and Kyaikto on which small

Communications—Water.

steam-launches ply for hire, and numerous boats and sampans are also procurable here and on the Sittang river. A daily launch in connection with the Kyaikto service leaves Wimpadaw for Shiwegyin, passing Myitcho *en route*, where the Pegu and Sittang canal launches await passengers. There are several bridges over the Kyaikto

canal; the approach to that at Kyaikkatha is very steep on both sides and is generally in a very bad condition. In the rains boats can go nearly everywhere owing to the many streams and rivers which intersect the plain country.

30. The principal town in the area under report is Kyaikto, the headquarters of the subdivision. It is situated at the foot of the Paunglaung range of hills, on the Kadat *chaung*.

Principal towns and villages. "According to the palm-leaf histories, the name was given to the town because the Kadat stream was fixed upon by Thamala and Weemala as one of the boundaries between the three provinces into which they divided the Talaing dominions."* This would fix the date of the foundation of Kyaikto somewhere about the end of the sixth century B.E.

The history of Kyaikto has not been uneventful. In 1856 it suffered from a Shan invasion, headed by an *ex-thugyi* of Kinywa, Nga Theela. The Township Officer was murdered, but shortly afterwards the leader himself was shot dead while storming the Kyaikto court-house.

On a much larger scale was the attack to which Kyaikto was again subjected towards the end of 1885. This insurrection was headed by the Mayangyaung and Kyaukkalat priests, and affected practically the whole Shwegyin district: Sittang, Wimpadaw, Kyaikto, and Bilin all suffered. Beyond a certain amount of temporary disquiet, nothing serious happened, and the strenuous efforts of the Civil and Military authorities soon reduced things to a state of peace again.

The town is now in a flourishing condition with a considerable amount of trade. It forms the market for a quantity of paddy grown in the neighbouring *kwins*, and in the selling season the Kyaikto-Wimpadaw canal is crowded with boats taking away the paddy to Wimpadaw, whence it is sent to Rangoon. The population of the town (which was constituted a municipality in 1889) at the last census was 5,164, occupying 949 houses. More than half of these are Burmans, with some Shans and Talaings, and a sprinkling of Karens, Chinese, and natives of India. The town is substantially built, the principal buildings being the court-house, the police-station, and the walled-in bazaar.

Bilin.—Next to Kyaikto the most important town is Bilin, which lies on the right bank of the Bilin river, nearly half-way between Kyaikto and Thatôn. After the first Burmese war the Governor of Martaban, Oonana, retired to Bilin with his followers, built a stockade, and was confirmed as Governor by the King of Burma. During the second war the town was surrendered without resistance to the British. In 1853 it was attacked by a Shan *thugyi*, but the insurgents were easily dispersed with the assistance of some troops from Kyaikto. It has always been liable to these inroads from Shans or dacoits, and the town has been twice burnt down and rebuilt.

The inhabitants of Bilin are chiefly Burmans, and from its central position between Kyaikto and Thatôn the town has become a fairly large trading centre. The annual overflow of the Bilin river deposits a large amount of fertilizing matter on the banks, and sugarcane is extensively grown in the neighbourhood.

Sittang is possessed of a historic rather than a present interest. It is prettily situated at the foot of a hill on the left bank of the Sittang river and is supposed to have been founded by Weemala in 588 B.E. It contains an object of archaeological interest, the Kyaikkèlunpun pagoda. Literally the name means "the pagoda of the 100 arms or embraces." The following account is extracted from the *List of Objects of Antiquarian and Archaeological interest in British Burma, 1892*:—

"One hundred *bilus*, meeting Gautama Buddha in the jungle, joined arms to confine him, but as he at once rose to a miraculous height, they could not make their arms meet even round one of his feet. Finding him more than mortal, they worshipped him; whereupon he preached and gave them a hair from his head, over which Thaketa, minister of King Weemala of Pegu, coming by his master's orders to found the town of Sittang (*circa* 1167 A.D.), erected the present pagoda."

There is another tradition to the effect that a war between Pegu and Sittang was averted by an agreement that the party which first completed its pagoda should have the victory. The Peguans put up a tinsel edifice at night, whereon

the people of Sittang, being deceived, gave in. However this may be, the pagoda remains unfinished to this day, though some restorations were effected a century ago and again by *ex-Myoök Maung Hmat*. It is octagonal in shape and a handsome structure built of laterite blocks, similar in size to those of the three pagodas at Kyaikto. A peculiarity is a flight of steps leading to the top on the river face.

On the hill on which the pagoda is built there was formerly a regular fort with a laterite parapet and a ditch, which for some years was garrisoned by a small British force. In the first Burmese war the town was well defended, the British being repulsed and several officers killed. In the second war it was surrendered by the Governor without resistance. Originally the headquarters of a subdivision, Sittang is not now even the chief town of a circle. Its partly isolated position is against its ever being a trading place of much consequence.

Kyaikkatha, about 8 miles north-west of Kyaikto, is possessed of some objects of interest, notably, the *Pya ta taung* or thousand pagodas. Few traces of them now remain, but the tradition concerning them still survives. According to the legend, when Weemala occupied the throne of Pegu and killed Thamela, he took the latter's queen to wife. At this time she was pregnant, and, fearing for her offspring, went into the jungle, where she was delivered of a son. This son, Athamintha, was miraculously cared for by a herd of buffaloes and grew to great strength. Some years later, when his step-father's kingdom was threatened by the King of Vizianagaram, he came down and defeated the enemy's champion in single combat. Then Athamintha had honours heaped upon him by the king, but this made the courtiers so jealous that they determined to kill him. Hearing this Athamintha left the town with his foster-mother, Nan Karaing, the queen of the buffaloes, and came to Kyaikkatha, which place he founded. A mermaid, Marimingala, fell in love with him and, assuming human form, married him. Athamintha's fame waxed great, for he was the only descendant of the gods (his grandmother was queen of the dragons) left among human beings. A princess of Cambodia determined to go to him, and with 1,000 knights dressed in gold set out for Kyaikkatha. But this did not please Marimingala, and as soon as the princess arrived near the town, the mermaid killed Athamintha to prevent him marrying another queen. The princess Ma San Myaing refused to be comforted, and having built a town close by called Mosomyo, resided there and founded the thousand pagodas in memory of Athamintha.

Kyaiktiyo.—Another pagoda of considerable celebrity is Kyaiktiyo, on the hill of that name on the ridge between the Sittang and the Salween. This point rises to a height of 3,650 feet, and on its summit is the pagoda which annually attracts crowds of worshippers, chiefly at the full moons of *Tabaung* and *Tagu*. The ascent from Kyaikto is not an easy one, but the curious nature of the pagoda well repays the climb. The following description of it is taken from the *Gazetteer*:—

"The pagoda, about 15 feet high, is built on a huge, almost egg-shaped, rounded, granatoid boulder, perched on the very summit of a projecting and shelving tabular rock, which itself is separated several feet from the mountain by a rent or chasm now spanned by a small bamboo foot-bridge, and on the further side drops down perpendicularly into a valley below. On the extreme verge of this sloping rock-table, and actually overhanging it by nearly half, is perched this wonderful boulder, 30 feet high and surmounted by the pagoda, reached by a bamboo moveable ladder. The mass appears as if the additional weight of a few pounds, or indeed a strong wind, would send it sliding down from the place it has occupied for unknown centuries crashing into the sloping valley beneath, and pious Buddhists believe that it is retained in its position solely by the power of the relic enshrined in the pagoda. This relic is a hair of Gautama given to a hermit residing on the mountain by the Buddha himself as he was returning from the second heaven of the Nat, whither he had gone to preach the law to his mother."

The pious Buddhist's faith goes further, and any worshipper on the summit will tell you that, even if he fell from the pagoda, the place is so holy that no harm would come to him. So far no disaster has befallen any one, though it can be no easy matter to clamber round the bend of the pagoda, as many do, when a high wind is blowing. The *ex-Myoök Maung Shwe Hmat* restored the pagoda recently and replaced the frail bamboo bridge by an iron one.

Other objects of interest in the subdivision are the Tigaung pagoda with the ruins of an old rampart at Zókhók, the Kelatha pagoda in Kinywa circle, and the Kyaikpi pagoda.

Towns and villages of more than 1,000 inhabitants.

31. The following is a list of the towns and villages containing more than 1,000 inhabitants:—

Township.	Circle.	Villages.	Population.	Remarks.
Bilin	Bilin	Bilin ...	2,394	None.
		Shwehle ...	1,033	
	Zòkthòk	Kawkadut ...	1,941	
		Zòkthòk ...	1,726	
	Kawkhame	Zòkali ...	1,008	
		Kawkhame ...	1,405	
		Theingyaunggyi ...	1,478	
		Kyauktalòn ...	1,361	
	Kinywa	Pauktaw ...	1,147	
		Kinywa Talaingsu ...	1,592	
Yinòn	Ditto ...	...	Nearly all the houses in this village have been washed away.
Taikkala	Mukayataung ...	1,113		
	Ah-nganywa ...	1,057		
Shwehle	Shwehle, South and North	1,188		
	Kyaikkatha ...	1,206		
Sittang	Letpanbu ...	1,146		
	Sittang ...	1,006		
Kyaikto	Wimpadaw ...	1,646		
	Kyaikpi ...	1,329		
Kyônpagu	Kyaikto Municipality ...	5,164		
	Ditto ...	...	None.

32. There is a local market of some importance in Kyaikto Town, but the true export markets are Rangoon and Moulmein. All the paddy from the northern circles, *i.e.*, Shwehle, Sittang, Kyaikto, Taikkala and Kinywa is sent to Rangoon. The paddy in the three last named circles is mostly sold in the rains. After being carted into the villages, it is stored and later on taken by cart or boat to Kyaikto and Wimpadaw and there loaded on to large paddy boats which proceed to Rangoon *via* the Pegu canal. From Shwehle and Sittang circles, except from a few *kwins* in the neighbourhood of Kyaikto and Wimpadaw, the paddy is carted to the Sittang river bank in the dry season and taken from there by boat.

The paddy from the south of Kawkhame circle and from most of the Zòkthòk *kwins* goes to Moulmein in the cold weather, as does the paddy from Bilin circle. It is carted to Chaungkanlan *seik* on the west or Zòkali *seik* on the east from the northern *kwins*, and some is also taken to the *seiks* on the Thebyu *chaung*. Boats carrying up to 1,000 baskets ply between these *seiks* and Moulmein. From the *kwins* further south the paddy is taken either to Dwabyu *seik* on the Bilin river or to Dipyan *seik* on the sea. Along the coast boats of from 2,000 to 2,500 baskets capacity anchor, and here the paddy is sold to brokers, who are able with a favourable tide to reach Moulmein in a day. A portion of the paddy from the Bilin *kwin* is taken by cart to Thatòn and thence by rail and river to Moulmein. But I think that paddy taken by this route is generally stored in Thatòn for some time before being taken on.

33. Sugarcane is said to have been introduced by Shans some 50 years ago and small patches, chiefly of the varieties known as *kaingkyan* and *kyannet*, were planted in the neighbourhood of Bilin. *Kyaukkaung* cane was also grown to a limited extent. About 1860 the Madras or white cane was introduced, and it is this cane which is now almost exclusively grown on both banks of the Bilin and Thebyu rivers. Sometimes a border of *kaingkyan* is placed round a field of Madras cane. It is said that cattle do not care for it.

34. In 1882 Mr. Smeaton visited the cane-growing land around Bilin and shortly afterwards Mr. Bridges, Settlement Officer, was sent to make a general inquiry and report on the sugar industry. He found that there were about 3,300 acres under cane, of which some 2,500 were in Bilin circle. The available land, chiefly on the Thebyu *chaung*, was estimated to be 2,000 acres. Mr. Bridges proposed certain rates, namely, Rs. 2-8-0 per acre for land on the Bilin river and Rs. 1-8-0 per acre for

land on the Thebyu *chaung*, the lower rate being recommended in that neighbourhood to encourage cultivation. No action seems to have been taken by Government on these proposals. Mr. Bridges further recommended "that Government should advance money to the cultivators most indebted after settling the claims of the money-lenders upon them." In April 1883 Rs. 5,478 were advanced as loans to cultivators, and the whole of this, with the interest, was easily recovered in 1884, although on account of heavy floods the crops had suffered some damage. In 1884 Rs. 20,000 were advanced, but the amount recovered in the following year was only just over Rs. 13,000. The reasons given for this short realization of advances were the destruction of crops by insects, scanty rainfall, and a bad market. The opening price in 1885 was Rs. 25 per 100 viss and this soon dropped to Rs. 19. Merchants who bought the jaggery in Bilin and took it to Rangoon were many of them unable to dispose of their stock except at a loss. Notwithstanding the non-recovery of the money lent, it was decided that further advances should be given in 1885 so that the spread of the sugar industry should not be checked. Rupees 30,000 were sanctioned, but of this amount only Rs. 17,800 were actually advanced. It seems to have been soon after decided that, on account of the known improvidence of the cultivators, no further special advances to sugar-planters should be made. A few years later, however, they were again given.

35. In 1885 the Shan outbreak occurred, and many cultivators who were implicated, or who owed money which they could not repay, left the country. Their land seems to have been at once taken up by others, for the thugyis' rolls show no diminution of the area under cultivation. At the present time nearly every available acre both on the Bilin and Thebyu rivers is cultivated. Around Nyaungpalin and in Hngetkyun (on the Bilin river) the cultivation has decreased. Fifteen years ago Hngetkyun was on the west bank of the Bilin, the river there taking such a curve that boatmen passing up took their morning and evening meals in nearly the same spot, having rowed hard all day to get round the bend. This narrow neck of land has been cut through and both Hngetkyun and Kyónkami *kwin*s are now on the Thatôn side of the river. Partly on account of salt-water, which does not suit the cane, and partly on account of erosion, much land here became unsuitable for cane cultivation a few years ago. In most cases, however, the cultivator did not suffer, for the land was very suitable for growing paddy and he was able to dispose of his holding, if he wished to, for a high price.

36. The soil on the banks of both rivers which is preferred for cane cultivation is a sandy silt known as *thenôn*. Given this soil over a good clay, and the outturns are as a rule large. The rivers overflow their banks two or three times every season, thus giving the necessary amount of water to the plants and at the same time making fresh deposits. About every third year the floods are high and then the crops on the low soil suffer. Cane is also grown on the higher *myaytha* soil behind the *thenôn*. Here rain-water is generally depended on for two years out of three. In the third or flood year, when the low land suffers, the crop from the high land is usually large.

37. A man entering on entirely new land either buys cane tops or cane pieces to plant. For the former he pays Rs. 2 per 1,000, 3,000 being used to plant out one *ta*. Full-grown canes are sometimes bought by the thousand, but as a rule a *ta* of canes (uncut) is bought, the price being about Rs. 40. One *ta* of canes cut up into lengths is sufficient to plant out from five to seven *tas* of land. Cane pieces are much more used for planting than cane tops. The cultivators state that the outturn of agger from a *ta* entirely planted with tops is much less than from a *ta* planted with cane pieces. Near Shwehle, where the *kwin*s are flooded and early planting the exception, tops are used; and fields in other *kwin*s are always patched where necessary with tops.

After clearing the land of all weeds the fields are ploughed up. The plough used is an iron one, and to make the furrows a wooden piece, in shape something like a bat, called a *kalontoung*, is fastened on to the blade. The Shans and Taungs thus make much more use of the plough than do the Burmans; in fact the former

seem generally to put much more work into their fields than do the latter. After the furrow is made the cane is cut into pieces about $1\frac{1}{2}$ feet long, each piece having three or four eyes, and is laid along the furrows with about 12 inches interval between each piece. This is done in September or October, sometimes a little later. A little earth is spread over each piece. I saw a child employed on this work just scraping a little with her foot from the ridge into the furrow. If cane tops are used instead of cane pieces, the land is generally ploughed once or twice at the beginning of the rainy season and is then left untouched till about November. After weeding holes are dug, each about 1 foot in depth and 1 foot across. Cane tops, having been previously soaked in water for several days to induce roots to sprout, are then planted, generally three together in a hole. The holes are then filled up, water is poured on, and the soil well pressed down. Burmans sometimes plant cane pieces in this manner.

Comparatively little new land is now taken up. When a person wishes to cultivate cane he buys a holding, half of which is planted and the cane nearly ready for cutting and crushing; the other half often has been prepared if not actually planted.

As to ratooning instead of planting, I only saw a few instances of it, and was told that the owner was letting his plants ratoon, either because he was unable to procure more cane to plant, or in order to obtain seed to plant the following year.

About a month or so after the cane is planted, the ground is carefully weeded and the soil loosened. This may only be done once, or it may be done three times during the year. It depends on the quality of the soil, the amount of weeds which spring up, and to a large extent also on the care with which the cultivator looks after his crop. Usually the weeds are removed and the ground loosened twice. In September the dead leaves are generally cut off the cane.

38. As a rule about one-half of the holding is cropped each year. A man with 10 *tus* of land will prepare and plant half in September or October. He can, if he wishes (and many persons do), plant peas and other vegetables along the ridges in the cold weather. The following year, at the same time, he plants the other half, and a month or two later the first crop is cut and the juice manufactured into jaggery. The land is then in its turn left fallow till the following September. Some few people have two holdings and work them in alternate years. Others work the entire holding each year, reserving a part of each crop for seed, and planting out cane tops as soon as the land is vacant; but I met only very few men who cultivated on this system. Fallow land, that is, land left entirely unworked for a full year, is seldom seen. In Sinin *kwin* on the Thebyu *chaung* soil has become exhausted and some fields have been given up. The owner said that if he could afford to let the land rest for a few years, there was no doubt it would recover, but as there is still a little land available high up the river and on the Kadat *chaung*, he intended to move elsewhere and start afresh. The best crops are said to be obtained from land which has been worked for two or three years. After 20 years the soil deteriorates and the outturns diminish. At least this is what the cultivators say, but I doubt whether the low soil can deteriorate very much, for it is constantly being fed with fresh matter from the river. The high land should no doubt have a rest occasionally, and this it seldom gets. I only came across one case in which manure had been used, and there had been no beneficial result.

39. About November the canes are ripe and ready for cutting. As a rule two men to cut and one man to boil the juice are hired. The cutters sever the canes close to the ground, and, after cutting off the tops and branches, which are used respectively for planting and for food for cattle, divide them in two, tie them up in bundles, and carry them to the mill. The mill and furnace are always erected in the holding and generally close to the cultivators' *ts*; only sufficient cane to feed the mill for one day is cut at a time. Mr. Bridges reported that—

"The mill consists of two heavy upright cylinders about 1 foot in length and 2 feet in diameter. The cogs are circular and are cut in two rollers superposed to the crushing

cylinders. A shaft about 12 feet long is fixed to one of the upper cylinders and is turned by a buffalo yoked to it. A few improved machines are now used in Bilin; they consist of three upright *pyingado* cylinders, and the middle cylinder, to which the shaft is attached, turns the other two by means of short straight wooden cogs. . . ."

The old pattern mills which were in general use in 1882 are still met with, but have been ousted to a great extent by the newer pattern. Mills with only two cylinders, but with the short straight cogs, were also seen. As all canes are pressed twice and sometimes thrice, there is some saving of labour in having a three-cylinder machine, for as the cane is passed through from one side, it is passed back again from the other. With only two cylinders one man has to be constantly gathering up the partly crushed cane and carrying it round again to the other side.

As the juice is expressed it flows into a bamboo frame beneath the mill and from there through bamboo piping into an iron pan in the furnace room.

"The juice is carried in chatties from the receiving pan to the iron boiling pans, which are placed then in a row over a furnace dug in the ground. The fire is kindled at one end of the furnace and boils all the pans in succession on its way to the chimney. The liquor is at first placed in the pan furthest from the fire, and as it evaporates it is passed on by means of ladles to the next pan, and from this to the pan immediately over the fire. It gets thicker as it passes along, and the impurities are removed by means of a wooden skimmer. In each pan is placed a bamboo framework to prevent the boiling juice from escaping over the sides of the pan. After the juice in the third pan has become sufficiently thick, it is taken off the fire and poured into an iron pan, where it is allowed to cool for a few minutes. It is poured on a bamboo mat, spread evenly with a piece of bone, and then divided with a piece of pointed bamboo into small squares. After it has become hard it is broken into cakes and packed away into bamboo baskets covered with leaves." *

40. The cultivators, their families and their hired labourers bring in sufficient fuel from the neighbouring jungle. Extra hands

Fuel used.

are not hired for this work and I only came across one man who said that he paid for his fuel. The cane trash, after being dried in the sun for a day or two, is also used as fuel—not by itself, but with the wood.

41. Several attempts have been made to manufacture sugar in Bilin.

Sugar refining.

Maung San Dwa first of all tried a Chinese method, but was unsuccessful. He then obtained a machine and manufactured for several years, but I understand from him that it did not pay. Two other men also attempted to refine soon after Mr. Bridges visited the tract. They made about 400 viss, of which only half was good. The net profit on the work was so small that they did not again attempt to make sugar.

42. Although a certain amount of jaggery is disposed of locally and a little

Disposal of jaggery.

finds its way to Thatôn, by far the largest portion is sent to Rangoon. Part goes by boat down the Bilin river, but most is carted to Kyaikto or Wimpadaw and taken on in boats. The total cost of carriage to Rangoon is Rs. 4 per 100 viss (*i.e.*, two baskets). This year, however, with a broken lock at Wimpadaw and the Pegu canal closed at one end for three months, the expenses were much heavier.

43. The prices fluctuate so much that it is hard to say what an average

Prices.

local price for jaggery is. The opening price is nearly always Rs. 35 per 100 viss, but it goes down very rapidly, and this year, in January, Rs. 16 was the rate quoted in some *kwins*. A great deal of course depends on the jaggery. The hard yellow cakes will keep longer and are worth about Rs. 2 in Rs. 20 more than the darker and softer cakes. From inquiries made it appears that the wholesale price of jaggery in Rangoon is Rs. 35 per 100 viss in September and Rs. 30 in March; but last December jaggery was procurable for Rs. 22-8-0 and in February for Rs. 21 per 100 viss. The demand does not seem to be great, and is certainly not continuous, and there are other markets too which supply Rangoon. The cultivators state that prices have been getting lower and lower year by year, but a reference to paragraph 34 will show that the price paid in 1885 was lower at the commencement and only slightly higher at the close of the season than the price obtained this year, while Mr Bridges mentions Rs. 9 per 100 viss as having been quoted to him.

* Report on sugarcane growing lands, by Mr. Bridges.

Imp 18586 Dated 8.1.10

GARDEN CULTIVATION.

44. The most valuable gardens met with this year are the betel-nut gardens in the Yinôn, Kyaikto and Kyônpagu circles. These are situated on the hillsides along the upper waters of the Thebyu and Bilin rivers and the Kadat *chaung*. They are owned almost entirely by Karens, and in many cases have passed down, by succession from father to son, for two or three generations. The present flourishing condition of the gardens gives evidence of much care and attention to the cultivation. The trees run on both sides of the streams from the higher parts of the hills to the water's edge, while the remoter gardens are irrigated by an elaborate system of distributary channels from the parent streams, the construction of which must have involved much labour. Side by side with these older gardens one comes across nurseries of young plants, which show that the gardens are worked to their full capacity by the substitution of young and vigorous plants for old and useless trees.

45. The system of sale of the betel-nut in the neighbouring villages varies considerably. In one the nut is sold green by weight; in another green by the hundred; in a third it is sold dry by weight.

46. From inquiries made and from what I saw, I estimate that an average tree has two bunches, from each of which 80 nuts are obtained. Some of the trees are very productive, 150 to 200 nuts being obtained from one bunch. About 300 nuts, when dry, weigh one viss, and on an acre of land there are probably 700 trees. Where the banks are steep the number of trees is rather less, while on quite flat ground the number is greater. If all the 700 trees are fruiting, the value of the nuts per acre is Rs. 300, the selling price being Rs. 8 to Rs. 10 per 10 viss. Deducting as much as one-third for trees which are immature or for fruit damaged by insects, the gross profit per acre is Rs. 200. Nuts, when sold green, are worth annas 4 per 100.

47. There is also a bye-product, the inside skin of the sheath of the branch. This is sold at annas 4 per viss for cheroot coverings. It is, of course, extremely light and it would take the skins of a number of branches to make up a viss weight. The garden owners state that any one is allowed to take these skins away, and that they, the owners, make no profit by the sale. However that may be, there is a regular price quoted, all the skins are invariably taken away, and, if the owner wishes, he can protect his rights to this bye-product as easily as he does to the actual fruit.

48. The betel-vine gardens are better near the Salween district border than they are lower down where the betel-nut is more extensively cultivated. The vines are trailed up tall trees in the jungle, generally three or four vines being planted together. The people were on all sides planting anew just before the commencement of the rains, and, comparatively speaking, not many old vines were seen. The life of the vine is said to be about 30 years and the leaves can be plucked from the first year. In most gardens the leaf is plucked three times in the year, but on account of the want of knowledge of weights amongst the garden owners, one cannot be very certain of the value of the leaves obtained at each plucking. In the report for 1894-95 the vines on the Tanpadaing hills were said to give as much as 10 viss on each occasion. Here they only admit to about one viss from the vines around each tree or three viss in the year. The number of vines in any one garden is generally small.

For sale 40 leaves are made into a bundle, 40 of which are sold as 10 viss (30005 00). I have weighed some of these bundles, and the reputed 10 viss, which is valued in the gardens at from annas 10 to Re. 1 according to the season, only weighs about three viss in reality: some weighed a little more and others rather less. *Pakondans* carry both the betel-leaf and betel-nut to the bazaars in Sittang, Kyaikto and Bilin, and the bazaar prices of course fluctuate according to the amount brought in. At the end of April Karen betel-nut was selling in Sit-

tang for Rs. 1.50 per viss and betel-leaf for Rs. 2.50 per 40 bundles. Both the carriers and bazaar-sellers were making their profit out of this difference.

49. Only a very few orange trees were seen. The fruit, I am told, is very small and poor and the selling price locally is only Rs. 2 to Rs. 2.50 per 1,000.

50. In the betel-nut gardens above mentioned the area is fully planted with valuable trees. There are some gardens on the Kelatha hills in Kinywa circle and also near Alu village in Bilin circle which are very different. Here the people own comparatively large areas, which in many instances have been handed down to them by their fathers. In some of these gardens there is not a single valuable tree; but as they are inherited, the people are loth to part with them. In others a vine or two is seen. A few have some good betel-nut trees on the hill streams, and a dorian is here and there met with. In but few gardens is the area fully planted. There is a reason in Kinywa circle for this neglect. Ten or twelve years ago the plain at the foot of the hills was flooded and unworkable. Now the water has drained off, paddy cultivation has been resorted to and the gardens neglected in consequence. Also in the last eight years there have been two whirlwinds which irretrievably damaged many gardens. The few betel or dorian gardens here of any value are owned by old men, who, as a rule, also own paddy-land and look on their gardens more as a pleasure than a means of making money.

Plantains of the *pigyan* and *yakaing* varieties are also grown on the hillsides, but the trees are planted so irregularly on account of the rocks which are scattered about that it is not possible to form any true estimate of the gardens' value. The fruit, however, sells for a good price, as all the gardens here are in a very central position. The following are the rates quoted to me in Winka village for different sorts of fruit and garden produce:—

Marians	...	...	As. 4 per <i>bye</i> .
Plantains (<i>yakaing</i>)	...	...	Rs. 1-12-0 to Rs. 2-8-0 per 100 bunches.
Plantains (<i>pigyan</i>)	...	...	Rs. 4 to Rs. 6 per 100 bunches.
<i>Dahnyin</i> (unshelled)	...	...	Re. 1 per basket
Betel-nut (green)	...	...	As. 6 per 100.
Betel-nut (dry)	...	...	Re. 1 per viss.
Bamboos (<i>wahboh</i>)	...	...	As. 6 to As. 8 each.

The house compounds at the foot of these hills are valuable as house-sites irrespective of the fruit trees contained in them. A few have some good betel-nut trees; others the usual mango and jack trees.

51. *Dahnyin* is largely grown in Kyônpagu circle, and to a certain extent in other circles too. The gardens in Kyônpagu are on laterite hills and the trees all seemed to be very flourishing. An average *dahnyin* tree is said to produce four baskets of fruit per annum and the life of a tree is from 25 to 30 years, out of which it fruits from 15 to 20 years.* The garden owners are Shans, Karens and Taungthus, and they generally carry the produce themselves to the neighbouring bazaars. The price in Sittang varies from Rs. 1-4-0 to as much as Rs. 2-8-0 per basket.*

52. In the neighbourhood of Bilin there is a large amount of miscellaneous cultivation, part on the sandbanks after the floods have subsided, part on the land in the centre of the *kwins* where cane cannot be grown. Peas, melons, chillies, Indian-corn and other vegetables are grown. Tobacco there are only small plots of. I asked the reason of this and was told that there was a large demand in Bilin for all sorts of vegetables, and that, although the profit on them might not be quite so much, the labour involved in growing them was much less than growing and preparing tobacco. There is certainly a ready sale for all the miscellaneous produce, which is mostly grown quite near the town. Rupees 50 per acre was admitted by some cultivators to be the value of the produce grown, but in most instances this is much too low. Some men plant radishes and coriander as soon as the water is off the ground. When this crop is disposed of, they plant Indian-corn, *chinbaung*, tomatoes and numerous other vegetables, and tobacco. The profit on these various crops, grown at the same time in one holding, are hard to get at. Melons (about 425 plants can be grown to the acre) never, I believe, sell for less than annas 2 each and go up to Rs. 20 per 100 as they become scarcer. I was told that one man who has

The outturns year by year vary greatly.

175 acres under miscellaneous crops made quite Rs. 400 in a year. This is probably exaggerated, and the man himself admitted nothing like it, but the profits are undoubtedly very large.

53. On the alluvial islands in the Sittang river, and on the river banks near Sittang village, plantains, sugarcane and a variety of miscellaneous vegetables, such as pumpkins, gourds, tomatoes, Indian-corn and also a little tobacco are grown. In each holding there seems to be a little of everything, and although there is no regular rotation, in many holdings the sugarcane is not planted in the same place every year. For these reasons the cane, plantains and miscellaneous crops owned by each person have been holding-marked together. The soil is excellent for all sorts of gardening, but the annual floods are so high that the plantain gardens are continually damaged. On the island opposite Sittang village I saw no plantain clumps; opposite Wimpadaw never more than three trees to a clump, and usually not more than two.

Pigyan plantains sell here for from Rs. 3-8-0 to Rs. 5 and *yakaing* Rs. 2 to Rs. 2-8-0 per 100 bunches. In an acre there are about 780 trees; from each tree, at a low estimate, four bunches are obtained. Taking an average price of Rs. 3 per 100, the produce from one acre is worth Rs. 93; but, as above noted, floods destroy many trees.

The sugarcane grown is *kyaukkaung*. It is never crushed and the juice manufactured into jaggery. The canes are always sold to be eaten as a sweetmeat.

54. The land is never ploughed. In Thadingyut, furrows about 5" or so in depth are dug with a spade. The seed pieces are laid horizontally along the furrow, each piece having three or four eyes. A little earth is sprinkled on the top of the cane pieces. After the young plants have sprung up the soil is loosened and the canes earthed up. At the commencement of the rains the earth is generally again loosened. As the canes get taller they are supported by a bamboo rail which is fastened to uprights at either end of the furrow. Dead leaves and useless sprouts are plucked off from time to time. On account of the high floods, which sometimes last for 15 or 20 days at a time, the young plants are often killed and then cane tops are planted in their stead.

The people admit to practically no profit, as they say the cane fails so often through floods and other causes. In a roughly measured area of 300 square yards I found there were (counting every distinct cane in one row and multiplying by the number of rows) 1,200 canes. This gives more than 19,000 per acre. Allowing that three-fourths of the canes are damaged, used for seed, or do not come to maturity, there are still left 4,840 canes, which sell at from Rs. 3 to Rs. 4 per 100. Perhaps the majority sell at the lower price. Even if they are all sold at Rs. 3, the value of the outturn per acre is Rs. 145-3-0.

55. On the Sittang islands a few good trees were seen, while in almost every village there are a certain number in the compounds. These trees fruit all the year round, and each tree yields 50 fruits or so yearly. They are nearly always sold retail at annas 2 a piece.

CHAPTER II.

GENERAL CONDITION OF THE PEOPLE.

56. The census of 1891 shows the total population of the Kyaikto subdivision to be 82,847. The density of the population per square mile is 135. In the Kyaikto township there are no less than 19,909 non-agriculturists shown to 14,414 agriculturists; 4,258 of the former are found in Kyaikto town. There are many others no doubt in the large villages of Kyaikkatha, Wimpadaw and Sittang, but I cannot believe that the total number of persons who work neither paddy, sugarcane nor garden land as their main source of subsistence is so large as is here given. For Bilin township the

figures are 40,577 agriculturists to 7,947 non-agriculturists. As shown in paragraph 6, according to the thugyis' capitation-roll nearly 70 per cent. of the population are agriculturists, and I think that for purposes of calculation this is a safe number to take. The total cultivated area is 141,856 acres, which allows 2.45 acres per head of the agricultural population, or rather more than 14½ acres per family of six persons.

57. It is not very easy to form a true estimate of the standard of living

Standard of living.

amongst Burmans and Talaings. The rich man's house is more substantial and more cattle and carts are found therein than the poor man can show; but the interior, except in the larger villages, where some show of furniture is made, is much the same in both cases. There are, however, certain signs by which the general wealth of the population can to a certain extent be gauged.

The houses are for the most part very substantially built. Excluding the large towns of Kyaikto and Bilin and the very small villages, some 60 per cent. of the houses are built of wood and a few of brick. Of the balance, the majority have wooden posts and a large number wooden floors to them. Most houses are roofed with *thekkdè*, but a few poor people use the leaf of the *kabaung* cane which grows on the Kinywa hills. In appearance this leaf is not unlike the *dhani* leaf, but it does not last so long.

Besides the ordinary cart used for the conveyance of paddy or merchandise, there are a number of small pleasure-carts kept by the people. It is true that these carts are occasionally hired out to others, but in the great majority of cases they are kept solely for the use and comfort of their owner. Many of these carts are handsomely carved and cost as much as Rs. 80.

Excluding the bullocks used in the fields, there are a number of trotting bullocks kept, for some of which very high prices are paid. Race-courses are laid out at convenient centres and during the dry weather matches are constantly taking place, at which, it is said, large sums of money are lost and won.

Travelling *pwe* companies from Rangoon and Pegu tour through the country in the dry season and entertainments are constantly being given. In some cases a speculator hires the company for a certain number of performances and charges for admission. In others the companies are hired by individuals who are giving a *shinpyu* or other festival. The manager of one company told me he was paid Rs. 80 for each night's work; rather less if engaged for several days. This is, of course, considerably more than the local *pwe* companies would receive in poorer neighbourhoods. Regular theatres of matting were often seen near villages, which the different companies occupied in turn. *Pôngyi kyaungs* are numerous and generally well built. Additions to them are constantly being made, and as wood and brickwork are not particularly cheap, it may be taken as a sign that money is fairly plentiful. The number of Upper Burman priests is noticeable. One candidly admitted that he came to Lower Burma because the *kyaungs* were more comfortable, the food better and very plentiful, and the work to be done *nil*. The people of the subdivision do not enter the priesthood to any extent; they find the world a very pleasant place to live in.

In the hills where Karens are mainly found the people live in comfort, but a sort of rude comfort that the Talaings and Burmans in the plains would not appreciate. The houses are made of bamboo, thatched as a rule with the leaves of the jungle toddy-palm. They cannot be built of wood, for every year the houses are abandoned and new ones built. Formerly the villages used to be moved some distance each year, but now the people have gardens of which they thoroughly understand the value, and the houses are generally rebuilt within a few yards of their former sites. Here, where timber is cheap and transport laborious, one would imagine that *pôngyi kyaungs* would be roofed with wood. In many of the far distant villages, however, I found the same marked preference for corrugated iron which is shown in the plains.

In the main the cultivator is well off, both on the hills and in the plains.

58. The cost of living averaged from the figures for all the cultivators examined has been found to be Rs. 210.26 per family, or Rs. 6.86 per acre. In the adjoining township of

Cost of living.

That on the cost per family was found to be Rs. 27 more than in Kyaikto, while the holdings, being nearly three acres smaller than those in this year's tract, the cost per acre came to Rs. 2 more.

The amount of paddy (column 9, Statement IV) said to be actually consumed averages nearly 30 baskets per head per annum. The number of hired labourers who have to be fed by the cultivators is large; but when the number of women and children per house is taken into consideration, there can be no doubt that the amount of paddy provision is exaggerated. The average number of the family, by races, varies but little. The Talaings put their paddy provision at 212 baskets per family, while the Taungthus, who hire more labourers, only use 176 baskets. The Karen house expenses per family are Rs. 170 against the Talaing's Rs. 232, but the cost per acre is rather more.

59. The cost of cultivation for all classes comes to Rs. 276.06 per family or Rs. 9 per acre. There is no doubt that some of the land-owners make an extravagant use of hired labour, which costs them Rs. 6.18-0 per acre. A good many labourers are hired by tenants, but as the latter have to pay rent, they cannot afford to spend as much as the landlord, and so save Rs. 1.9-2 per acre by doing more work themselves. Hire of cattle amounts to nearly Rs. 1.25 per acre; the charge annually incurred through loss of cattle is 10 annas per acre and grazing hire costs 8 annas per acre. This last charge will be somewhat reduced when more grazing-grounds are set apart in the vicinity of villages.

INDEBTEDNESS OF CULTIVATORS.

60. Of the total number of paddy cultivators examined 23.6 per cent. are indebted. Of these 7.8 per cent. are hopelessly involved, mostly men in the flooded circles of Shwethle and Sittang; 48.3 per cent. of those indebted owe money on account of house expenses, but this term is used to cover a multitude of expenses which do not come under any head relating to cultivation. In one case a man speculated in a boat, intending to turn broker. He lost Rs. 500 before he returned to his legitimate work as a cultivator. In another case Rs. 800 was spent on doctors. Of the total amount of money owed, by far the larger part has been spent in purchasing land and cattle. One man owes more than Rs. 1,700 for land he bought in Taikkala circle. In Pobok *kwin* of the same circle nearly every man is in debt. The cultivators are mostly new men who have lost their land elsewhere through the action of the sea. Their debts, though numerous, are not heavy; generally paddy was borrowed under agreement that two baskets should be returned for every one lent: this interest is not, however, so high as would appear at first sight, for when the paddy was borrowed the price was high, and it would be returned after harvest when the price is low. In Myinkawaing *kwin*, Kawkhame circle, the tenants are nearly all new-comers and they had to borrow before they could start work at all.

The average amount of debt per person examined is Rs. 49.9; per person indebted Rs. 211-3.

Return of Indebtedness.

26

REPORT ON THE SETTLEMENT OPERATIONS IN THE KYAIKTO SUBDIVISION, SEASON 1893-97.

Township.	Circle.	TOTAL NUMBER OF CULTIVATORS.		PERCENTAGE OF CULTIVATORS.		CLASSIFICATION OF DEBTORS ACCORDING TO THEIR ABILITY TO PAY.			AMOUNT OF DEBT AND RATE OF INTEREST.		INCIDENCE OF INDEBTEDNESS.	REASON FOR INCURRING DEBT, PERCENTAGE.				Remarks.		
		Examined.	Indebted.	Not indebted.	Indebted.	Able to pay in one year.	Not able to pay in one year, but able to pay eventually.	Hopelessly involved.	Debt classified according to rate for interest. Per-centage.			Total amount of debt.	Average amount of debt per person indebted.	For expenses of cultivation.	For home expenses.		For purchase of land.	For purchase of cattle.
									36 per cent. and under.	Over 36 per cent.								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
											Rs.	Rs.						
Bilin.	Bilin .	50	16	68.0	32.0	81.2	18.8	...	93.8	6.2	2,950	184.4	...	56.3	25.0	18.7		
	Zokthok	126	35	72.2	27.8	65.7	31.4	2.9	88.6	11.4	7,910	226.0	...	25.7	31.4	42.9		
	Kawkhame	176	21	88.1	11.9	80.9	19.1	...	61.9	38.1	5,195	247.4	14.2	61.9	4.8	19.1		
	Kinywa	110	17	84.5	15.5	70.6	29.4	...	58.8	41.2	2,865	168.5	17.6	41.2	11.8	29.4		
	Yinon ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kyaikto.	Taikkala	86	28	67.4	32.6	60.7	39.3	...	32.1	67.9	7,106	253.8	10.7	75.0	3.6	10.7		
	Shwehle	128	31	75.8	24.2	38.7	38.7	22.6	38.7	61.3	6,350	204.8	19.4	54.8	6.4	19.4		
	Sittang...	74	31	58.1	41.9	35.5	45.1	19.4	41.9	58.1	5,155	166.3	41.9	35.5	6.5	16.1		
	Kyaikto	12	1	91.7	8.3	100.0	...	...	100.0	...	500	500.0	...	...	...	100.0	
	Kyongpagu	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total	762	180	76.4	23.6	58.9	33.3	7.8	57.8	42.2	38,031	211.3	15.6	48.3	12.8	23.3		

61. Although the average amount of debt per person indebted of the cane cultivators (Rs. 176·9) is less than the average amount owed by paddy cultivators, the percentage of persons in debt is far higher, namely, 60·5 per cent.; 40 per cent. of these owe money for cultivation (including manufacture) expenses, while not a few are indebted for purchase of land. It will be interesting here to compare the indebtedness returns made by Mr. Bridges in 1882.

	Number examined.		Number indebted.		Amount of indebtedness.		Average amount of debt.		Percentage of number indebted to number examined.	
	1882.	1896.	1882.	1896.	1882.	1896.	1882.	1896.	1882.	1896.
Burmans	23	20	10	12	1,750	2,115	175	176·3	43·47	60
Shans	75	26	56	14	17,020	3,710	303·92	265	74·66	53·8
Taungthus	146	26	65	20	6,660	2,685	102·53	134·3	44·52	76·9
Karens	...	14	...	6	...	690	...	115	...	42·9
Total	244	86	131	52	25,430	9,200	194·12	176·9	53·68	60·5

Average debt per person examined in 1882, Rs. 104·22; in 1896, Rs. 106·98.

The number of persons examined this year is smaller than the number examined by Mr. Bridges, but considering the area under cane I think that the number is large enough to base statistics on. With the exception of the Shans, the percentage of cultivators indebted and of amounts owed has increased, and taking all the races together, nearly 7 per cent. more are indebted now than in 1882, and this notwithstanding the substantial sums of money that have been advanced from time to time. The indebted Shans now as formerly owe more money per head than do the men of other races. They are certainly extravagant, and thugyis and others say that they are continually gambling during the time that sugar is being manufactured. I do not think it is proved that they gamble more than their neighbours, while they undoubtedly work hard. Buffalo fights are held from time to time and no doubt money is won and lost on the results, but other races beside the Shans are interested in and attend these matches. The average debt per head of the Taungthus is much increased by the amount (Rs. 860) owed by one man, who has spent about Rs. 3,800 in the last five years on building *kyaungs*, &c. That more Karens are not in debt is no doubt partly due to the fact that most of them have their holdings far away from Bilin, where they might be tempted to extravagance and where the professional money-lenders mostly reside. The rate of interest charged varies from 3 to 4½ per cent. per month; the Shans as a rule paying a high rate as they are said to have a disagreeable habit of leaving the country when their debts get too heavy to pay: 84·60 per cent of indebted cane cultivators pay more than 36 per cent. interest against 42·20 per cent of the indebted paddy cultivators.

62. The statement annexed shows the distribution of the cultivated and uncultivated land. The total cultivated area is 141,856·00 acres, the land shown in column 8 being brick-fields. In Shwehle and Sittang circles there are 7,691·49 acres lying fallow and more than 7,000 acres of culturable land which has been thrown out of cultivation on account of floods. Column 22 shows the land under water; a large portion of this land has been submerged by the sea.

Distribution of Land.

Township	Circle.	Under paddy cultivation.	Uncultivated paddy land.	Garden land.	Sugarcane land.	Miscellaneous land.	Other land.	GRAZING-GROUNDS.		Village etc.		LAND THROWN OUT OF PADDY CULTIVATION.		LAND THROWN OUT OF GARDEN CULTIVATION.		Monastery or Pagoda land.	Road.	TREE OR BUSH JUNGLE.		GRASS JUNGLE.		Total area.	Remarks.
								Culturable.	Unculturable.	Culturable.	Unculturable.	Culturable.	Unculturable.	Culturable.	Unculturable.			Culturable tree jungle for paddy.	Unculturable tree jungle for paddy.	Culturable.	Unculturable.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Bilin.	Bilin	8,740.81	716.12	3,489.85	3,358.33	454.40	76	630.54	624.73	326.32	44.73	...	335.36	133.48	84.75	257.85	914.74	10,635.68	2,438.34	5,170.30	3,396.12	39,123.47	
	Zakthok	26,577.23	484.24	225.89	...	4.79	...	430.18	369.54	281.21	34.05	192.64	27.63	...	53.09	160.44	1,481.97	2,779.89	1,321.87	225.43	3,084.98	37,716.07	
	Kawtlame	28,533.64	454.98	42.95	...	...	...	2,408.26	646.06	403.22	460.87	266.54	4.42	...	31.96	103.53	1,255.99	584.04	2,240.31	133.03	15,196.08	51,575.62	
	Klaywa	12,291.62	214.01	1,921.92	201.92	13.64	...	1,110.35	43.44	475.63	141.17	1,072.36	518.79	1,595.97	91.14	204.39	695.85	4,534.75	1,353.34	336.62	1,435.49	28,863.58	
	Yinda	845.91	177.57	849.87	872.86	67.02	...	36.12	2,309.36	226.81	284.75	117.34	2,554.82	1,044.50	58.24	88.10	1,016.65	30,659.81	1,846.54	714.91	1,994.53	45,966.65	
Total		76,986.21	2,046.06	3,889.16	4,433.05	539.85	76	4,614.55	3,593.13	1,513.20	965.57	2,459.68	3,442.22	2,793.95	319.18	814.31	4,146.20	49,486.17	9,190.40	6,580.29	25,108.25	202,225.39	
Kyaukse.	Taithala	7,230.85	265.72	32.21	...	...	...	4,615.99	1,742.14	265.00	3,804.88	54.19	8.61	...	8.20	37.55	655.20	...	853.66	9.96	4,259.99	14,001.50	
	Shwele	27,215.76	4,551.54	141.94	...	4.21	...	3,550.04	2,654.24	241.86	3,209.77	709.67	121.53	243.74	37.55	305.77	1,632.65	274.55	9,872.97	556.26	3,691.27	46,412.39	
	Sittang	9,415.38	3,129.95	384.29	10.24	715.66	...	3,550.04	2,654.24	241.86	3,209.77	709.67	121.53	243.74	37.55	305.77	1,632.65	274.55	9,872.97	556.26	3,691.27	46,412.39	
	Kyalito	6,749.98	276.82	714.43	389.96	4.81	1.54	841.70	3,348.15	330.73	78.03	139.10	967.17	8,318.65	167.04	271.37	244.47	5,276.65	752.04	1,643.35	1,703.63	31,617.60	
	Kyaukpa	770.89	384.71	1,059.92	7.49	4.00	...	883.71	490.92	122.54	86.82	...	1,586.98	506.10	69.32	230.70	506.86	25,315.98	363.86	1,523.77	946.30	44,845.87	
Total		41,869.86	8,618.74	2,332.79	407.79	728.69	1.54	6,742.72	8,235.45	1,036.31	7,645.60	902.96	2,664.74	9,067.49	368.30	1,073.68	3,153.75	45,584.11	19,468.61	12,445.52	15,148.89	187,407.54	
Grand Total		118,856.07	10,686.80	6,221.95	4,840.84	1,268.54	8.30	11,357.27	12,128.58	2,549.51	8,611.17	3,392.04	5,106.96	11,861.44	687.48	1,887.99	7,299.95	95,070.28	28,659.01	19,025.81	40,257.14	390,752.93	

The culturable waste area available for cultivation amounts to 50,677.09 acres or 12 per cent. of the total area. Of this culturable area, however, the greater part is only fit for garden cultivation and much of the remainder requires a considerable amount of work before paying crops could be grown.

Average area of holdings.

63. The average area of holdings circle by circle is given in the following statement :—

Average area of holdings circle by circle.

Township.	Circle.	PADDY-LAND.		Garden land, from settlement register.	Miscellaneous, from settlement register.	Sugarcane, from settlement register.	Remarks.
		From settlement register.	From general agricultural statistics.				
1	2	3	4	5	6	7	8
Bilin	Bilin	...	Acres.	Acres.	Acres.	Acres.	Acres.
	Zôkthôk	...	15.97	29.66	1.11	1.94	4.39
	Kawkhame	...	29.86	30.99	.99	.59	...
	Kinywa	...	26.40	31.86	.39	...	...
	Yinôn	...	18.07	22.29	1.61	.71	6.31
	Taikkala	...	6.96	...	.60	1.36	4.84
Kyaikto	Shwehle	...	22.05	26.51	.47	...	...
	Sittang	...	29.82	36.87	.63	.70	...
	Kyaikto	...	19.61	32.81	1.41	4.31	3.44
	Kyônpagu	...	21.88	40.40	.60	.21	5.65
			14.26	...	1.14	1.33	1.87
	Total	...	23.30	30.65	.97	2.59	4.52

The average area of the holdings according to the general agricultural statistics is larger than according to the settlement register. No statistics were taken about the small paddy holdings mixed up with the sugar and garden cultivation in Bilin and Yinôn circles. In Kyaikto circle there are a number of small holdings on the border of the jungle. Except in these out-of-the-way *kwins* the paddy holdings are generally large. The garden holdings are nowhere large, but in the hill *kwins* some men own as many as eight or ten small gardens.

64. There has, I understand, been some talk about the pressure on the soil in this part of the Thatôn district. I do not think that there can be said to be any pressure where there are more than 14 acres of cultivated land per cultivating family. But there is no doubt that there are a number of men who want paddy-land and who cannot get any. These unfortunate people, having lost their fields through erosion, moved further inland in the hope of being able to take up other land. But most of the already culturable land had been taken up before their arrival by men who had fair-sized holdings and spent their gains on increasing them. This has no doubt caused the cry that there is not sufficient land for the people to work. At the same time, however, that this cry was raised Karens were busy clearing the jungle in the south of Zôkthôk circle where the soil is good. Some of the Talains and Burmans could have moved there too if they had wished, but they preferred in many instances to build new villages for themselves, where they must have known there was little or no land available, and then petitioned for the grazing-grounds to be thrown open.

65. Under the rule for the sale of waste lands of 1863, 411.50 acres in Kawkhame circle were granted to Ebrahim Cashim in August 1867 by the Deputy Commissioner of Shwegyin; 8.90 acres of this grant consisted of roads and no charge was made for this area, one of the conditions being that the right-of-way enjoyed by the public should not be interfered with. The purchase money for the 402.60 acres was

Rs. 1,006-8-2; of this sum Rs. 100-10-5 was paid down, and on any balance left unpaid after 31st October 1867 interest at 10 per cent. per annum was charged. Up to 2nd May 1870 Ebrahim Cashim had paid no more than the first instalment and he sold his title to the land to Maung Nyun and Ebrahim Hattiya for Rs. 150 on that date: these men paid the balance due to Government. When they bought the land it was still uncultivated, about half being covered with *kaing* grass and half with tree jungle. In 1879 Ebrahim Hattiya and Maung Nyun divided the land between them, each taking 201-30 acres. This transaction was registered in the Deputy Commissioner's office on the 19th August 1879, and the land now belongs to Maung Nyun and Mahomed Hattiya, son of Ebrahim Hattiya. The total area of the grant *kwin*s (each owner's land has been surveyed as a separate *kwin*) now is 430-32 acres, including all streams, &c. The cultivated area is 426-27 acres or 23-77 acres more than the area originally granted for cultivation. Of this 8-90 acres consists of the roads left through the grant. They have been cultivated over and I do not think it necessary now to enforce the provision about leaving them open.

Condition X of the grant is as follows: "The title conferred by this grant will not exempt the proprietor from any cesses or liabilities (other than liability for the land revenue) which may be imposed by law." No cess has ever been paid by either grantee.

Maung Nyun is now liable for revenue on 14-35 acres and cess on 215-65 acres; Mahomed Hattiya for revenue on 9-42 acres and cess on 210-72 acres.

Ebrahim Hattiya worked a part of his grant himself until his death six years ago. His son is a trader, and tenants now work the whole of his land. They all pay rent in cash.

Maung Nyun, who is now an old man, worked a large portion of his land himself till eight years ago. He then let the land to tenants, who pay rent in kind. One tenant has worked here for ten, another for seven years. All the other tenants in both *kwin*s have only worked for one or at most two years.

The average rent paid by the grant *kwin* tenants is Rs. 6-42 per acre. The rent, including revenue paid by tenants in the adjoining *kwin*, is Rs. 6-28 per acre; or excluding revenue Rs. 5-42 per acre.

66. There are no statistics connected with the past condition of the tenant classes which render it possible to make any comparison with their present condition. Notwithstanding the high rents, which are influenced as much by the position of the field as by the fertility of the soil, the tenants spend as much per acre as the land-owners do on their house expenses, the Talaing tenant indeed spending more than does the Burman land-owner. Amongst the tenants, however, it must be noted that there are a certain number of men who own large holdings of their own and hire land in addition. This would go to show that the rents, though comparatively high, leave a large margin of profit to the tenant-cultivator. There are 1,627 tenants working land belonging to 1,390 landlords, the percentage of land let to total area being 30-02. This amount is, I should say, likely to increase; for the land-owners do not care to dispose of their land unless they can buy large holdings instead, and men who have lost their land through erosion are anxious to become tenants when they cannot purchase.

The statement attached is an abstract of the tenant statistics. The full tenant statistics will be found in Statement No. V-A and B of Appendix A.

Tenant Statement.

District.	Township.	Circle.	Total area of paddy-land in circle.	Number of landlords.	Number of tenants.	AREA RENTED			Amount of rent not including revenue.	Amount of revenue paid by tenants.	Total amount of rents and revenue paid by tenants.	Total outturn of land rented according to statements of cultivators.	Value of outturn.	Outturn per acre, bushels.	Total rent per acre paid by tenant, columns 7 and 12.	Incidence per acre of present revenue on paddy in same circle.	Percentage of rented to total area, columns 4 and 9.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
TARANG.	Bilin.	Bilin ...	9,456'93	72	79	1,109'79	40'58	1,150'37	4,241'85	581'45	4,823'33	39,837'49	22,906'55	35'89	4'34	1'47	12'16	
		Zakthok ...	27,061'47	238	257	7,803'47	195'41	7,999'88	34,275'21	3,995'17	38,271'38	274,707'80	1,54,824'68	35'72	4'90	1'87	29'56	
		Kawkhame ...	28,510'95	314	396	9,800'14	244'79	10,044'93	51,542'24	5,157'06	56,700'30	410,325'55	2,46,196'17	41'86	5'78	1'75	35'23	
		Kinywa ...	12,805'63	173	202	3,542'62	93'99	3,635'71	25,783'41	281'70	26,065'11	153,994'06	92,394'03	43'46	7'49	1'00	29'07	
		Yinon ...	1,023'48	12	15	63'36	5'61	68'98	96'25	21'44	117'69	1,182'34	650'28	18'66	1'85	1'49	6'73	
		Total	78,558'47	819	959	22,319'38	580'49	22,899'87	1,15,039'99	10,566'82	1,25,606'81	1,20,044'65	5,25,671'71	39'42	5'66	1'61	29'15	
	Kyalto.	Taikkala ...	9,586'57	124	141	2,893'03	142'60	3,035'63	19,017'78	1,515'66	20,533'44	113,622'89	71,014'30	39'27	7'09	1'75	40'01	
		Shwehle ...	22,597'30	182	215	5,681'19	630'55	6,312'04	29,139'92	2,221'06	31,360'98	193,475'15	1,22,521'96	31'05	5'52	1'87	28'11	
		Sittang ...	12,353'33	163	192	3,323'33	457'28	3,780'61	11,307'28	1,875'99	13,183'27	110,350'11	68,087'50	33'21	3'95	1'73	20'67	
		Kyalto ...	7,004'62	87	95	2,416'34	74'58	2,490'92	15,929'21	377'31	16,306'52	86,733'73	52,040'23	35'89	6'74	1'00	35'56	
		Kyönpagn ...	1,155'60	15	15	141'16	71'11	212'27	371'08	206'22	577'30	5,197'43	2,928'52	36'82	4'08	1'88	18'36	
		Total	50,469'42	571	668	14,465'05	1,376'12	15,841'47	75,775'27	6,194'24	81,969'51	509,409'31	3,15,951'57	35'21	5'66	1'65	31'38	
	GRAND TOTAL		1,39,027'89	1,390	1,627	35,784'43	1,056'91	36,841'34	1,91,715'25	16,751'06	2,08,476'32	1,389,453'96	8,42,924'28	37'77	5'66	1'63	30'02	

The average rent paid per acre for land actually cultivated is Rs. 5'66. Of the total number of tenants 288 were found who paid no rent. If they are excluded, the tenant-rate per acre is just under Rs. 6 on the whole area hired, the average tenant holding being over 23 acres.

67. The statement below shows the reasons given by landlords for letting their land and the number of years for which it has been let. Only 13'40 per cent. has been let for a longer period than five years. Although only 2'46 per cent. of the landlords are shown as non-cultivators (reason No. 3), reasons No. 6 and No. 10 show that 32'52 per cent. have more land than they themselves can work, and the former reason is suggestive as showing that a landlord class is certainly forming in Thaton district :—

Serial number.	Reasons for letting.	Percentage of cases.	Serial number.	Reasons for renting.	Percentage of cases.	Remarks.
1	2	3	4	5	6	7
1	Sickness or old age of cultivator.	21'58	1	Own land flooded ...	1'84	
2	Death of member of family ...	4'86	2	Own land barren ...	1'78	
3	Not being a cultivator ...	2'46	3	Wishing to cultivate independently, being previously field labourer.	18'13	
4	Holding too small to work profitably.	1'11	4	Wishing to cultivate, being previously a petty trader.	2'76	
5	Land mortgaged with possession and leased by the mortgagee.	'87	5	Own land sold because of debts...	2'89	
6	Owner wishing to trade ...	19'12	6	Own land mortgaged with possession.	2'89	
7	Death of cattle ...	1'17	7	Separating from parents and setting up house.	4'24	
8	Cattle sold on account of poverty.	6'03	8	Own land let because far from house or because its position is considered unlucky.	3'69	
9	Inherited land ...	'93	9	Just immigrated ...	4'24	
10	Large land-owner ...	13'40	10	To plant nurseries ...	18'81	
11	Wanting to clear new land ...	1'66	11	Rents land not being able to purchase it.	18'75	
12	Heirs (inheriting land) too young to work.	'80	12	Own land not sufficient	11'68	
13	Land distant from house ...	4'00	13	Other reasons	8'30	
14	Other reasons not falling under the above.	22'01				
	Total ...	100'00		Total ...	100'00	
	Land let for five years or more ...	13'40	1	Land rented for five years or more by same tenant.	2'03	
	Land let for less than five years...	86'60	2	Land rented by present tenant for less than five years.	97'97	
	Total ...	100'0		Total ...	100'00	

There are only six tenants altogether: two in Bilin working 7'84 acres pay Rs. 26'78 per acre as rent; in Kyaikto the rate paid is Rs. 7'39 per acre.

CHAPTER III.

PAST ASSESSMENTS AND FISCAL HISTORY.

68. I have found it difficult to obtain accurate information about previous assessments in the Kyaikto subdivision owing to the district boundaries having been changed and the records divided amongst different offices. Revenue was first collected in 1853-54 and the rate was fixed at Rs. 2 per acre. In 1859-60 the rate was in parts raised to Rs. 2-8-0 and reduced in other parts to Rs. 1-8-0 and Rs. 1-4-0 per acre, but which *twins* were affected by these changes I cannot say. In 1863-64 the rate was reduced to Rs. 2, to Rs. 1-8-0 and Re. 1 per acre, and further-reduced in 1864-65, when the highest rate was fixed at Re. 1 per acre. In 1867-68 an endeavour was

made to introduce the lease system, but the Deputy Commissioner reported that "great difficulty was experienced in convincing the land-owners that the new system was more advantageous to themselves than the old one and that it was not the Government alone that would derive the future benefit." Three thousand five hundred and fifty-four acres of paddy-land in Kyaikto subdivision were leased monthly for five years at Re. 1 per acre, while 1,881 acres of garden land were leased at rates ranging from annas 8 to Re. 1 per acre.

In 1871-72 the rates were once more changed, and in 1880-81 a summary enhancement was sanctioned.

69. Before the summary enhancement, rates by circles and not by *kwins* had been in force, and with one or two exceptions the same system was continued. As no detailed inspection of the land was possible, the rates were fixed with regard to the facility for disposal of produce and the general fertility of soils within different circles. In forwarding his proposals, the Deputy Commissioner stated that in 1871-72 the price of paddy averaged Rs. 35 per 100 baskets; since then canals had been opened and, all the southern part of the district having access to the Rangoon and Moulmein markets, the prices ranged from Rs. 60 to Rs. 100 per 100 baskets. He estimated the yield from the best land to be 80—100 baskets and from inferior land 40—50 baskets per acre.

At the same time the Deputy Commissioner proposed that the rate per acre on all gardens should be raised to Rs. 2-8-0. He based his proposals on the price of fruit in the gardens in 1879-80 compared with 1871-72. The prices he quoted were—

		1871-72.	1879-80.
Betel-nut	...	Rs. 50 per 100 viss.	Rs. 90 per 100 viss.
Cocoanuts	...	Rs. 7 per 100.	Rs. 13 per 100.
Oranges	...	Rs. 50 per 10,000.	Rs. 100 per 10,000.
Plantains	...	Rs. 2-8 per 100 bunches.	Rs. 7 per 100 bunches.

The prices in 1879-80 must have been very high if they were correctly quoted. The best sort of plantains may have fetched Rs. 7 per 100 bunches, but it is improbable that the poorer varieties, which are more extensively grown, could have been so valuable. The garden rates proposed were only accepted for three circles—Kyaikto, Bilin and Yinôn.

70. The table below shows the rates circle by circle in force in 1871-72 and the rates sanctioned in 1880-81. The latter rates are shown also in Map No. II.

Circles.	..	Number of <i>kwins</i> .	RATE FIXED FOR PADDY.		RATE FIXED FOR GARDENS.		Miscellaneous cultivation, 1880-81.	Remarks.
			1871-72.	1880-81.	1871-72.	1880-81.		
			Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	
Sittang	...	12	1 8	1 12*	2 0	2 0	1 12	* Five <i>kwins</i> in Sittang were still assessed at Rs. 1-8-0. The number of <i>kwins</i> in each circle shown in column 2 does not correspond with the present number.
Shwehle	...	15	1 8	1 14	2 0	2 0	1 14	
Kyônnapu	...	5	0 8	0 8	2 0	2 0	1 2	
Kyaikto	...	7	1 0	1 0	2 0	2 8	0 8	
Takkala	...	8	1 8	1 12	2 0	2 0	1 0	
Kawkhame	...	8	1 8	1 12	2 0	2 0	1 12	
Kinywa	...	10	1 0	1 0	2 0	2 0	1 0	
Zôthôk	...	15	1 8	1 14	2 0	2 0	1 14	
Bilin	...	8	1 8	1 8	2 0	2 8	1 8	
Bilin	...	5	1 0	1 0	2 0	2 8	1 0	
Yinôn	...	6	0 8	0 8	2 0	2 8	0 8	

The rates on five paddy *kwins* in Kyônnapu circle appear to have been increased to Rs. 1-2-0 per acre at a later date. I have come across no correspondence bearing on the matter, but the alteration first appears in the revenue rolls for 1889-90, when *kwins* in the vicinity of Kyaikto were taxed at this rate.

71. In 1889 there was a holding survey of the Kyaikto subdivision (Laya circle had been transferred to Pegu district previous to this) which resulted in a large increase of area as below:—

						Per cent.
Kyaikto circle	...	...	...	...	...	+ 4'63
Sittang circle	...	...	...	...	...	+ 49'08
Shwehle circle	...	...	...	...	...	+ 107'65
Kyōnpagu circle	...	...	...	...	...	+ 30'33
Bilin circle	...	...	...	...	...	+ 40'41
Zōkthōk circle	...	...	...	...	...	+ 37'75
Kawkhame circle	...	...	...	...	...	+ 67'75
Taikkala circle	...	...	...	...	...	+ 31'61
Kinywa circle	...	...	...	...	...	+ 54'59
Yinōn circle	...	...	...	...	...	+ 22'79

This survey brought in an increase of revenue of Rs. 46,313* on Rs. 1,03,727. Notwithstanding this the Deputy Commissioner proposed to gradually increase the rates to Rs. 2-6-0 per acre on all the *kwins* in Zōkthōk, Kawkhame, Taikkala, Kinywa and Shwehle circles, in eleven *kwins* in Sittang, and in those *kwins* of Bilin circle in which the current rate was Rs. 1-8-0 per acre, as he considered the land extremely rich. The Director of Land Records and Agriculture, on the other hand, thought that the current rates in Shwehle and Kawkhame circles, where the increase by survey was very large, should be reduced. Eventually it was decided that the rates should neither be enhanced nor reduced, and they have remained stationary up to now.

72. The extracts from the thugyi's rolls showing the assessments year by year will be found in Appendix A, Statement VI. Amount of past and expiring assessments. The total amount of revenue, including cess at 10 per cent. assessed in 1880-81, was Rs. 72,904'49. Since then there has been a steady increase year by year with the exception of 1894-95, when, owing to flood, erosion, and cattle disease, there was a drop of over Rs. 24,000. In the following year, however, the revenue again rose and the total amount of the expiring assessment according to the thugyi's rolls is—

						Rs.
Paddy land	...	...	...	...	...	1,80,762'72
Garden and miscellaneous	...	...	...	...	...	13,399'91
Sugarcane	...	...	...	...	...	6,172'07
Total without cess						2,09,334'70
Total with 10 per cent. cess						2,30,268'03

The increase in 17 years is therefore 215'84 per cent. The increase in revenue without cess on paddy-land is Rs. 1,29,221'45 and on garden and miscellaneous land Rs. 10,068'60. The cane land revenue has increased by 161'27 per cent.

The incidence of the present revenue on the settlement area, excluding land held under special terms, is Rs. 1'62 per acre.

73. Statement No. VII of Appendix A shows the number of coercive processes issued for the recovery of revenue during the last four years. The percentage of amount due to revenue total is well under 1 per cent. The highest percentage is, as might be expected, in Sittang circle, the floods there rendering cultivation difficult and often impossible. If remissions had been more freely granted (Statement No. VIII), much land now in the possession of traders might have remained with the cultivators. No remissions at all have been granted in Kawkhame and Taikkala circles, and the people complained about it very much. In those circles there is absolutely no doubt that land with the crops planted out has continually been washed away, and it must have been a distinct hardship to cultivators to obtain neither fallow rate, nor remission of revenue, nor crop.

The percentage of remission granted to total area is '15; to total revenue '63.

* These figures are taken from reports made at the time. The figures in the thugyi's rolls are slightly different.

74. From the statement annexed showing the sales of paddy-land during the last four years it is apparent that, except in Shwehle and Sittang circles, the value of land has remained pretty constant. In Kawkhame circle also the price is lower than it was in 1893, but the land that has been sold is mostly in the dangerous zone near the sea. The value in Kyaikto and Kinywa circles (Rs. 18 and Rs. 21 respectively) far exceeds that in other circles and the reason is not far to seek: the land, formerly unculturable, is mostly good, there is easy access to market, and the revenue rate is absurdly low: 6.56 per cent. of the paddy-land has changed hands during the last four years, while 4.03 per cent. is mortgaged.

Former and present market value of land.

With the exception of Yinôn and Kyônpagu circles, where there is little paddy-land, and of Shwehle and Sittang circles, where the flooded area is large, the land is of greater value than in the adjoining circles of the Thatôn township settled in 1894-95. The highest sale rate in that township was Rs. 11.05, while the average was Rs. 9.45. In Danu and Kadaik circles the value was found to be Rs. 9.92 and Rs. 10.30 respectively as against Rs. 11.23, the average price paid per acre in the next circle of Bilin.

Annual Sales of Land (average of four years).

Township.	Serial No.	Circle.	1893.		1894.		1895.		1896.		Settlement area.	Percentage.	Remarks.
			Area sold.	Rate per acre.	Area sold.	Rate per acre.	Area sold.	Rate per acre.	Area sold.	Rate per acre.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Bilin.	1	Bilin ...	596'38	8'71	684'25	10'19	648'55	14'00	1,001'79	12'02	9,456'93	7'75	
	2	Zokthok ...	836'87	12'99	1,933'24	13'15	1,429'53	12'16	4,581'16	12'39	27,061'47	8'11	
	3	Kawkhame ...	1,350'98	15'51	1,200'93	10'74	1,359'05	12'53	3,552'32	12'18	28,510'96	6'54	
	4	Kinywa ...	645'87	20'00	531'93	21'36	591'75	21'66	943'87	21'14	12,505'63	5'42	
	5	Yinon ...	14'25	2'11	...	...	25'70	77	15'10	3'51	1,023'48	1'34	
		Total ...	3,444'35	14'51	4,350'35	13'02	4,054'58	13'89	10,094'24	13'09	78,558'47	6'98	
Kyaikto.	6	Taikkala ...	314'13	10'03	189'75	9'85	202'41	14'45	787'10	13'33	7,586'57	4'92	
	7	Shwehle ...	675'53	15'05	943'09	11'51	869'43	13'78	3,265'68	8'59	22,367'30	6'51	
	8	Sittang ...	650'86	10'63	475'09	12'15	413'50	10'69	1,228'33	8'04	12,355'33	5'60	
	9	Kyaikto ...	178'36	18'46	169'03	19'59	401'25	12'25	645'30	18'18	7,004'62	4'08	
	10	Kyōnpagu ...	94'80	16'09	24'85	11'27	99'01	3'28	320'89	7'82	1,155'60	11'67	
		Total ...	1,913'68	13'09	1,801'81	12'26	1,985'60	12'37	6,247'30	10'03	50,469'42	5'92	
		GRAND TOTAL ...	5,358'03	14'00	6,152'16	12'80	6,040'18	13'39	16,341'54	11'92	129,027'89	6'57	

• Annual Mortgage of Land (average of four years).

Township.	Serial No.	Circle.	1893.		1894.		1895.		1896.				Remarks.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
			Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.		
Bilin.	1	Bilin ...	111'31	7'28	90'30	11'63	70'24	4'27	473'76	8'51	9,456'93	7'88	
	2	Zokthok ...	458'24	13'75	68'27	11'72	174'67	7'04	1,590'51	8'02	27,061'47	8'49	
	3	Kawkhame ...	103'03	19'41	45'35	8'38	84'08	5'95	355'21	9'19	28,510'96	2'06	
	4	Kinywa ...	...	...	12'53	23'94	86'32	13'21	305'55	12'22	12,505'63	3'23	
	5	Yinon ...	...	...	...	...	...	...	9'25	2'70	1,023'48	'90	
		Total	672'58	13'54	216'45	11'69	415'31	7'63	2,740'28	8'70	78,558'47	5'15	
Kyaikto.	6	Taikkala ...	98'22	8'80	...	...	42'42	48'57	38'29	6'53	7,586'57	2'36	
	7	Shwehle ...	38'08	7'88	116'18	6'46	23'38	17'11	35'01	8'57	22,367'30	'95	
	8	Sittang ...	24'81	32'25	166'54	10'21	31'36	7'97	338'11	10'46	12,355'33	4'55	
	9	Kyaikto ...	...	...	...	...	30'16	3'32	113'67	16'72	7,004'62	2'05	
	10	Kyönpagu ...	...	...	18'96	13'19	...	...	42'10	7'13	1,155'60	5'28	
		Total	161'11	12'20	301'68	8'95	127'32	22'01	567'18	11'09	50,469'42	2'29	
		GRAND TOTAL	833'69	13'28	518'13	10'09	542'63	11'01	3,307'46	9'11	129,027'39	4'03	

75. The statistics which are collected in the camp season are, I am afraid, untrustworthy guides to the value of gardens. In the first place houses are more often than not included

Garden sales.

in the sales, and the exact value of the house cannot be very easily ascertained, especially if the sale occurred three or four years previously. In the next, sales to relations are very common: sometimes a high price is given because the seller is poor, while at other times a man buys from his father or father-in-law at a ridiculously low rate. In Kinywa the hill gardens are of less value than they were, while the price paid for house compounds has increased somewhat. The price of land in Kyaikto circle is high, especially in or near the town, and no doubt both here and in Bilin the value of the land has increased as the town has become larger. There are practically no sales of the valuable betel gardens: they are held by one family from generation to generation and there is no guide therefore to their actual value.

76. As cane land is nearly always sold with a crop planted, the estimated value of the crop has been deducted before the

Cane land sales and mortgages.

figures were compiled. The Kinywa and Yinôn land has now mostly been taken up, and, with the exception of one or two *kwins*, the value may be expected to increase in the next few years. In Bilin I believe the price has been constant for some years, Rs. 8 per *ta*, or about Rs. 23 per acre for unplanted and unprepared land being quoted to me. Mr. Bridges, in his report, stated that the selling price of land appeared to vary from Rs. 25 to Rs. 50 per acre, but he said at the same time that his estimate was a rough one as he had no correct areas to work on.

A large portion, 16 per cent., of the cane land is mortgaged, for the most part to Bilin money-lenders. I did not find that the crop was often mortgaged with the land, though it may be at times. The planters always talked of the price they received in the *kwins*, and I heard of no instance where they had to deliver the sugar at a certain rate to the money-lenders. The plant and cattle, on the other hand, are generally included in the mortgage, and this accounts for the mortgage-rate being higher than the sale rates. The mortgagor was always asked to value the various items included in a mortgage, so that the value of the land might be got at, but the result has not been very successful.

Annual Sales of Land (average of four years).

Township.	Serial No.	Circle.	GARDEN LAND.						MISCELLANEOUS LAND.						SUGARCANE LAND.						Remarks.
			Number of sales in four years.	Area sold.	Price paid.	Rate per acre.	Settlement area.	Percentage of total area sold annually.	Number of sales in four years.	Area sold.	Price paid.	Rate per acre.	Settlement area.	Percentage of total area sold annually.	Number of sales in four years.	Area sold.	Price paid.	Rate per acre.	Settlement area.	Percentage of total area sold annually.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Bilin.	1-5			Acres.	Rs.	Rs.	Acres.			Acres.	Rs.	Rs.	Acres.			Acres.	Rs.	Rs.	Acres.		
		1	Bilin ...	38	49'63	1,416	28'53	84'85	1'46	20	48'79	287	5'88	454'40	2'58	205	948'31	20,067'87	21'16	3,353'41	7'07
		2	Zokihok ...	26	21'35	1,461'50	68'45	125'89	2'36	...	...	...	...	...	...	...	...	...	...	...	...
		3	Kawkhame ...	7	1'99	111	55'78	42'65	1'17	...	...	...	...	...	...	...	...	...	...	...	...
		4	Kinywa ...	146	279'80	7,298'50	26'08	1,921'90	3'64	1	71	50	70'42	13'64	1'30	7	53'16	575	12'70	201'92	6'58
		5	Yiodon ...	96	39'50	1,242	30'80	849'87	'88	1	43	5	11'63	67'03	'16	28	180'55	1,271	7'04	872'80	5'17
Kyalto.	6-10	Total ...		273	412'57	12,129	29'40	3,889'16	2'65	22	49'93	342	6'85	535'06	2'33	240	1,182'02	22,013'87	18'62	4,428'13	6'67
		6	Talkala ...	2	'80	35	43'75	32'21	'62	...	...	...	...	...	...	...	...	...	...	...	...
		7	Shwehle ...	20	17'27	579	33'53	141'94	3'04	...	...	...	...	...	...	...	...	...	...	...	...
		8	Sittang ...	56	193'62	2,758	14'24	384'39	12'55	27	69'30	1,153'50	16'65	715'66	2'42	...	...	...	...	...	...
		9	Kyalto ...	123	96'60	7,206	74'60	714'43	3'38	...	...	...	...	...	...	13	88'21	1,663	18'85	389'96	5'66
		10	Kyönpagu ...	69	114'68	1,939	16'91	1,043'63	2'75	...	...	...	...	...	...	...	...	...	...	...	...
		Total ...		370	422'97	12,517	29'59	2,316'50	4'50	27	66'30	1,153'50	16'65	715'66	2'42	13	88'21	1,663	18'85	389'96	5'66
		GRAND TOTAL ...		543	835'54	24,646	29'50	6,205'66	3'37	49	119'23	1,495'50	12'54	1,250'72	2'38	253	1,270'23	23,676'87	18'64	4,816'09	6'59

Annual Mortgage of Land (average of four years).

40

REPORT ON THE SETTLEMENT OPERATIONS IN THE KYAIKTO SUBDIVISION, SEASON 1896-97.

Township.	Serial No.	Circle.	GARDEN LAND.						MISCELLANEOUS LAND.						SUGARCANE LAND.						Remarks.	
			Number of mortgages in four years.	Area mortgaged.	Price paid.	Rate per acre.	Settlement area.	Percentage.	Number of mortgages.	Area mortgaged.	Price paid.	Rate per acre.	Settlement area.	Percentage.	Number of mortgages.	Area mortgaged.	Price paid.	Rate per acre.	Settlement area.	Percentage.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Bilin.	1	Bilin	...	5	2'02	190	94'06	848'85	'24	3	4'23	115	27'19	454'40	'93	96	654'66	19,625	29'98	3,353'41	19'52	
	2	Zokthök	...	3	1'77	30	16'95	225'89	'78	...	...	...	...	...	...	...	...	...	...	...	...
	3	Kawkhame	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	4	Kinywa	...	4	10'46	195	18'64	1,921'90	'54	...	...	...	...	...	...	...	...	...	...	...	...
	5	Yinön	...	1	'24	10	41'67	849'87	'03	...	...	...	...	...	...	5	22'16	587	26'49	872'80	2'54
		Total	...	13	14'49	425	29'33	3,846'51	'38	3	4'23	115	27'19	454'40	'93	101	676'82	20,212	29'86	4,226'21	16'01	
Kyaikto.	6	Taikkala	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	7	Shwehle	...	2	6'66	200	...	141'94	4'69	...	...	...	...	...	...	...	...	...	...	...	...
	8	Sittang	...	1	10'93	100	9'15	384'29	2'84	...	...	...	...	...	...	...	...	...	...	...	...
	9	Kyaikto	...	4	2'44	164	67'21	714'43	'34	...	...	...	...	...	...	...	...	...	...	...	...
	10	Kyönpagu	...	2	2'09	125	59'81	1,043'63	'20	...	...	...	...	...	...	...	...	...	...	...	...
		Total	...	9	22'12	589	26'63	2,284'29	'97	...	...	...	...	...	...	...	...	...	...	...	...
		GRAND TOTAL	...	22	36'61	1,014	27'70	6,130'80	'60	3	4'23	115	27'19	454'40	'93	101	676'82	20,212	29'86	4,226'21	16'01	

77. The statement below shows the reasons given by the people for selling and mortgaging their land. While owning too much land to work and moving near relations accounts for many of the sales, a very large proportion of the mortgages are made on account of either loss of cattle or purchase of extra animals. Some of these mortgages are made to the Government for money advanced.

Reasons for selling and mortgaging.

Serial No.	Reasons.	PERCENTAGE OF CASES.		Remarks.
		Average annual number of persons selling.	Number of persons mortgaging.	
1	2	3	4	5
1	Poverty caused by reasons other than loss of cattle or failure of crops.	12.79	8.78	
2	Poverty caused by failure of crops	.89	1.01	
3	Poverty caused by loss of cattle and purchase of new animals	4.78	31.76	
4	Being a money-lender or of occupation other than a cultivator	.09	...	
5	Abandoning agriculture	8.67	...	
6	Holding too small	2.81	.34	
7	Inherited more land than he can work	12.09	...	
8	Land barren	1.41	...	
9	Land flooded	.06	.34	
10	Moving near relation	20.43	.68	
11	Sickness or old age of cultivator or family	9.00	2.70	
12	Death of cultivator or member of family	5.39	2.70	
13	Land far from home or other holding	5.20	5.74	
14	Reasons other than above	15.79	45.95	
	Total	100.00	100.00	

CHAPTER IV.

PROGRESS OF THE COUNTRY SINCE THE LAST REVISION OF RATES.

78. The cultivated area during the last 17 years, *i.e.*, since the last revision of rates, will be found in Statement X-A, B, C, of Appendix A. The increase during that period is 89,664.45 acres or 233 per cent. This large increase is chiefly in paddy-land (81,542.62 acres), but the increase under cane has been satisfactory. A decrease in area only occurred in three years (excluding 1881-82, for which the return is not complete), and except in 1894-95, when several *kwins* were washed away, the decrease was small. This does not, however, in any way show that land is not still being carried away. In Kawkhame and Shwehle circles the erosion is continuous, but other land has become culturable at the same time, and there are numbers of people always ready and willing to take it up.

In 1889-90, as mentioned in paragraph 71, there was a holding survey of the subdivision which resulted in a large increase in area over the thugyi's measurements.

79. Statement No. X-E only shows the fallow areas on which fallow rates were allowed and therefore it is no guide to the actual area of land left uncropped. This year, 1896-97, only 37 acres were assessed at the privileged rate, although a large area in Sittang and Shwehle circles is uncultivated owing to the flooded state of the country. It is no doubt difficult at times to distinguish between the non-cultivating speculator and the genuine cultivator, but there were a number of cultivators in these two circles who got little or no return from their land, and the result of assessing them at full rates has been to drive them out and to let in speculating merchants and others. In some cases the land was auctioned in

default of payment of revenue, although there was no "permanent heritable and transferable right of use and occupancy." Mi Bwin of Kyaikto bought a holding in Thabyegôn *kwin* which was thus auctioned for about Re. 1 per acre.

80. The table below shows the difference between the area under cultivation assessed to revenue according to the thugyi's rolls and the settlement survey. In Zôkthôk circle the difference in paddy-land is more than 3,000 acres, but this is mostly caused by men who are clearing new land taking into their holdings larger areas than they have worked before. In Shwehle and Sittang the increase is also large, larger than might have been expected considering that there was a holding survey in 1889-90, but it is a fact that in the flooded *kwin*s cultivators could not point out the boundaries of their holdings, which in many cases have not been worked for some years. They very generally laid claim to large areas covered with *kaing*, and if they could show any proof that they had worked or attempted to work the land, it was entered in their names. In garden land the chief increases are in the hill gardens of Kinywa and Yinôn, where men who owned several gardens often only paid revenue on one.

The land under cane seems to have been well measured except in Kinywa, where the area assessed was too large, and in Bilin, where more than 170 acres escaped assessment. As the Bilin cane *kwin*s are all quite close to Bilin town, this error should not have occurred.

Comparison of assessed areas.

Township.	Serial No.	Circle.	PADDY-LAND.			GARDEN AND MISCEL- LANEOUS.			SUGARCANE.			Brick-field or other lands.	TOTAL AREA.			Remarks.
			Thugyi's area.	Settlement area.	Difference of area (percentage).	Thugyi's area.	Settlement area.	Difference of area (percentage).	Thugyi's area.	Settlement area.	Difference of area (percentage).		Thugyi's area.	Settlement area.	Difference of area (percentage).	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Bilin.	1	Bilin ...	Acres. 8,174'46	Acres. 9,456'93	+ 15'68	Acres. 1,302'64	Acres. 1,303'25	+ '04	Acres. 3,176'04	Acres. 3,353'41	+ 5'58	Acres. '76	Acres. 12,653'14	Acres. 14,113'59	+ 11'54	
	2	Zokthok ...	23,871'90	27,061'47.	+ 13'36	133'65	230'68	+ 72'60	...	...	...	...	24,005'55	27,292'15	+ 13'69	
	3	Kawkhame ...	27,364'92	28,510'96	+ 4'18	...	42'65	...	...	...	...	...	27,364'92	28,553'61	+ 4'38	
	4	Kinywa ...	12,153'99	12,505'63	+ 2'89	1,645'52	1,935'54	+ 17'62	269'57	201'92	- 25'09	...	14,069'08	14,643'09	+ 4'07	
	5	Yinon ...	888'77	1,023'48	+ 15'15	613'80	916'89	+ 49'33	855'33	872'20	+ 2'13	...	2,357'90	2,813'17	+ 15'06	
		Total ...	72,454'04	78,558'47	+ 8'42	3,695'61	4,429'01	+ 19'84	4,30' 4	4,428'13	+ 2'95	'76	80,450'59	87,415'61	+ 8'68	
Kyaikto.	6	Taikkala ...	6,818'46	7,586'57	+ 11'25	9'10	32'21	+ 253'95	...	...	...	...	6,827'36	7,618'78	+ 11'58	
	7	Shwehle ...	17,231'51	22,367'30	+ 29'80	60'09	146'15	+ 143'22	...	...	...	...	17,291'60	22,513'45	+ 30'19	
	8	Sittang ...	10,100'39	12,355'33	+ 22'32	891'88	1,099'95	+ 23'32	6'22	10'34	+ 66'23	...	10,998'49	13,465'62	+ 22'43	
	9	Kyaikto ...	6,820'75	7,004'62	+ 2'69	680'46	719'25	+ 5'70	389'07	389'96	+ '22	1'54	7,890'28	8,113'83	+ 2'83	
	10	Kyönpagu ...	975'45	1,155'60	+ 21'69	910'06	1,047'63	+ 15'11	...	7'49	...	...	1,885'51	2,210'72	+ 17'24	
		Total ...	41,946'56	50,469'42	+ 20'31	2,551'59	3,045'19	+ 15'42	395'29	407'79	+ 3'16	1'54	44,893'44	53,922'40	+ 20'11	
		GRAND TOTAL ...	114,400'60	129,027'89	+ 12'78	6,247'20	7,474'20	+ 19'64	4,696'23	4,835'92	+ 2'97	2'30	125,344'3	141,338'01	+ 12'76	

REPORT ON THE SETTLEMENT OPERATIONS IN THE KWAIKTO SUBDIVISION, SEASON 1909-10.

81. The census statement below shows that between 1881.—1891 the population has increased by more than 28 per cent. The increase in Kawkhame and Kinywa is accounted for by the large area of land which has come under cultivation there within the last 10 years. Taikkala shows a decrease of 50 per cent. As stated in Chapter I, the sea has engulfed nearly the whole of this circle, and the people whose land was thus taken from them moved into the neighbouring circles of Shwehle, Kinywa, and Kawkhame. Kyaikto circle shows an enormous increase of more than 77 per cent. The population of the town itself has increased from about 2,400 to over 5,000; people have moved here from Pegu and Rangoon and there are considerably more natives of India than there were formerly. The land being so rich, and in fact the whole population being so well off, has formed an inducement for others to emigrate to this subdivision. No doubt the immigrants would have been still more numerous if much of the land had not been already taken up by large cultivators.

Comparison of census population, 1881 and 1891.

Serial number.	District.	Township.	Name of circle.	Occupied houses.	POPULATION BY CENSUS OF 1881.										Occupied houses.	POPULATION BY CENSUS OF 1891.										Percentage of increase or decrease.	Remarks.			
					By RACES.											By RACES.														
					Total number of persons.	Burmans.	Karens.	Shans.	Talangs.	Taungtho, Chins and others.	Natives of India.	Total columns 7 to 12.	Difference.			Total number of persons.	Burmans.	Karens.	Shans.	Talangs.	Chins and others.	Chinese.	Natives of India.	Total columns 18 to 24.	Difference.					
													Excess.	Less.											Excess.	Less.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29		
1	Tha-ton.	Bilin.	Bilin ...	1,855	10,490	2,231	2,980	1,393	1,739	1,757	91	10,191	29	2,379	12,160	4,672	4,014	3,112	144	...	25	193	12,160	...	...	+ 15'93	Columns 14, 15, 26 and 27 show the differences between column 6 and the totals of columns 7 to 12 and between column 17 and total of columns 18 to 24.	
2			Zakthok ...	1,067	6,543	1,374	677	216	3,864	160	89	6,380	...	163	1,106	6,658	1,422	575	174	4,317	...	34	136	6,658	...	...		+ 1'75
3			Kawkhome ...	987	6,079	4,084	274	161	1,531	3	22	6,075	...	4	1,737	10,346	2,095	794	71	7,240	...	53	93	10,346	...	...		+ 70'19
4			Kinywa ...	984	5,158	818	1,537	822	1,238	765	8	5,158	30	...	1,957	10,846	4,080	1,467	1,990	1,276	65	29	46	10,846	...	...		+ 110'27
5			Yinon ...	1,660	8,313	921	4,749	122	...	163	3	5,979	...	2,334	2,049	8,514	1,108	6,548	385	432	...	16	24	8,513	1	...		+ 2'41		
			Total	6,573	36,582	9,428	10,217	2,714	8,399	2,848	213	32,813	30	2,790	9,228	48,524	14,277	14,391	5,732	13,409	65	157	492	48,523	1	...		32'64		
6	Tha-ton.	Kyaikto.	Taikkala ...	803	5,164	1,977	21	52	3,091	...	9	5,150	...	14	521	3,440	647	11	4	2,753	5	...	9	3,440	...	...		- 50'11
7			Shweble ...	651	4,078	2,557	66	79	1,331	19	6	4,058	...	20	1,051	6,342	2,737	80	85	3,237	...	17	149	6,205	...	37		+ 55'51		
8			Sittang ...	1,187	7,065	6,415	38	273	90	37	120	7,033	...	31	1,451	7,429	6,627	15	284	184	16	14	285	7,429	...	...		+ 5'15
9			Kyaikto ...	1,067	6,628	5,683	87	809	475	62	103	6,619	...	9	1,284	6,618	3,072	2,558	358	429	...	12	78	6,617	...	1		+ 77'76		
10			Kyaikto palyr. Kyonpaga	...	...	...	...	...	...	...	...	...	...	...	949	5,164	2,712	145	661	789	...	267	528	5,113	...	52		
			Total	4,676	27,764	16,841	3,611	1,339	5,018	1,205	301	27,715	26	75	6,335	34,323	16,877	6,044	1,926	7,895	16	315	1,160	34,233	...	90	23'62			
			GRAND TOTAL	11,249	64,346	25,669	13,828	4,053	13,411	4,053	514	61,528	56	2,874	15,563	82,847	31,154	20,435	7,658	21,304	81	472	1,652	82,756	1	90	28'75			