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REPORT

ON THE

REVENUE SURVEY OPERATIONS

OF THE

LOWER PROVINCES

FROM

1ST OCTOBER 1867 TO 30TH SEPTEMBER 1868.



CALCUTTA :
OFFICE OF SUPERINTENDENT OF GOVERNMENT PRINTING.
1869.

No. 11.

FROM

THE OFFICIATING DEPUTY SURVEYOR GENERAL
AND SUPERINTENDENT OF REVENUE SURVEYS,
LOWER CIRCLE,

To

THE SECRETARY TO THE BOARD OF REVENUE,
LOWER PROVINCES.

Dated, Calcutta, the 27th November 1868.

SIR,

	I have the honor to forward the accompanying report on the
1st Division, Lower Provinces.	operations of the Survey Establishments, marginally
2nd " Ditto.	noted, during the Survey year 1867-68 terminating
3rd " Ditto.	on 30th September 1868, for the information of
4th " Ditto.	His Honor the Lieutenant-Governor of Bengal.
5th " Ditto.	
6th " Ditto.	
Upper Assam or Seebssaugor Topo- graphical Party.	

2. During the past season an area of 6,319 square miles was surveyed in Districts Luckimpore, Seebssaugor, and Kamroop of Assam, the Eastern Dooars of Kooch Behar in the Goalpara District, Cachar, District Palamow of Chota Nagpore, and the Deareh Villages of Districts Maldah, Moorshedabad, Rajshahye, Nuddea, and Pubna. With the completion of the Pubna District the Deareh operations will be closed.

3. The total expenditure, including all contingent expenses, has been Rs. 3,57,251-7-4, which gives an average of Rs. 56-8-7 per square mile, against Rs. 85-12 per mile last season. The results would be still more satisfactory if half of the 2nd Division had not been retained in Bengal in order to survey Barrackpore Cantonment, which in itself cost a great deal of money and added heavily to the average rate of the 2nd Division. In point of fact it may be considered that the 2nd Division had no effective working establishment until strengthened by the arrival of the Barrackpore party on the evening of the 19th January last. As mentioned in the 7th para. of my letter covering my report for 1866-67, Lieutenant Barron was working with a merely nominal establishment, and his small area and increased cost may well be excused under the peculiar difficulties he labored under in the impossibility of obtaining labor for survey purposes in Upper Assam.

4. The demarcation in Assam has been placed under the professional Surveyor working with the District Officer, as arranged according to the rules contained in Resolutions, dated 30th September 1867 and 21st February 1868, promulgated with the sanction of His Honor the Lieutenant-Governor. There was some delay in placing funds for this purpose at the disposal of the Revenue Surveyor, who accordingly had to make immediate arrangements with his professional establishment. The District Officers report that they are well satisfied with the Surveyor's proceedings. By No. 1778, dated 5th June last,

I was informed by the Bengal Government that Rs. 25,850 were placed at my disposal for the purpose of meeting the charges of extra establishment maintained for demarcating in Assam, and I am sanguine that next year the result will be more satisfactory.

5. It is with great pleasure that I bring forward, for the information of your Board, the following table of comparison with last year's work in area and cost :—

Survey Division.	District in which employed.	No. of Village or Waste Land Blocks.	Square Miles.	Expenditure.	REMARKS.
				Rs. A. P.	
1st Division ...	Kamroop ...	337 ^a	1,091	54,125 4 9	^a Inclusive of six river blocks.
2nd Ditto ...	Luckimpore ...	133	513 ^b	58,449 14 1	^b Includes area of Barrackpore Cantonment = 6'28 square miles in 33 blocks.
3rd Ditto ...	Cachar ...	49	904 ^c	52,695 4 6	^c Includes 425'50 square miles of Topographical Survey.
4th Ditto ...	River Ganges ...	1,191	1,346	49,863 1 10	
5th Ditto ...	West Dooars ...	15 and 31 Δ s	141	6,204 4 9	
	Goalpara ...	144 and 55 Δ s	1,356	59,721 15 7	
6th Ditto ...	Lohurdugga ...	253 ^d	613 ^e	48,806 11 3	^d Includes 21 blocks of Hazarebaugh Cantonments.
Upper Assam ...	Sebsaugor ...	49	355	25,636 11 8	^e Includes area of Hazarebaugh Cantonments and environs = 50'93 square miles.
	Total ...	2,171 and 86 Δ s	6,319	3,55,503 4 5	
	Mehalwarry charges ...	...	...	1,748 2 11	
	Grand Total for 1867-68 ...		6,319	3,57,251 7 4	
	For 1866-67 ...		4,523	3,87,852 7 4	
	Difference ...		+1,769	—30,601 0 0	

6. These results have been attained, accompanied by increased power and efficiency; the number of elephants has been increased from 27 to 38; the Upper Assam Surveys have been partly supplied with boats: measures which tend greatly to increase the resources of the Survey. I mentioned last year that His Honor had granted free passages to our Native Surveyors and Measurers; the measure was immediately beneficial, and enabled me to send 90 men to Upper Assam last season. This year the Upper Assam establishments are thoroughly strengthened, more than 200 men having been recruited. I am therefore sanguine that next year the work in Upper Assam under that excellent officer, Lieutenant Barron, will bear favorable comparison, as regards economy in working, with any other Survey. Four elephants have died during the year, and one has been returned to the Commissariat as vicious; she, as well as two out of the four that have died, were amongst the seven sent up last year by the orders of the Board for the use of the Survey in Assam. Of the remaining four, one has never yet done a day's work.

7. The work in Cachar having been finished, the 3rd Division has been transferred to British Burmah. In the appendix to this report I have enclosed copy of the letter No. 2133, dated 1st July 1868, from the Secretary to the Chief Commissioner, British Burmah, on this subject.

8. Arrangements have been made to commence the re-survey of Hazareebaugh on a mile scale, and during this season the completion of Palamow on the scale of four inches to the mile will be effected. I have obtained the sanction of your Board to a re-survey of the villages along the Gya boundary, in which certain discrepancies have been discovered, and require to be carefully examined.

9. During the past year I have visited all my Survey parties in the field and recess, with the exception of the 6th Division. I intended visiting that office also, but an accident to me prevented my accomplishing the trip at the only time when I had leisure for it. In the report on the examination of work of last season—

The 1st Division is not very satisfactory.

2nd „ highly satisfactory.
 3rd „ satisfactory.
 4th „ satisfactory.
 5th „ highly satisfactory.
 6th „ satisfactory.

The Upper Assam party working in Seebaugor has been warned to submit the work in a better style.

10. I am glad to state that at a conference held on the 12th October last, the Board of Revenue expressed pleasure with the manner in which Lieutenant Stewart had prepared his maps and records of area in the Deareh Survey according to present boundaries. Lieutenant Stewart has had a very difficult task. I shall be glad when the Deareh work is finished and can see Lieutenant Stewart at work on a district such as Hooghly or Midnapore, where he will have greater facilities for showing his administrative capacity.

11. The improved style of drawing is well maintained in the maps submitted during the past season to this office; faults are carefully pointed out, and each year the hill drawing is clearer and better.

12. The work done in the Boundary Commissioner's Office is shown in the accompanying letter. I regret to state that the head writer of the office died during the year; his loss is greatly felt.

13. Districts Cachar and West Dooars have been completed during the past season; the cost and area of the work done are shown as follow:—

Districts.	Commenced.	Finished.	By whom surveyed.	AREA IN		Cost inclusive of contingent expenses.	Rate per Square Mile.
				Acres.	Square Miles.		
	Season.	Season.				Rs.	Rs. A. P.
Cachar	1864-65.	1867-68.	N. T. Davey, Esq. ...	1,102,269	1,722	1,51,245	87 13 1
West Dooars	1864-65.	1867-68.	J. H. O'Donel, Esq. ...	1,203,471	1,880	1,11,478	59 4 9

14. I have every reason to be satisfied with the steadiness and good conduct of Messrs. J. P. Adels and A. C. Cunningham, both of whom are hard-working, careful Assistants. Mr. F. W. Kelly, in charge of the Drawing Department, is also an excellent Assistant.

15. I append a list of the Revenue Survey maps which have been published during the past year; and trusting the results will be considered satisfactory by His Honor the Lieutenant-Governor of Bengal.

I have the honor to be,

SIR,

Your most obedient Servant,

JOHN MACDONALD, *Major,*

*Offg. Deputy Surveyor Genl. and Supdt. of
Revenue Surveys, Lower Circle.*

GENERAL REPORT
ON THE
REVENUE SURVEY OPERATIONS OF THE LOWER PROVINCES
FOR
SEASON 1867-68.

1ST DIVISION, LOWER PROVINCES.

ASSAM.

At the close of season 1866-67 so much of District Kamroop as lies north of the
LIEUTENANT BUTTER AND ASSIST- Brahmapootra had been surveyed with the exception of the
ANTS. Northern Dooars. This area first came under the operation
of the survey during the past season. It lies approximately between parallels $\frac{26^{\circ}-45'}{29-30}$ north
latitude and $\frac{90^{\circ}-52'}{91-45}$ east longitude. Work commenced about
WHERE EMPLOYED. the middle of December.

2. In the course of April, the establishment was moved by detachments to Gowhatty
and broke ground in South Kamroop. As usual, much time
REMOVAL TO SOUTH BANK OF and was lost from the delay in obtaining carriage. One main
BRAHMAPOOTRA. circuit No. 12 in the south-west corner of the district was surveyed. Another circuit was
commenced, but left unfinished, and it is probable that the tract in question was so utterly
submerged that all traces of our work have been washed away. Its main circuit lines served
to form a connection between the new work south of the Brahmapootra and Great Trigonometrical
Station Hatimora, the point of origin for the survey.

3. The total area is 1,091 square miles, completed on the traverse system to the full scale
of 4 inches=1 mile; it comprises 331 villages, besides
AREA SURVEYED—ALL VILLAGE WORK. lakhiraj and other tenures.

4. The interior details were measured with the theodolite, angles and distances being
recorded and plotted on to the sheets. These details were
INTERIOR SURVEY HOW CONDUCTED. checked by cross lines of survey, which are said to agree fairly.

* Akchalia H. S.
Sonora H. S.
Lauturi H. S.

5. Three* principal stations of the Assam Longitudinal Series in South Kamroop were closed upon—

G. T. S. STATIONS.				DISTANCE IN CHAINS.		DIFFERENCE.	
				G. T. Survey.	Revenue Survey.	In fms.	In feet per mile.
Hatimora to	...	... { Akchalia	...	1136.37	1136.70	+ 33	1.53
			... { Langturi	...	1093.56	1093.93	+ 37	1.78
Ditto		Sonora...	...	984.78	985.21	+ 43	2.30
Sonora to		Akchalia	...	1024.07	1024.53	+ 46	2.37

Besides the above, two conspicuous objects were noted for future identification, Lama Gooroo Temple in Bhootan territory, Maklee Hill in village Dehinga, Dooar Lookce, South Kamroop a + cut on a rock.

CONSPICUOUS OBJECTS.

6. At the commencement of the field season 1867-68 new rules were introduced for demarcation in Assam, the separate civil establishment being dispensed with. The Northern Dooars were surveyed according to the old thakbust maps. In South Kamroop the villagers put up their own boundary marks, and did it very satisfactorily. No disputes arose about any boundary.

DEMARICATION.

GRANTS AND LAKHIRAJ LANDS.

7. No grants came under survey, and only a trifling number of lakhiraj tenures and Chamooah khats.

ASSISTANCE OF AUTHORITIES.

8. The Surveyor cordially acknowledges the co-operation and assistance received by him from Colonel Hopkinson, the Commissioner of Assam, and Major Sherer, the Deputy Commissioner of Kamroop.

REPORT ON ASSISTANTS.

9. The Surveyor reports himself satisfied with the behaviour of his Assistants, and especially of Mr. Brownfield. During the course of the season the Senior Assistant Mr. Pringle retired on a superannuation pension.

REMARKS ON THE SURVEY.

10. In the course of last field season I visited the head quarters, and the office of Mr. Pringle's camp, and pointed out certain alterations which I considered desirable, and the examination of the work of last season elicited several remarks by which I trust this survey will profit. I was very much pleased to know that there existed the best understanding between the Assistant Surveyor in charge and his establishment. I found the office books kept in a most methodical style. During the past recess Lieutenant Butter has had a very weak establishment of European Assistants, owing to Mr. Pringle's retirement and Mr. Ewing's sickness. He has therefore been delayed in completing his maps of the last season's work. This survey has been below its proper strength throughout the season.

PUBLIC CARRIAGE.

11. During the past year the establishment of elephants on this survey has been increased from 4 to 10. One animal died during the year. After personal experience of the country I am convinced that no full survey party should have less than 12 elephants, out of which number 2 will generally be out of work from sore backs, sore feet, or eating mud. No Executive Officer in Assam who is not a district authority can rely upon obtaining any carriage or coolies when he wants them. All that can be done to render the survey establishments more effective in point of independent movement is economical in its results. It costs more to keep a party halted for a day than to feed an extra elephant for four months. In a country where the rains prevail for eight months of the year, it is especially important to move Surveyors quickly from point to point.

PROGRAMME FOR 1868-69.

12. It is anticipated that the survey of District Kamroop will be finished this season, 1868-69.

2ND DIVISION, LOWER PROVINCES.

LUCKIMPORE IN ASSAM.

13. A weak establishment of this survey of the strength as per margin took the field on the 21st November 1867 in Mouzah Khawang, District Luckimpore, and this small number, occasionally helped by such additions in labor as could be picked up in the villages from day to day, worked on as well as they could until joined on the 24th January 1868 by Mr. Sinclair, the Assistant who, as mentioned in my report for last year, had been detained at

- 1 Assistant Surveyor in charge.
- 1 Civil Assistant, 4th grade.
- 1 Sub-Assistant, 2nd grade.
- 1 Writer.
- 4 Native Surveyors.
- 20 Measurers.
- 5 Burkundazes.

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Barrackpore in order to survey that cantonment, a measure which had been arranged previous to my assuming charge of this office. Mr. Sinclair took up 6 Native Surveyors and 100 men, with which accession of strength Lieutenant Barron was enabled to form two weak camps in the beginning of February 1868. His establishment remained in the field until the end of June, and returned after having completed 507 square miles, on a scale of 4 inches to the mile, of difficult country, where every step the Surveyor takes is costly, through the expense of clearing the dense jungle. Besides the above, the survey of the cantonment of Barrackpore with an area of 6.28 square miles was completed.

14. There were surveyed in Luckimpore 506.99 square miles comprised in 100 separate traverses, of which 10 were in the great mouzah of Khowang, and 90 in 45 villages and 45 grants demarcated by the survey.

The cantonment of Barrackpore was divided into 33 circuits	...	6.28 miles.
Total area surveyed in the season	...	513.27

The cost was as follows :—

	Rs.	A.	P.
Permanent Establishment	34,782	5	1
Local allowances	6,337	13	11
Contingencies	17,959	14	11
	59,080	1	11

The rates are as follows :—

	Rs.	A.	P.
Without local allowances and contingencies, per square mile	67	12	3
Per traversed circuit with local allowance and contingencies	261	8	4
Per square mile	115	1	8
Per traversed circuit	444	3	4

These figures which may be fairly taken for any survey working in jungly country explain the difficulty of comparing the former rates of work, when the first surveys of Bengal, the North-West, and the Punjab were made, with the cost as exhibited at present.

15. Mouzah Khowang, the portion of District Luckimpore which was brought under survey, lies west of Mouzah Jeypore, surveyed in 1866-67 ; is bounded west by the River Brahmapootra, south by District Seesaugor. On the north stretches the unsurveyed portion of District Luckimpore. Khowang is situate between $\frac{90^{\circ} 45' 40''}{01 20 40}$ north latitude and $\frac{27^{\circ} 3' 45''}{27 32 0}$ east longitude. Its average length is 32 miles and average breadth 16 miles. The mouzah was only recently transferred from District Seesaugor to District Luckimpore.

16. No deduction has been made for the cost of purely civil work performed by the Mehalwaree calculators, owing to the duties of the Civil survey establishment having been transferred to the Professional Survey Branch. There was much delay in placing funds for a separate demarcation establishment at the Surveyor's disposal, and throughout the progress of the work all expenses were met out of the professional survey budget. I am glad to report that nearly 200 men have been recruited in Bengal and sent up to Upper Assam during the field season of 1868-69. The Surveyor will be able to form effective establishments, rendering him comparatively independent of local labor, which will result in much cheaper work. Next year the Assam surveys will be made more effective and powerful. At the commencement of last field season the 2nd Division was so weak that it did not deserve to be called a full survey party.

17. Lieutenant Barron hitherto has had great trouble in prosecuting his work ; he is an excellent officer, in whom I have complete confidence ; he possesses the good will and esteem of every official and planter

NATURE OF THE
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in Upper Assam, and now that he can work on almost equal terms, he will turn out large areas as cheaply as work can be done in such a country where every chain of progress involves the cost of two or three men for a day's labor. Throughout the past season he has been careful that the whole of the interiors of villages and grants have been minutely surveyed, all the boundaries of cultivation and waste have been defined, and the streams have been carefully traced up. Old roads and bunds have been traced out through the jungle whenever heard of. The Revenue Surveyor and Assistants personally tested a great deal of the work of the Native Surveyors, and great pains have been taken to render the work complete and trustworthy.

18. Lieutenant Barron reports very favorably of Mr. G. H. Blyth, his Assistant in charge of Camp No. 1. This officer's promotion has been stopped since the year 1863, when the disastrous work in Hazareebaugh was found fault with. I consider that by patient work he has redeemed his character as a careful Surveyor, and deserves the promotion now asked for. Lieutenant Barron reports well of all his other Assistants.

19. The examination of the work of this survey shows that Lieutenant Barron is a careful painstaking officer, who pays strict attention to all orders and enforces them amongst his subordinates.

20. Lieutenant Barron reports that owing to an unusually heavy rainfall in the months of April, May, and June, the country became partially inundated, and the interior details of portions of certain villages and grants whose boundaries and areas had been ascertained, had to be left unfinished, and thus prevented the completion of his records. This work will be taken up as soon as feasible; every endeavour will be made to have the maps completed as soon as possible.

21. Connection was made on the chimney of the Dehing Saw Mills, and its co-ordinates calculated. It is near the Brahmapootra and will be taken up when the Great Trigonometrical triangles have reached that point. All the work is projected on the meridian of Debrooghur Church tower, which will also form a Great Trigonometrical point; so all that has been done is sufficient for the connection and ultimate comparison of the Revenue Survey distances.

22. Is bounded on the south by the Dehing River; west by the work lately completed in Debrooghur; north-west and north by the Brahmapootra; east by a line from the village of "Phu-Kyal" on the Dehing to the site of an old Singphoo Village called Koojoodoo, thence north to the Noa Dehing. The estimated area contains 1,200 miles. If, as appears to be certain, the survey will at last take the field properly equipped with men and elephants, there is every reason to hope that this large area will be accomplished, and the Upper Assam Survey work may be as cheap as it is in Lower Assam. This will be a cause for congratulation.

3RD DIVISION, LOWER PROVINCES.

23. This survey took the field on the 20th November 1867 with an establishment of 1 Assistant, 3 Sub-Assistants, and 12 Native Surveyors, of whom 4 were probationers. This party has been employed for the last three years in Cachar, during which period it has been seldom recruited, owing to the unwillingness amongst Bengalees and up-country men to serve in that province; desertions and deaths had reduced the Survey to 8 Native Surveyors possessing any experience. As it was not possible to take up any large area of cultivated land, the weakness of the Native establishment was comparatively of little importance, because the large area which would be only shown as a reconnoissance survey could only be trusted to English Agency, and was actually done by the Revenue Surveyor himself.

24. The season's work was situated north and south of the Barak River; the latter touched on last season's circuits; the former in the north-east corner of the district touched the North Cachar Hills and Manipore. All grants under cultivation were to be surveyed, and all unopened grants for which the grantees offered to provide labor for the purpose of clearing lines; this, however, did not occur in a single instance. To meet professional wants the different tea gardens were connected by traverse lines. Special traverses were made of the Barak and Jereee Rivers, which form the boundary on Manipore, and a reconnoissance based on triangulation of the South Cachar Hills in the Dullesur valley was completed as far as practicable. During the past season the work in Cachar has been completed.

25. The area surveyed was 903.73 square miles, of which 425 miles were topographically surveyed; the cost of this work was nearly equal to that of the more detailed survey of the grants owing to the extravagantly high rates of pay demanded by the boatmen and axemen for proceeding into the interior; the average cost of the work was Rs. 58-4-11 per mile, against Rs. 160-0-10 in 1866-67. The general results of the work in Cachar during the past four years have been as follows:—

SEASON.	Area in Square Miles.	Cost, including contingencies.		Cost per Square Mile.		REMARKS.
		Rs.	A. P.	Rs.	A. P.	
Portion of 1864-65	242.53	12,194	6 4	50	4 6	
1865-66	263.51	36,338	0 3	137	14 5	
1866-67	312.51	50,017	12 3	160	0 10	
1867-68	903.73	52,695	4 6	58	4 11	
	1,722.28	1,51,245	7 4	87	13 1	

26. A vast forest tract interspersed with small patches of cultivation and dotted over with tea gardens. The great difficulty chiefly lay in procuring labor; heavy rain and continued sickness, which induced desertions, formed the chief obstruction. The fear of being surprised by hostile Looshaiees was a chief cause of the unwillingness to serve us evinced by the Cacharees who worked as line-cutters and coolies. I believe that the continued presence of the Surveyor and all the Assistants when in the field mainly contributed to keep up the constantly renewed establishment. During the season operations were twice at a stand-still from continued rain, once for 20 days in November, and again for 13 days in April—an immense injury to the success of such a short field season as can be conducted in Cachar, where the regular rains set in early.

27. Ten large triangles emanating from the Great Trigonometrical Survey Towers Murpsuta, Salama, and Ramphan were thrown across the district from the Khieboonda Hills on the east to the Chat-terchoora Hills between Cachar and Sylhet on the west; the series being carried along this western range to Kaortilla, about 8 miles north of Gooturmookh, at the junction of the Gootur and Dhullessur Rivers.

28. The Surveyor reports that extreme jealousy regarding his proceedings was evinced by the Looshaiees, and he anticipates the destruction of all our stations. The survey of the frontier between Cachar and Manipore along the Barak and Jereee Rivers was done by Messrs. King and Lane, and occupied them the whole season; the cost amounted to Rs. 5,800, for which no absolute area was obtained for the credit of the survey and cheapness of its work. The Department Public Works built two pukka pillars for future identification, one near the source of the Jereee River and

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another at the mouth of the Tepai. It is to be hoped that they will be connected on in the Topographical Survey of Manipore to be undertaken by Captain Godwin Austen, to whom the necessary maps and data have been forwarded.

29. As in previous seasons, the survey and thakbust maps differed in almost every particular. Every boundary as shown on the professional maps has received the formal sanction of the Deputy Commissioner.

DEMARCATON.

The district was just demarcated in 1862-63, and when the survey commenced operations in 1865, the thakbust establishment had left the country, and every vestige of field boundaries had disappeared. During the years 1865-66-67 every effort was made to find the boundaries,

Letter No. 338, dated 28th August 1867, from J. W. Edgar, Esq., Officiating Deputy Commissioner of Cachar, para. 2nd.—These unopened grants are situated in the great trackless forests which form the northern and southern extremities of the district. Many of them are miles away from any habitations, and it is possible that some of them have never been seen by the grantees or their representatives here. I have reason to think that many of these grants were applied for on the description given to the applicant by some Kookee or other savage who had been sent out to hunt for unappropriated forest land, and that when Ameens were sent out by the Collector to survey the lands, they found themselves unable to penetrate the thick jungle, and they put together maps of the lands applied for from the information supplied by the savages, supplemented by the natural features (if any) that they had met with in searching for the land. I am inclined to suspect that in many instances the demarcation Ameens did little more than copy these imaginary settlement maps.

as shown in the original thakbust maps, but in the absence of natural features and permanent marks, these boundaries could not be traced. It was impossible to reconcile the boundaries. Grantees have in all cases of doubt readily accepted the professionally surveyed boundary, which was established with the concurrence of the

Deputy Commissioner. The result of the operations in Cachar prove that it was waste of time and money in demarcating previous to survey. To illustrate how absurdly the work was

	Area granted.	Area surveyed.
3. Chundepore ...	2,652	5,101
99. Goonrah ...	2,287	3,868
111. Labac ...	1,991	1,347
162. Claverhouse ...	2,955	3,926
195. Rajpat ...	398	250
198. Kutterail ...	1,864	1,247

done, I append in the margin the areas granted and the areas as surveyed of a few grants, which it was supposed had been defined for survey as shown on the settlement maps. Nothing can more clearly prove how impossible it was for the grantees to define their proprietary rights. Re-

garding the difficulty of building permanent marks, extracts have been made from the Surveyor's report, and are shown in the narrative of this survey's proceedings.

30. Mr. Davey reports favorably of his Assistants, especially of Messrs. Swiney and Smylie, who went through all the hardships inseparable from survey work in the swamps of Sylhet, and did their work cheerfully and vigorously. He is pleased with Messrs. King and Lane; he also recommends Mr. Bolst, his Office Assistant, for promotion, as he has been 17½ years in the Department, and is now in the receipt of only Rs. 150 per mensem. This salary, however, is the highest rate granted to Office Assistants, and without orders from Government on the matter as a special case, it is impossible to reward this Office Assistant, who is a really deserving man.

REPORT ON THE ASSISTANTS.

31. The Surveyor states that "all the details in the plains and cleared portions of grants have been filled up to margin." The interior work was personally examined by the Surveyor and his Assistants, all omissions supplied, and the streams traced up as far as possible; if they could not be traced, their probable courses were dotted in to distinguish them from streams actually surveyed. "In the uninhabited wastes covered by a succession of hillocks and low hills enveloped in jungle with interlying marshes through which neither man nor beast could find their way, a survey of any kind was not to be obtained at a reasonable cost. No attempt has been made to delineate in the maps by conventional signs the nature of these portions, but a note has been recorded descriptive of the tracts shown as forest jungle."

DETAIL SURVEY.

32. This establishment has now been transferred to Pegu (British Burmah) to finish the work from which M. O'Donel was withdrawn in 1864.

4TH DIVISION, LOWER PROVINCES.

33. This survey, composed of an establishment indicated in the margin, commenced

- 1 Surveyor.
- 1 Covenanted Assistant.
- 5 Uncovenanted Sub-Assistants.
- 1 Office Assistant.
- 4 Draftsman.
- 7 Computers.
- 19 Native Surveyors.

work on the 1st December 1867, according to the programme mentioned in para. 64 of the Annual Report for 1866-67, to survey the Dearch lands of Moorsshedabad, Nuddea, Rajshahye, and Pubna, which was completed up to the Pubna boundary, a length of 144 miles, leaving about

50 linear miles to complete the Dearch Survey operations. Field work continued until the beginning of June. A few parties were out till the middle of July.

34. The total area amounts to 1,346 miles, at a cost of Rs. 49,866, inclusive of contingencies, which gives a rate of Rs. 37-0-9 per mile. The

AREA AND COST.

work was done in 781 traverse circuits at a rate of Rs. 41-4-7 per circuit. These results may be considered satisfactory. On such work the absolute area of the river and its wastes of sand give large area, without additional labor, at comparatively small cost. Without contingent expenses the cost was Rs. 30-10-6 per mile.

35. To mark the outer line of tri-junctions selected for permanent demarcation, and prove

PERMANENT TRI-JUNCTION PILLARS AND THAKBUST DOCUMENTS.

its agreement with the boundary shown in former surveys, brick pillars are to be built as follows:—

	Number.	Built.
Msoorshedabad	137	2
Rajshahye	254	0
Nuddea	78	76
Maldah	89	48
Pubna	144	83

The pillars will be entered on the plans with an explanatory note that they were not erected at the time of survey. The thakbust documents were, with a few exceptions in the case of villages submerged by the rise of the river prior to survey, and six villages altered in appeal during the recess season, returned to the Settlement Officer signed as correct by the Surveyor.

36. The work was projected on seven main circuits, commencing from a station of last year's

MAIN CIRCUITS 21 TO 27. DEAREH SURVEY.

work on the Bhaugulpore boundary down to the Pubna District. The work averaged a width of 9 miles, and was checked by 23 observations to test the meridian. Notwithstanding these precautions a blunder made in the main circuit work of No. 26 seriously retarded the operations of this survey, rendering revision of main circuit work and re-survey of village boundary work necessary.

37. The survey of the Rajshahye Division was determined on too late to allow the Ameens

DEMARCATON AND ALTERATION OF SYSTEM OF SURVEY.

preparing much ground before the arrival of the survey. It had been resolved to abandon the boundary survey of all lands unaffected by the river, and the Ameens had been ordered to merely demarcate the Dearchs, and the one set of adjoining villages whose landward side would be found, by existence of tanks, temples, sites, and other permanent points, to be unaltered since last date of survey; it being left to the Surveyors to determine the basis or main circuit line on which the tri-junction points suitable as sites for the pillars noted in para. 35 should be erected; within this limit all the permanent marks and Great Trigonometrical Stations would be shown; thus there was no difficulty in incorporating the new survey with the old, and the expense, litigation, and dissatisfaction which would be incurred by the survey of the intermediate village boundaries would be avoided, as well as great chance of discrepancy with former maps. Authority for this change is shown in the letters marginally quoted and supported by this Office.

No. 27, dated 5th December 1867, from the Commissioner of Bhaugulpore, to the Secretary, Board of Revenue, Lower Provinces.

No. 5036 A, dated 20th December 1867, from the Officiating Junior Secretary, Board of Revenue, Lower Provinces, to the Commissioner of Bhaugulpore.

No. 6038 A, dated 20th December 1867, from Board of Revenue, to Deputy Surveyor General.

38. During the summer I inspected the office of this survey. I had to remark upon the field books and the style in which the field plans are executed; though dirtily drawn, many of them evinced that trouble had been taken, and the ground gone over conscientiously. Lieutenant Stewart is a clever young officer, and he will improve his field work. His maps are always very well finished up and drawn. His work has not been so easy as simple district survey work; and I think he deserves credit for the way he has performed his task. The Board of Revenue have expressed themselves pleased with the way in which the village work and the detailed statistics of area, as well as the record of the boundaries as shown by former and present survey, have been prepared for the Settlement Officer. The working of Act IX has always been a most unpopular measure, and this has been one of Lieutenant Stewart's difficulties to contend with in his work.

39. Comparison with Great Trigonometrical results :—

NAMES OF GREAT TRIGONOMETRICAL STATIONS.	Direct distance from Great Trigonometrical Survey.	Direct distance from Revenue Survey.	Error of Revenue Survey.	Error per Mile.
	Feet.	Feet.	Feet.	Feet.
Dilalpur to Sundarpur	60736.7	60578.1	— 158.6	13.8
Sundarpur to Madabpur	61486.9	61527.9	+ 40.9	3.5
Madabpur to Debipur	47324.0	47374.8	+ 50.8	5.7
Debipur to Murcha	57313.9	57272.8	— 41.1	3.8
Average where the error is plus ... ..	...	...	...	4.4
Ditto ditto minus ... ..	...	...	...	8.9

40. During the season a survey of the cantonments of Berhampore was completed on the scale of 16 inches to the mile. Plans of the city and civil station of Bhaugulpore and civil station of Rampore Bauleah, 16 inches to the mile; plan of city and fort of Monghyr, scale 10 inches to the mile; all these maps have been drawn in a style suited for reproduction by photography.

41. Lieutenant Stewart reports that he is well satisfied with the manner in which his Assistant Lieutenant Cowan has worked and perfected himself in knowledge of his duty; he reports well of Mr. David, and the Sub-Assistants generally, who did all the principal field work, and surveyed check lines across the interior detail work with satisfactory results.

42. During the present season, 1868-69, the Surveyor will take up the Deareh survey through District Pubna, and detach an establishment early in the field season to commence the survey of the Panchannogram estate.

43. The estimated area in District Pubna is 500 square miles, which will complete the Ganges Deareh's survey.

5TH DIVISION, LOWER PROVINCES.

44. This establishment took the field on the 19th November 1867, charged to finish the survey of the West Dooars, and, if possible, complete the East Dooars of the Goalpara District. The tract surveyed is bounded on the north by Bhootan, on the south by the Goalpara District, on the west by the Rydak River in the Kooch Behar District, and on the east by the Bijnee Dooar of Goalpara. The heavy rain and accompanying sickness

Revenue Surveyor	Mr. J. H. O'Donel.
Assistant	Mr. J. Pickard.
"	Mr. H. Walsh.
"	Mr. T. D. Moran.
"	Mr. G. H. O'Donel.
27 Native Surveyors.	

compelled this party to leave the Dooars on the 25th May. I regret to add that a very promising Sub-Assistant, Mr. H. Walsh, died on the 24th April. Many deaths also occurred amongst the Native establishment.

45. The area within the main circuit traverses amounts 1318.77 square miles, and outside it is 178.70, making a total area surveyed of 1497.47 square miles, at an average cost of Rs. 44-0-4 per mile, against a cost of Rs. 55-10-2 for last year, when an area of only 1035.89 was surveyed. The total cost has decreased 1,033 in permanent establishment, and increased 9,326 for contingent expenses; the chief causes being on account of line clearing, which amounts to 3,436, and keep of elephants 3,919. The total cost has been Rs. 65,926-4-4, but the work is cheaper and the area larger. I think that the results may be considered satisfactory. Mr. O'Donel is a very careful Surveyor, who is eminently adapted for such work as he meets with in Kooch Behar, which is carried on under great disadvantages in a country difficult of access, where almost every yard has to be cleared; for, of the total area surveyed, barely 1 mile in 28 is under cultivation.

46. Large tracts of jungle and forest, divided into 159 traversed circuits, whose boundaries were demarcated by the Surveyor's establishment. It was most difficult to move about the country; the march from Aleepore to Huldeebaree, only 21 miles, occupied the establishment 6 days; the road was impassable for bullocks and carts, nearly all the bridges over streams impassable from depth of puddle and water, had been carried away, and had to be filled up with fascines to admit of the carts passing over them. As this was on a made road it is easy to imagine what the country was. For the interior detail work, lines were cleared along the course of the streams. The maps show a great deal of detail. Along the base of the hills below Bhootan the streams were traced as far as the ground permitted, and the lower ranges of hills and their spurs were sketched in from intersected points by Mr. Pickard, the late Mr. Walsh, and Mr. Moran. Throughout the operations the want of a sufficient number of measurers was much felt. The country being so uninhabited, provisions were scarce and had to be carried.

47. The Surveyor reports that "masonry platforms have not been erected at any triple junctions of villages for want of material and labor; mounds of earth have been raised for the present. The ground answers well for permanent marks, if made 12 feet square and 6 feet high.

"The boundaries taken up were ready for survey generally a month in advance of the professional work.

"The comparison of thakbust maps with the professional survey was satisfactory. All boundaries which differed were revised from time to time as the work was compared in the field."

48. The cost of line cutting in these jungles is so heavy that there is a tendency to run check lines along the course of roads, which detracts from their value; lines were taken through the lands of 19 villages with satisfactory results. A continuous check survey could not be made except at a great cost.

49. The positions of 18 remarkable objects have been laid down. Two G. T. Stations, Bhaokmori and Bhoirab, have been connected with main circuit No. 3, and Narikola G. T. Station has been connected with main circuit No. 6.

MAPS AND RECORDS.

50. The Surveyor has prepared maps on the scale of 1 mile to the inch in duplicate—

An index map on the scale of 4 miles to the inch in duplicate.

A plan of the civil stations of Dhoobree on the scale of 8 inches to the mile, and copies in triplicate for the civil authorities.

Six maps of the Bhootan boundary for Executive Engineer's Department.

in addition to the Atlas Sheets in duplicate on the scale of 4 inches to the mile.

This Surveyor submits all his records in a very satisfactory manner.

51. I regret to state that Mr. O'Donel reports unfavorably of Mr. Pickard, who has been warned to be more obedient. I must add that the area surveyed by Mr. Pickard is second only to Mr. T. D. Moran.

REPORT ON ASSISTANTS.

Of the other Sub-Assistants the Surveyor reports favorably. I inspected this establishment during field season and found the work well advanced.

52. Next season this establishment will complete the Eastern Doors of Goalpara, and commence the Revenue Survey of Kooch Behar, taking the talook as the unit, and showing the boundaries of all its contained jotes, if they are demarcated by pillars, which can be readily taken up. No delay will be permitted, and if the jote boundaries are not up, the survey on the full scale will be continued over the area of the mouzah.

PROGRAMME FOR 1868-99.

6TH DIVISION, LOWER PROVINCES.

53. This establishment (composed of according to the margin) left Hazarcebaugh on the 5th and 13th November 1867, and commenced their work in Pergunnah Palamow of District Lohardugga on the 20th of the same month. Field work was continued pretty successfully up to the 15th April, when fever commenced to appear amongst the survey parties, who were all withdrawn by the 27th of the same month. The work lay along the Kunhur River, which forms the western boundary of Palamow.

Captain J. Sconce, B. A., Revenue Surveyor, 3rd grade.

ASSISTANTS.

Lieutenant E. W. Samuels, S. C., Assitant Revenue Surveyor, 1st grade.

Mr. J. Todd, Sub-Assistant, 1st grade.

„ W. R. Vynll, do., do.,

„ G. H. Cooke, do., 2nd grade.

„ L. G. Hill, do., do.,

28 Native Surveyors and Computers, &c.

54. The work of this survey has been exceedingly costly as compared with most other surveys in India, but contrasts favorably with those of last year; the total cost was Rs. 48,848, against Rs. 51,811 of last year: the following table of comparison illustrates the difference:—

AREA AND COST.

SEASON.	Number of Villages.	Area in Miles.	Cost per Mile.
1866-67	103	216	240
1867-68	232	562	67
Difference	+ 129	+ 346	- 153

Taking this into consideration, the rates are Rs. 79-10-7 per mile on 612-65 square miles, which is far better than the rates tabulated above, which I have taken to show the difference on the village work only. The work is most laborious and searching, and was executed under obstructions from fever and numerical weakness in the Native establishment, which always causes work to be costly. The original board plans show that no pains have been spared in supervision to effect a careful survey through the Native agency. Besides the above, the survey of the

cantonment of Hazareebaugh and surrounding country for a distance of two miles in each direction has been surveyed.

55. The demarcation maps of circuits 7 and 8 had been prepared by scale and compass.

DEMARCATION.

In those two circuits the comparison was very satisfactory, but in main circuit 9, the thakbust maps are mere eye

sketches, showing the boundaries in a most distorted manner and giving no useful comparison with our work. These sketches were more fully reported upon in connection with main circuit 5A of 1866-67. The exterior boundary of Pergunnah Palamow is well marked by masonry platforms along tri-junction points, which have been invariably adopted as survey stations; the intermediate bends are marked by small heaps of stones, some of which have disappeared, as they were originally too small to remain permanent. Considerable differences are to be seen in the Gya boundary, as surveyed in 1866-67, and on the old survey maps. The thakbust maps were worthless for actual comparison. A recommendation was made that this boundary should be relaid by a competent demarcation officer, which duty has been most efficiently performed by Extra Assistant Rakhal Dass Haldar, with one or two exceptions, which have been brought to the notice of the demarcation officer. Masonry platforms have been built at all the village tri-junctions.

56. The area to be completed on the full scale of 4 inches to the mile in Pergunnah

AREA REMAINING FOR SURVEY AND WORK OF PRESENT SEASON.

Palamow is about 180 miles, and the re-survey of the villages bordering on Gya will probably give another 150 miles. I

attach peculiar importance to this work. The re-survey on the mile scale of the Hazareebaugh District will also be commenced this season.

57. The Surveyor reports very favorably on his Assistants:—Lieutenant Samuells, who

REMARKS ON ASSISTANTS.

exercised an excellent control over his camp: Mr. Todd, who, as usual, worked very hard, and has done a very large share of

the office work. Mr. Todd is recommended for promotion to the junior grade of Civil Assistant. Mr. Gordon Cooke is a very promising Assistant. Both Messrs. Vyall and Hill have done good work in field and office.

1

This survey has been strengthened by the appointment of Mr. Hexter and the transfer of Mr. R. C. Ewing from the 1st Division. Under Captain Sconce's vigilant supervision I think Mr. Ewing will give more satisfaction than he did in Assam.

58. In the Appendix will be seen a short description of the country surveyed.

UPPER ASSAM TOPOGRAPHICAL PARTY.

59. This party took the field towards the end of December 1867, with instructions to

STRENGTH OF THE PARTY.

- 1 Assistant in charge.
- 1 Sub-Assistant.
- 19 Native Surveyors and Computers.
- 126 Measurers.

finish the eastern portion of the Seesaugor District; but after the frontier lines had been cut, the Assistant was requested by the Deputy Commissioner not to survey in that direction, as the Nagas had lately shown signs of uneasiness in making a raid against the police. This necessitated a

change in the measures originally adopted.

60. The total area surveyed was 355 square miles, at a total cost, including contingencies, of Rs. 25,636-12, at a rate of Rs. 72-3-5 per mile, which is Rs. 8 per mile in excess of last year's rate. This

AREA AND COST.

may be partly accounted for by the time lost in changing the field of operations as mentioned in the above paragraph. It must also be remembered that no separate charge has been incurred by Government on account of a demarcation establishment.

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61. Twenty-one mouzahs and 15 grants were demarcated. The boundaries shown have all been approved by the Deputy Commissioner and accepted by the grantees. The Surveyor states that the tri-junction points have all been well secured under the orders of the District Officer. Stout posts banked up with earth marked all the bunds on the boundaries of grants. Lakhiraj lands have been defined in a similar manner, and separately surveyed on the scale of 8 inches to the mile. In this party, as well as the other Assam surveys, all expenses connected with demarcation were defrayed out of the professional survey budget. For the next season this party has a sum of Rs. 5,850 placed at its disposal to entertain a separate establishment for defining and cutting boundary lines.

62. The Assistant in charge reports that his work during the past season has been very carefully done and mapped. This is a matter of congratulation, as the remarks from this office on the work of 1866-67 are very severe, and I shall be glad if they are more favorable next season. I had the pleasure of looking at this establishment during my tour in Assam in February last. It has been necessary to reduce the Sub-Assistant Mr. Lynch three steps in his grade, and Mr. Talbot has been requested to have his main circuit work projected from the same meridian as has been adopted by the 2nd Division, so that all the plotting of the Upper Assam work may be uniform. This work is to be ready by the 15th January.

63. Scarcity of labor and delays from rain and sickness are the obstructions to continued success in surveying Assam. The people are lazy and independent. No man works readily except when in want of a little ready money to buy opium, or else to obtain it in daily payment instead of money.

64. The Seesaugor District will be probably completed in the present field season; the area remaining for survey is estimated at 450 square miles.

65. The Surveyor reports favorably of his Native establishment.

66. I have repeatedly mentioned in my remarks on Assam Surveys that survey operations in Assam are liable to considerable delays from the difficulty of getting willing work. I know that on one occasion a whole body of coolies who were carrying a Sub-Assistant's baggage threw down their loads in the middle of the jungle and left the Assistant alone in the forest. The wages demanded are sometimes exorbitant. On one occasion it cost me more than Rs. 20 to carry about 300 pounds weight of luggage 16 miles. On another occasion I found all my property thrown on the river bank, and that the boat and boatmen had disappeared. This was merely because I was one day late in meeting my boat at the indicated spot. If an Englishman accompanied by servants is so treated, it is easy to conceive how difficult it must often be for a Native Surveyor to obtain from the people of the country that support and co-operation which is so essential to speedy and cheap survey work. I am doing my utmost to render my surveys as independent of all local aid as I possibly can make them. I feel certain that such is the surest method of obtaining the cheapest work in such an exceptional country as Assam.

JOHN MACDONALD, Major,
Offg. Deputy Surveyor Genl. and Supdt. of
Revenue Surveys, Lower Circle.

SUPDT. OF REVENUE SURVEYS' OFFICE,
LOWER CIRCLE; }
Calcutta, the 27th November 1868.

APPENDIX.

Description of country surveyed in District Kamroop, Season 1867-68, by LIEUTENANT A. D. BUTTER, Assistant Revenue Surveyor in charge 1st Division, Lower Provinces.

The Northern Dooars of Kamroop are chiefly flat ground, covered with tall grass jungle, with patches of cultivation; the further south, the more cultivation. Northern Dooars of Kamroop. They are bounded on the east by the Bor Nuddee, which divides Kamroop from Durrung; on the west by the Monas, which is the boundary of Goalpara; on the north are the Bhootan hills, which in Dooars Baskah and Gurkulah rise from the flat plains in a sufficiently sharp and distinct manner. In Bijnee and Chappagooree the ground rolls considerably under the foot of the hills, so that the edge of the plains is not so easily defined. There is a fringe of forest along the foot of the hills, as a rule, and scattered patches of the same in the Dooars; of which, however, they are not the characteristic feature.

2. An imperial road connects Tumbolpoor, where there is a police station, with Gowhaty; and it is continued to Durrunga, whence a path leads to Diwangiri. Roads. There is also a district road from Tumbolpoor to Bojalee.

3. A large number of streams, issuing from the hills, flow irregularly from north to south across the country. Most of these have this peculiarity, that in the dry season, near the point where they debouch from the mountains, they suddenly become dry, the river apparently sinking into the ground. The bed, however, becomes full of water again a mile or so further on, and thence flows steadily all the year round. During the wet season, the whole bed of the stream is full; and it is observed that, as the dry season approaches, it is the most southern point of what eventually is the dry portion of its bed which becomes dry first; the water flowing a shorter and shorter distance from the north, until frequently all its course visible outside the hills is quite dry. The points from which the various streams re-fill their beds are defined in villages Takee and Jobla by a broken strip, or series of patches of forest. Of the rivers which flow continuously all the year round may be mentioned—first, the Monas, the boundary between Kamroop and Goalpara, which is very deep and rapid at the driest season as it enters the plains. The banks are 20 feet high in many places to the south. Boats cannot be taken up very far in the cold weather on account of bars formed by boulders of rock. Next, the Bor Nuddee, the boundary between Kamroop and Durrung, which issues from the hills a deep powerful stream. It becomes shallower a little further down. Also the Jungtung, Chuktung, Rabung, and Deo Matee or Maree. The last-named encounters some white clay in its course before entering the plains; and, after a fall of rain, is milky in appearance, whence its name. All the lime procurable in the district comes from the bed of this stream.

The rivers which are lost for a portion of their course in the dry season, and re-appear, are as follows:—The Shajung or Jhajunga: in the dry season, a short distance before the river issues from the hills, the water disappears; re-appears a mile from the hills, in a forest, and from that point flows throughout the year. The Tangun Maree: dry all dry season. The Takee Nuddee: empty water-course in dry season as far south as Bheblabaree village, where water appears in the bed, and flows all the year round. The Teklye Nuddee: no water where it first appears among the hills; but flows throughout the year in the plains. The Agrun Nuddee: flows down to nearly 4 miles from the hills, where it disappears in dry season. The Simboon Nuddee: no water in dry season in the slopes at foot of the hills. The Pohoomara: no water in dry season until 5 miles from the hills. But it is such a fine stream that boats of 500 maunds navigate it up to the Dooars. The Moro or Soroo Monas: as the foregoing. The Dijuma Nuddee: water flows a very short distance into the plains in February; but re-appears much further south. The Pugla Deea, in Sobhunkhata village: water flows from the hills as far as Nilajee, about 5 or 6 miles, and disappears there in dry season; re-appears at Oodla village, 3 or 4 miles further south, whence it flows in a good stream throughout the year into the Chawkhawa. The Durrunga Nuddee: in April, water was found half a mile into the hills, but the bed was dry a considerable distance to the south; after which the water breaks out, disappears once more, finally re-appears and continues to flow. The Dowkoben

Joolee: dry in February and March. The Matunga Nuddee: water in the hills all the year round, but dry in the dry season for 2 miles after issuing from them; after which it re-appears and flows in a steady stream. The Baldee Nuddee: wet throughout the year about the hills; dry for some distance to the south in the dry months.

The following rivers have further peculiarities: The Dirong Nuddee, in Dihra village; in January, water flows plentifully at night and less during the day. In March dry during the day but flows at night. The Bor Nuddee, in village Burya or Boira, flows in dry season from about 4 P. M. to about 4 A. M., near foot of the hills; a little further on, it becomes dry altogether. A nameless stream, east of the Seemajhora, flows from about 4 or 5 A. M. to about 7 or 8 A. M., and from 4 or 5 P. M. to 7 or 8 P. M.; or in the cool of the morning and of the evening: dry, rest of the day. This is from a point a quarter of a mile within the hills; up to which point the river runs continuously.

4. In these Dooars are found the Sassee tree, the inner bark of which, when prepared, is used to write upon, and resembles stout vellum, very white. Also the Oodla tree, the bark of which makes excellent rope.
Remarkable trees.
 5. The Dooars swarm with animal life: tigers, bears, leopards, buffaloes, deer, pigs, &c. Along the forest strips skirting the hills, elephants, and towards the Monas, rhinoceroses.
Wild Beasts.
 6. The cultivation in the southern parts is extensive, and consists, as in the rest of Kamroop, of paddy chiefly; also sugar-cane, mustard seed, and kullai. But further north paddy becomes a precarious crop on account of wild elephants. Last cold weather one village was simply abandoned because of the destruction they committed. The little cultivation there is to the north is chiefly mustard. Villagers living near the hills grow cotton on the slopes.
Cultivation in the Dooars.
 7. The chief road to Diwangiri goes up to bed of the Durrunga Nuddee. From Sobhunkhata, there are two paths, one to the north-east to Diwangiri; one north-west, to Oorungaon, a Bhootea town, residence of a Soobah. From Madla, a considerable Bhootea village, a path comes down the Agrun Nuddee, which it first touches at the point of its junction with the Kyrong Nuddee. Another path is along the Shajung Nuddee.
Paths into Bhootan.
 8. The Bhooteas from Madla bring down large herds to graze on the Agrun and Kyrong Nuddees. They bring with them cotton, chillies, a red rock salt, rubber, bees' wax, yak's tails, munjista (a red dye, from a creeper), excellent radishes, and Indian corn. They take back with them paddy, rice, and earthen pots. They carry their merchandise either on small donkeys or mules, or on their own backs.
Traffic with Bhootan.
- At Soobhunkhata (whence two paths go into Bhootan) there is a large village deserted during the rains, and occupied during the dry season by 2,000 or 3,000 trading Bhooteas, who come about January and leave about April. They bring with them gold, silver, lead, daws (knives) with straight blades two feet long, kookrees, blankets, dogs, ponies, mules, cows, yak's tails, coarse colths, chillies, precious stones, and strange to say, pearls and mother o'pearl.
- Inhabitants of the Dooars also visit the hills for trading purposes; and bring back with them chiefly rubber, honey, and frankincense.
- The Bhooteas cultivate the slopes of their hills with cotton, a little paddy, and vegetables of many kinds, all growing promiscuously in the same field. They visit Hazoo and Gowhatty. Every year a large number travel to the former place, the temples of which have sacred associations for them as well as for the Hindoo.
9. The portion of the Dooars of South Kamroop which came under survey, and which includes Dooars Lookee, Bokoo, Bongaon, &c., is bounded on the south by the Cossyah hills, detached portions of which crop up here and there over the plain in bold masses of granite (gneiss) and basalt.
The Southern Dooars.
 10. An imperial road, which is at present however only in an embryo state, and a telegraph line pass through this tract, connecting Gowhatty with Goalpara.
Road.

11. The chief streams are the Singra and the Bokoo, which both rise in the hills, apparently very close to each other. The latter flows directly north, and falls into the Doolsee; the former turns to the west, and, entering the district, flows parallel with the Bokoo, and falls into the Brahmapoetra, west of Nagarbera hill. The Bokoo receives no tributaries in its course through the country surveyed. The Geezang debouches from the hill south of Lookee Purbat, flows eastward, and falls into the Singra, west of Hahim village. The Singra and Bokoo Nuddees both flow all the year round, but are only navigable during the rains, when boats are taken up as far as the Geezang, to Hahim Hât, to carry away the produce of the hills. The beds of these streams, which are broad as they issue from the hills, become half that width further north, as they pass through a hard clay soil. Hence when, after heavy rains, the rivers rise rapidly, the narrow channels are filled immediately and the country inundated.

12. The northern portion of the Southern Dooars is low and marshy. The marshes extend further south in Mouzahs Khareeja, Bokoo and Dooar Bogae. Dooar Lookee, and the south portions of Dooars Bokoo and Bongaon are intersected by innumerable tortuous sunken strips of land, called holas. These peculiar features of the country are about 10 or 15 feet below the general level, and vary up to 60, 100, or even 200 yards in width. Paddy is grown in these holas only and no where else. The soil in these low strips is a black clay with a slight admixture of sand.

Bekalee Moneah is thickly populated and very highly cultivated. The land is devoid of the peculiarity above referred to.

The highlands present the appearance of gently sloping hills, covered with short grass, with here and there a village and a grove of laka, mango, jack, and betel-nut trees, beautifully picturesque. The soil is a stiff red clay: that on the hills to the south and east of the country under survey is the same, with a slight crust of vegetable mould.

Many portions of the hills surveyed are cultivated by the Garrows, and produce remarkably fine crops of puddy, Indian corn and rape seed, the last of a superior quality; also vegetables of many kinds all sown indiscriminately at once and in one field, and each crop gathered as it becomes ripe. Towards the south of the country surveyed there are sâl forests.

13. Lac in large quantities is produced from the laka tree, which is not easily distinguished from the ordinary pepul. There are two crops in the year, in November and May. The price on the spot is Rs. 8 to 12 per maund. The villagers usually receive advances from the mahajuns to cultivate it. It is sent to Calcutta.

In the dry season the natives dam up the hill streams for the purpose of irrigation, and also to catch fish, which they effect by poisoning the water. Konee-bees, bakral, ja-berree, beehoo-galee, and seejoo, which are all the pounded bark of trees, are used for this unpleasant purpose. The two first named can poison a wide extent of water, as far as fish are concerned. They are not considered injurious to man.

The inhabitants of the country included in this circuit are Kacharees chiefly.

14. The Garrows, on the hills to the south, bring down lac, bees' wax, chillies, rubber, cotton, turmeric, ginger, potatoes, mooga, silk cocoons, Indian corn, and daws. The Garrow daws are very peculiarly shaped, somewhat like a Greck ç. They take back paddy, cows, salt, beads, &c.

15. The Hâts in the southern Dooars surveyed are—Boro Para, on bank of Bokoo Nuddee, Saturday; Deej Bogae, near Demoolee Nuddee, Wednesday; Shakmooree, Tuesday; Hakim Hât, on the Singra, Tuesday; Joypoor, Thursday; (Joypoor is a police out-post); Nalapam (northern), near the Singra Nuddee, Wednesday.

Extract from Annual Report of the Operations of the 2nd Division, Lower Provinces, Revenue Survey, by LIEUTENANT W. BARRON, Season 1867-68.

23. There being no separate demarcation establishment there exist no legalised thakbust maps for comparison. The boundaries of mouzahs, as laid down by the civil establishment before its withdrawal, have been followed, unless in the case of disputes. The grant boundaries

No demarcation survey, and consequently no comparison of thakbusts.

when surveyed have been compared with former surveys and sketches whenever they were forthcoming. Most of these, however, are too vague and indefinite to be of much value as a means of comparison. It may be said that grant boundaries are now determined for the first time.

Maps and records of the season. 24. The following are the maps and records for the season :—

For Deputy Surveyor General's Office.

Thirty-two sheets, scale 4 inches=1 mile, with index map of sheets, and alphabetical and statistical registers.

- 1 Map, scale 1 mile = 1 inch, containing Main Circuits Nos. 2 and 3.
- 1 Ditto ditto ditto ditto exaggerated.
- 1 Ditto ditto ditto Main Circuit No. 4.
- 1 Ditto ditto ditto ditto exaggerated.
- 1 Index map of season's operations, scale 4 miles = 1 inch.
- 1 Volume Main Circuit Traverse data with Azimuth calculations.
- 1 Volume Village and Grant Traverse data.
- 1 Volume Purlals.
- 1 Volume Field Books of Main Circuits with indices.
- 1 Volume ditto of Villages and Grants ditto.
- 1 Volume Field Plans with indices.
- 1 Map of Station of Barrackpore, scale 12 inches = 1 mile.
- 1 Ditto ditto Debrooghur ditto.

For the Collector of Luchimpore.

Thirty-two sheets, scale 4 inches = 1 mile, with index map of sheets, and alphabetical and statistical registers.

There are 45 grants in this season's work ; of their boundaries three sketch maps are prepared : one for signature by the Collector and Grantee, and copies for the Collector and Grantee to show the position of the boundary pillars, total 135 sketches.

28. Main Circuit No. 2 contains 155.94 square miles in one mouzah, Khowang. In propor-

General description of Main Circuit No. 2, Khowang.

tion to the area the cultivation is small, and is chiefly confined to the tract lying around Khowang and extending along the Dehing Mathaoree or bund towards the south-west, and to the tract in the south-east known as Moran. It is bounded on the east by the Sologooree Allee ; on the south by the Deeroi Nuddee, the District of Sebsaugor, and the Atabaree Allee ; on the west by the Dimoo Nuddee ; and on the north by the Dehing River. The Sologooree Allee, the Moree Allee, the Bor Phookun Allee, the Hansua Boorwah Allee and the Boree Dehing Mathaoree traverse the mouzah from south-west to north-east. The Lakhoa Allee and the Bamun Baree road traverse the mouzah from west to east. Of these roads, the Sologooree Allee, the Dehing Mathaoree or bund, the Bamun Baree road and the Lakhoa Allee only are kept open, the others are broken and overgrown with jungle. Towards the north-eastern portion of the mouzah rises the Dimoo Nuddee, which receives the waters of the Tilvee Nuddee near the middle of the mouzah. It is navigable only in the rains, and for small canoes. The Deeroi which falls into the Desang Nuddee is navigable beyond the point where it is crossed by the Sologooree Allee. The place of most importance is Khowang, on the Dehing River. It comprises several small villages under this name. Here is situated the principal factory and godowns of the Dehing Tea Company, " Limited."

29. Main Circuit No. 3 contains 202.27 square miles in 26 mouzahs. It is bounded on the

General description of Main Circuit No. 3, Debrooghur.

east by the Rajghur Allee ; on the south by the Dehing River ; on the west by the Brahmapootra, and on the north by the Myjan Nuddee. The Debrooghur and Sebsaugor road traverses it from north to south. This road was formerly known as the Borboorwah Allee, it has lately been widened and raised, and is the grand trunk road of this part of Assam. The Sessa Nuddee traverses this circuit from east to west, and is navigable beyond the point where it is crossed by the Jeypore road ; owing, however, to the very tortious course of its channel it is not much used as a means of communication. The south-western portion of this circuit is in heavy jungle and swampy. The most of the villages lie to the north-east corner and especially round Debrooghur, where the ground is well cultivated.

The station of Debrooghur is the principal place in this main circuit. It is both a military and civil station. The military station is garrisoned by Her Majesty's 42nd Assam Light Infantry of following strength:—European Officers 8, Native Commissioned Officers 16, Non-Commissioned Officers, Rank and File, 896; of these, however, there are on an average at Debrooghur only European Officers 6, Native Commissioned Officers 10, Non-Commissioned Officers, Rank and File, 572, the rest are engaged on out-post duty; the Assam Mountain Battery of Artillery of 6 Guns, 2 European Officers, 2 Native Commissioned Officers, 71 Non-Commissioned Officers and Gunners. Debrooghur is the principal Civil Station of the district and contains the Jail, Treasury, School, and Post Office. It is the head quarters of the Luckimpore Police force, the reserve being on an average, 1 Inspector, 2 Sub-Inspectors, 7 Head Constables, and 100 Constables. There is a large bazaar in Debrooghur which does a good deal of trade with the tribes surrounding the Luckimpore District. The only practicable means of communication with Bengal is the Brahmapootra river, either by country boats or by steamer. Steamers from Calcutta or Kooshteah arrive and depart on an average once a fortnight. The principal imports are coolies and rice for tea factories, and piece goods for the bazaar. The chief export is tea.

30. Main Circuit No. 3 is bounded on the east by the Tingrai Nuddee; on the south by the Dehing River; west by the Rajghur Allee; and on the north by the Seasa Nuddee and the Suddia Allee. It is traversed from north-west to south-east by the Debrooghur and Jeypore road on which are situated the principal villages. The places of most note are the Modharkhat and Tengakhat pothars or rice-fields, around which lie several vilages. At Tengakhat there is a weekly market, resorted to chiefly by the tea garden coolies in the neighbourhood; and a thannah occupied by a Sub-Inspector, 1 Head Constable, and 6 Constables. The Tingrai Nuddee is navigable for some distance by small canoes.

31. The two greatest difficulties to be contended with in Assam, and which affect the out-turn of area, are the heavy jungle, the impossibility of procuring local labor. A large jungle cutting establishment is necessary to overcome the former, and I trust the concessions made to the surveys in Assam, of passages up and down the river from Kooshteah for Native Surveyors and measurers, will enable us to be independent of local labor. With a full establishment and a large jungle-cutting staff the area this season ought to be more favourable than last season.

Extract from Annual Report of the Operations of the 3rd Division, Lower Provinces, Revenue Survey, by N. T. DAYEY, Esq., Season 1867-68.

3. * * * * *

The whole of the labor required for clearing circuit lines, throughout the uninhabited jungles, had to be provided for, independently of grantees who, for obvious reasons, could not or would not afford aid in measurements for purely professional purposes made beyond the boundaries of their grants. Each main circuit round, averaging about 1,000 lines, occupied a tindal's party and 25 coolies between two and three months to clear the jungle. Without guides or routes of any kind through the jungles it was work of no ordinary difficulty to select the most practicable line of country for chain measurements, and to clear lines over or round a succession of hillocks with intervening swamps. This has been accomplished at the cost of time and labor, and, I regret to add, the health of those employed on the work. Sometimes the tindal's party of 25, after a few days' work in the jungles, returned into camp prostrated by fever, and fresh coolies, at enhanced rates of wages, had to be obtained to replace them; but more frequently a death, or a single case of supposed cholera, or foot-prints, assumed to be of hostile Looshais, caused a panic, and every hill cooly to abandon the tindal and his clashy, who had to find their way back by retracing their steps along the circuit lines already cleared. These frequent interruptions to progress from sickness and desertion, and the necessity of sending provisions for parties working away from villages, or allowing them to return every week or ten days from the jungles to the nearest market for supplies, necessarily protracted the work of clearing lines for survey, and increased the averages of cost and rate of the season's work

7. * * * * *

The advantage of regular and straight boundaries that can be readily identified is obvious, and it is to be regretted that Grantees, during the first two seasons the professional survey was in progress in the district, were not permitted to adopt straight lines for boundaries instead of wasting time and labor in the futile attempt to relay the thakbust boundaries through the heavy forests of Cachar. Grantees wholly failed to discover the intricate boundaries assigned to their grants in their pottahs, and on the thakbust and settlement maps, for reasons explained in para. 20 of this report. I have to call attention to para. 7 of my last Annual Operation Report, and to state that the boundaries of grants in District Cachar, as shown on the thakbust maps, have not been surveyed, as they could not be traced; but that the professionally surveyed boundaries have been accepted by the Deputy Commissioner in supersession of the thakbust and settlement records, and a note to that effect, with number and date of the Deputy Commissioner's letter, will be found on each of the Atlas Sheet Maps.

11. * * * * * It was not practicable during the preceding

Topographical Survey.

* Sookpial on the Gooter River.
Vanleuin on the Sonai River.
Vampoolal on the Tepai River.

(without which the Deputy Commissioner declared that no attempt should be made), for the proposed reconnoissance by myself of the hill tract they claim and hold, lying between Cachar and Chittagong. It is needless to repeat the successive steps and persistent efforts that were made from October to March

† No. 8, dated 22nd Nov. 1897.
" 16, " 10th February 1898.
" 19, " 10th March "
" 25, " 22nd April "

Rs. 3,000 placed at my disposal for the purpose by Government. The negotiations with the Looshai tribes were wholly under the control and direction of the Deputy Commissioner, and were conducted by Manjee How, a Kookee Chief settled in Cachar, and his muntrees or priests. Whilst these efforts to conciliate the Looshai tribes were in progress, I personally carried on a series of seven large and three smaller triangles up the Dhullessur valley, making a reconnoissance of the country on the basis of the triangulation, and I thus mapped 425 square miles of country lying between the Chatterchoora and

‡ At the junction of the Dhullessur and Gooter Rivers.

§ Letter No. 54, dated 9th April 1868.

Langtai hill ranges, and extending south to Gooter Mookh[‡] where I was in hopes of meeting the Looshai Chief, Sookpial, or his representatives. What occurred on my arrival there will be understood from the letter (appended §) I addressed to the Deputy Commissioner, when I found that to advance further would be at considerable risk to my unarmed survey party from savages who, in spite of their promises, had shown by overtacts their hostile intentions to Bungi-keep, the bearer of a friendly message and liberal offers to secure their aid. The difficulties that had to be overcome in carrying out the triangulation and reconnoissance, without a guide or route of any kind, through an uninhabited hilly country enveloped in jungle, can hardly be exaggerated. Without shelter, and in the very lightest marching order for want of sufficient coolies, myself and party traversed these hills for three months, cutting every step of our way, and wandering for days to find a practicable route through the hills and jungles. That my party, notwithstanding the false alarms and constant dread of an attack, did not desert me, is owing to the fact that the men were as much afraid to return as to advance, believing that hostile parties of Looshais were closely following on our tracks.

12. A detail topographical survey and plane tabling could not be carried out, owing to the physical difficulties and the inaccessibility of the hills with the limited labor and means at my command. Under the circumstances it became necessary to complete simultaneously the angular work and intersections, when once a hill peak had been reached after days of marching in the hills and wading or crossing by frail bamboo bridges made by ourselves, the foul swamps and bogs in the basins between the hills.

13. In the Sonai valley the negotiations with Vampool and Vanulein were wholly without results, as the Chiefs from the outset refused to afford aid, or permit the survey parties to venture beyond some fanciful limit, extending northward to the Police out-posts.

17. * * * * *
The blocks of waste land could not of course be surveyed in much detail, but the streams in them have been traced as far as practicable, and thence their probable courses have been dotted in; and similarly the position of the marshes, on or skirted by the survey lines, have been shown, but their exact extent could not be ascertained, and a note to that effect has been recorded on the sheet maps.

18. The value of the professional maps is fully appreciated in Cachar, where hitherto every thing connected with boundaries and areas have been hazy and founded on wild guesses, or on Ameen's maps that have proved worse than useless, as they have only tended to mislead. Full advantage has been taken of the facility offered to grantees to obtain copies from the Revenue Survey Office, and 72 plans containing 108 grants have been supplied on the requisition of grantees, from time to time, during the past two seasons.

20. District Cachar was demarcated in 1862-63-64, and when I commenced the survey of tea grants in December 1865, the thakbust establishment had left the district, and not a vestige of the field demarcations was to be found. Grants had been bought and sold with the boundaries and areas assigned to them at time of settlement, and which the thakbust records were supposed to represent; and grantees in their own interests, and the Deputy Commissioner to protect the Government interests and the revenue, deemed it indispensable that these boundaries according to thakbust maps should be discovered, and professionally surveyed. Every effort was made during season 1865-66-67, with the aid of Ameen employed privately by grantees, and the assistance of the Deputy Commissioner acting as demarcation officer, to find the thakbust boundaries; but in the absence of natural boundaries and permanent land marks these boundaries could not be traced, with the thakbust map alone as a guide, through the jungles of Cachar. Grantees pointed out for survey boundaries in the field that they had laboriously traced, and which they supposed were in accordance with the thakbust and settlement maps of their grants, but on comparison the survey map, as a rule, was as unlike the thakbust map as it well could be, and differed in size, position, and inflexions of boundaries. * * * *

22. The grants surveyed this season with the exception of five of them (likely soon to be abandoned by the proprietors) were defined at time of survey at the triple-junction of boundaries by stone slabs. Masonry pillars should be early substituted for the sand stone slabs, which, though good for a time, are very liable to be destroyed and might easily be removed. I have repeatedly* called attention to this matter of permanent boundary marks, the want of which, as results prove, has been an obstacle to the progress of the survey and rendered the demarcations of the Civil Officers perfectly worthless for any purpose whatsoever.

In 1864-65 four out of the seventeen grants were found defined by permanent marks. In 1865-66, of the 67 grants surveyed, only 16 were found marked by pucca pillars or cairns of stones. In 1866-67, 40 out of 56 grants were defined at time of survey by pillars or stone slabs. Subsequent to survey, and on the repeated requisitions of the Civil Officers, grantees put up stones to define their grants, and Mr. Smylie was deputed in May 1867 on the intimation from the Deputy Commissioner that boundary marks had been erected to verify the positions of these marks, but he was only able to map the pillars in 14 grants of the previous season's survey, in which traces of the lines cleared and survey stations could be found. When it is remembered that the rapid growth of jungle in one year completely obliterates all trace of the clearings of the previous year, it will be understood that to verify the position of pillars built two or more years subsequent to survey would necessitate actual re-surveys and clearings of jungle along the boundary line, the labour for which was not procurable from the grantees, and certainly could not be obtained by

* Annual Reports.
1864-65, para. 22.
1865-66, " 18.
Memo. dated 10th May, 1866.
Do. " 26th July "
Letters No. 26, dated 22nd April
1867, and No. 27, dated 1st
May 1867.

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myself, even supposing the charge might be borne by Government. The penalty for not building permanent boundary marks is that such marks should be erected at the expense of the planters by the Civil authorities; but this penalty could not be enforced in Cachar, and I believe it was proposed by Major Stewart to invite tenders from professional builders as he could not find men and material in Cachar for building according to his estimate 1,200 masonry pillars. I append a statement of the grants defined and remaining to be defined by permanent marks:—

Grant Nos.	List of Grants undefined.	Grant Nos.	List of Grants undefined.
188	Balleshurpar.	63	Chundee Ghât.
90	Degabhur.	62	Ditto.
198	Katirail.	145	Davisabad.
195	Rajput.	97	Digur Doysapor.
214	Nutwanpoor.	148	Khaspoor.
264	Dhulchurra.	145	Taligram.
229	Karaballa.	205	Digsah.
278	Bykuntpoor.	191	Doolargram.
180	Chndronathpoor.	228	Ebadatpoor (included with Bundoo).
28	Degur khelma.	31	Jeereeghat.
89	Goomrah.	150	Joypoor.
17	Kaleeharee.	A	Joypoor (included with Scotpoor).
51	Konapara.	274	Patheemara.
30	Kurkurria.	191	Scotpoor.
225	Megenta.	228	Selamatpoor (included with Bundoo).
123	Nig Kallain.	147	Shal gang.
113	Noon Churra.	167	Jenningpoor.
275	Sona Churra.	209	Digur Shalchapa.
230	Thalkur.	16	Miradari Lot (included with khas land).
12	Etturkandy.	11	Fee simple.
106	Buddurpoor.	248	Gungapoor.
178	Abong.	18	Meerooa.
139	Jatinga.	83	Ruttanpoor.
170	Libbarbund.	68	Shircorepoor.
224	Moolydhur.	156	Bagobehar.
235	Modhoorapar.	130	Loharbund.
104	Trittio Doodputtee.	175	Sonarbund.
60	Wittington.	129	Sona Churra.
144	Badreepar.	124	Dinonathpoor.
23	Ditto.	31	Rata Churra.
227	Badlichurra (included with Scotpoor.)	246	Kullian Churra, and
118	Barthal.	241	Holmesdale.
114	Bundoo.		
82	Chundee Ghât.		Total Grants undefined, 65.

Grant Nos.	List of Grants defined by Pillars, &c.	Grant Nos.	List of Grants defined by Pillars, &c.
21	Dulledhur.	25	Bengalnugger.
3	Chundepoor.	49	Bengalpoor.
13	Balleekandy.	36	Ballydrain or Koya.
67	Chapra or Sreekona.	103	Appin.
137	Massimpoor.	B 106	Arnakhall.
73	Doodputtee.	221	Sildoobee.
95	Doloo.	32	Menipore.
132	Digur Burkhola.	162	Claverhouse.
127	Oroonabund.	5	Silcooree.
128	Larsinga.	.....	Borakni.
20	Estelpoor.	.....	Irungmara.
75	Arcotipoor.	102	Chungdoar.
27	Sonpoor.	2	Kuttle.
B 227	Allipoor.	83	Ruttunpoor.
A 227	Pallor bund.	1	Burra Shungun.
183	Digur Majargram.	6	Maines.
97	Ditto Doyapoor.	35	Rosekandy.
112	Lallung.	59	Shererpoor.
111	Labac.	208	Menipoor.
110	Tarapoor.	262	Menipoor.
228	Narainpoor.	157	Torotozabaree.
201	Alnee.	7	Mohunpoor.
117	Phoolerthol.	174	Civita Vecchia (including Shircorepoor and Boropoor).
190	Jheereeghat.	29	Choto Jalinga.
19	Cossipoor.	60	West Jalinga.
92	Indroghur.	77	Dourbund.
78	Digur Sreekona.	93	Noarbund.
16	Chincooree.	72	Joggeerbund.
81	Elgin.	1	Boro Jalinga.
22	Bagolaghat.	7	Fee simple (Maines).
118	Alumbagh.	74	Bennakandy.
27	Chungdoar.	171	Telka.
40	Robertabad.	119	Chinjoor.
143	Buudookmarra.	210	Hateekooree.
152	Lotonpoor.	88	Bowalin.
154	Kala Churra.	165	Delarkoosh.
85	Emilypoor.	255	Doobeedhur.
61	Jaffurbund.	260	Minadhur.
8	Coocheela.	125	Hasioorah.
11	Borachang.	134	Roopa Churra.
277	Buudookmarra (included with Buudookmarra).	155	Alexandripoor.
47	Mona Churra.	142	Cantley Churra.

Grant Nos.	List of Grants defined by Pillars, &c.	Grant Nos.	List of Grants defined by Pillars, &c.
169	Kookee Churra.	256	Diglee.
42	Boorun Churra.	256	Kumrungabund.
200	Durrighat.	18 M	Moiner Khall.
208	Jhalna Churra.		Total grants defined... .. 93
.....	Lallamookh.		Total grants undefined by boundary pillars ... 65
18 and 17	Balladhun and Kunnuckpoor.		Total ... 158

I beg to append a detail statement of the several pukka pillars built for purely professional purposes to mark circuit triple junctions, and Azimuth stations. A similar return will be sent to the Deputy Commissioner of Cachar, with a request that the necessary precautions may be taken to have these several survey stations preserved.

List of Survey Pillars in District Cachar.

Names of Pucca Pillars.	Village in which situated.	Pergunnah in which situated.	REMARKS.
Pillars between Cachar and Jynteah.			
No. 1	Nutwanpoor.	.....	These nine pillars were built to define the boundary between Cachar and Jynteah by Major Stewart, Deputy Commissioner.
" 2	Ditto.	.....
" 3	Grant Nutwanpoor.	.....
" 4	Ditto.	.....
" 5	Ditto.	Jellalpoor.	
" 6	Ditto (On the Rutta Churra).	.....
" 7	Grant Jellalpoor or Bellessurpar.	.....
" 8	Great Rutta Churra.	.....
" 9	Ditto.	.....
Buddurpoor, P. P.	Grant Buddurpoor.	Sorrispoor.	
Juttunga, P. P.	Poorandurpoor (north bank of the Barak River and at its junction with the Juttunga River.)	Burkhola.	
Silchar, P. P.	Ombecapoor (in Dr. Barker's compound.)	.....
Lukhipoor, P. P.	Nij Lukhipoor.	Lukhipoor.	
Aena Khall, P. P.	Grant Aena Khall.	Sorrispoor.	
Claverhouse, P. P.	Ditto Claverhouse.	Chutta Howar.	
Boro Jalinga.	Ditto Boro Jalinga.	Bundraj.	

Statement showing Area and Population of District Cachar.

Main Circuit.	Area of Tea cultivation.		Area of other cultivation.		Area of Jungle, &c.		Total Area.		HOUSES.		HINDOOS.		MAHOMEDANS.		Total Population.	Number of ploughs.	REMARKS.	
	Number of village circles.	...	...	...	...	...	...	...	Pucka.	Kutcha.	Agriculturists.	Non-Agriculturists.	Agriculturists.	Non-Agriculturists.			
1	102	776	3	31,282	3	53,178	3	85,247	2	5	4,631	10,121	2,174	8,314	1,981	21,800	3,883	The Deputy Commissioner of Cachar states that there is in addition to the population here noted— Imported Coolies ... 30,000 Hill tribes ... 30,000 60,000 Population in villages according to Thak-bust returns ... 79,315 TOTAL ... 1,39,315 NOTE.—The number of imported coolies employed in tea gardens has not been given in the above returns, and the number of the hill tribes has been roughly estimated.
2	68	3,089	2	20,088	2	85,937	0	69,965	1	19	4,138	7,685	2,185	9,740	1,180	20,680	3,663	
3	28	2,474	1	5,223	2	35,485	3	43,183	3	16	1,224	3,700	280	1,900	280	6,120	1,245	
4	84	6,010	0	14,769	3	86,086	2	1,06,876	2	13	1,844	3,794	836	4,365	725	9,720	1,815	
5	35	1,381	0	10,360	3	24,367	3	36,109	2	38	1,880	4,340	70	4,245	505	9,100	1,743	
6	66	4,637	2	11,044	1	59,611	3	76,493	3	18	467	515	390	1,270	160	2,335	340	
7	55	7,307	2	7,886	0	73,378	3	88,672	2	10	1,248	2,264	575	3,198	105	6,170	1,130	
8	22	1,216	1	5,689	3	1,05,627	1	1,12,633	2	29	166	2,270	130	785	45	3,230	685	
10	15	1,677	2	...	...	87,763	1	88,440	3	7	...	...	...	...	...	...	...
11	4	153	1	...	...	31,988	0	32,141	1	0	...	...	...	...	...	...	...
12	2	146	0	...	...	35,034	3	35,180	3	0	...	...	...	...	...	...	...
Superficial No. 1 ...	16	1,542	1	...	...	21,861	2	23,401	0	21	...	...	...	...	...	...	...
Jungle Block ...	2	...	...	...	...	31,651	0	31,651	0	35	...	...	...	...	...	...	...
Topographical work ...	...	...	...	...	...	272,320	0	272,320	0	0	...	...	...	...	...	...	...
TOTAL ...	407	30,681	2	1,17,206	1	9,51,503	1	11,02,421	1	13	4	15,598	31,680	6,020	30,755	4,351	79,315	14,700

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Extract from Annual Report of the Operations of the 4th Division, Lower Provinces, Revenue Survey, by LIEUTENANT W. J. STEWART, Season 1867-68.

17. I left Kooshtea (as reported) on 12th April to re-visit Mr. David's camp at Rampore Bauleah. I found Mr. David's work for the Deputy Collector at Bauleah generally complete and perfectly satisfactory. No disputes unsettled, and nothing left to occupy his establishment, but the topographical survey of the strip of country between his unaltered boundaries and the main circuits, and the survey of the civil station of Rampore Bauleah. I completed and signed up the comparisons of area and extracts necessary for the settlement of jumna under Act IX of 1847, and explained the same fully to the Deputy Collector engaged on this work; and after inspecting his field parties and checking some of Mr. David's Azimuths returned to Bauleah, and before leaving, directed the plans and areas to be consigned to Deputy Collector Bhugwan Chunder Sein, as soon as copies of the latter could be prepared, with the view to moving Mr. David's establishment from Bauleah, where they were no longer required, to the assistance of Mr. Littlewood, whose work was still backward. These records were accordingly consigned to Deputy Collector Bhugwan Chunder Sein on the 8th May, when Mr. David moved camp from Bauleah; up to this date Mr. David's Office and the Deputy Collector's being in juxtaposition, access to these records were facile

Facilities afforded the Deputy Collector in using the survey plans.

on the part of the Deputy Collector, so that when it is represented to the Board that actual "delivery" of any part of our field work was not made over to the officers appointed to carry out the adjustments of revenue, it should be coupled with the facts that though actual transfer of the documents from our office to the other had not taken place up to that date, and for which full reasons have been assigned in correspondence as per margin; still that the fullest opportunity was afforded to these officers to avail themselves of such information as the survey could afford by the propinquity of these offices, which was a matter of special arrangement between myself and Mr. King, the Superintendent, for the express purpose, as originally contemplated and proposed by myself, that these field offices should be together to enable the Civil Officers and Survey Officers to simultaneously use and mutually assist each other in the object contemplated, i. e., the utilising the survey documents in the field *pari passu* with the progress of such survey.

No. 59, dated 30th April 1868, from Revenue Surveyor, 4th Division, to Deputy Surveyor General.

No. 52, dated 4th May 1868, from Deputy Surveyor General, to Revenue Surveyor, 4th Division.

No. 85, dated 11th July 1868, ditto ditto.

No. 99, dated 29th July 1868, from Revenue Surveyor, to Deputy Surveyor General.

to the other had not taken place up to that date, and for which full reasons have been assigned in correspondence as per margin; still that the fullest opportunity was afforded to these officers to avail themselves of such information as the survey could afford by the propinquity of these offices, which was a matter of special arrangement between myself and Mr. King, the Superintendent, for the express purpose, as originally contemplated and proposed by myself, that these field offices should be together to enable the Civil Officers and Survey Officers to simultaneously use and mutually assist each other in the object contemplated, i. e., the utilising the survey documents in the field *pari passu* with the progress of such survey.

18. The difficulty of personally supervising the office work in Mr. Littlewood's camp as well as Lieutenant Cowan's, one being on the borders of Bhaugulpore, and the other on the borders of Furreedpore, or nearly, induced me in the commencement of May to combine the establishment at Bhugwangolah, abandoning all hopes of supplying the Pubna work during the field season, and setting Mr. David's establishment to assist Mr. Littlewood in his work. During this month of May the establishment were united under my personal supervision in camp at Bugwangolah, and the village work was completed as far as the boundaries showed agreement with the thakbust plans; differences were found on certain villages, and parties were left in June to re-visit these boundaries. In one large tract it was found that our boundaries were correct, and fresh thakbust plans were substituted by the Deputy Collector; in another place the lands had been submerged by the rising of the Ganges.

Necessity for combining the establishment to supervise preparation of work for Settlement Officer.

Incorrectness of the thakbust plans tested and acknowledged by Civil Officers.

substituted by the Deputy Collector; in another place the lands had been submerged by the rising of the Ganges.

30. Before leaving the field, and as soon as I could satisfy myself that the outer line of tri-junctions selected for permanent demarcation by brick-work pillars or platforms, agreed with that shown in the former survey plans, I sent information to the District Officers regarding them, stating the number in each district, and the sites where the pillars were wanted, also sending Vernacular sketch plans and men to point out the sites where required.

General remarks.

47. I have a few general remarks to offer regarding the season's operations:—

* The difficulty of identifying the thakbust boundaries on the dearehs, after submersion by the annual floods, as previously noticed in this report, as well as my recommendation in last year's annual

report, that the demarcation and survey should be conducted during the same season, led to the alteration in our system of boundary survey that has been followed this season. I believe it is clear that though unforeseen difficulties occurred in getting a rapid adjustment of boundaries so as to enable us to supply the result of our work to the Settlement Officers rateably with progress * * * still that, what has been done, has been, in all respects, preferable to any previous season's work that has been undertaken by the civil and professional departments of the Deareh survey; and that the scheme as proposed by Mr. Money, when Commissioner of Revenue for the Bhaugulpore Division, last November, though not fully carried out in execution, has still worked well and resulted in a gain of at least six months to the Settlement Officers in commencing their investigations.

48. Further, it has so happened that the delay that has been caused in commencing settlement work during the progress of demarcation and survey was of actual value, in allowing the free discussion and reference to Government of many important considerations that, if postponed till after the survey and settlement had proceeded far, might, and probably would, have marred its utility to a great extent, and caused useless expenditure; I will notice a few of these causes as follows:—

1st. It is evident that if subordinate measurements (by which I mean Khusrah and local estimates of value of land dependent on the personal inspection of the ground by Deputy Collectors) had been commenced as soon as survey of a set of villages had been made, and immediate increase or decrease of jumma allotted thereon, some portions of estates (bearing in mind that estates are scattered, some portions of a village appertaining to one estate, and portions to others, the estate being made up of lands scattered through villages in several pergunnahs, adjoining the river), some portions of such estates would be assessed for increase or decrease of "jumma," which afterwards might, and very often would, be cancelled by the result of the assessment on other portions; this would involve great waste of time in execution as well as pecuniary expense, and possibly vexatious litigation to the zemindars, but by waiting until all portions of such estate have been brought under survey; during its regular progress, it can be ascertained without any necessity for local investigations, whether there is any balance increase of area to the estate, and if not, the needless expense and trouble to all parties, caused by the local investigations, can be avoided; should the result show decrease of jumma the zemindar is at liberty to claim it, which for special reasons he will not do.

2nd. The question arose, as to what should be done regarding the assessment of lands in estates which claimed large tracts of the actual navigable channel of the Ganges, as shown in the former survey maps; before this could be settled it was necessary to find out to what extent this state of things existed, and what had become of lands caused by the shifting of the river channel, on the sites thus shown in the maps; this required the survey to proceed to a considerable extent before it could be ascertained, and the importance of this question was such as to cast doubt on the application of the Act under which the survey is working.

3rd. A general appeal against the Act was raised by the zemindars who, thus by the delay in commencement of settlement had time to take their case before higher authority; considering all things, it appears to me that the delay was beneficial.

The causes of this delay it is unnecessary here to enlarge on; they have been fully discussed and reported on in previous correspondence, and explained to the satisfaction of the Revenue Board.

Extract from Annual Report of the Operations of the 5th Division, Lower Provinces, Revenue Survey, by J. H. O'DONEL, Esq., Season 1867-68.

The survey operations of the 5th Division, during season 1867-68, have been carried on in the West Dooars Districts, which has been completed, and in the East Dooars of the Goalpara District. The exterior limits of the tract of country surveyed are as follows:—on the west it is bounded by the Rydak River, adjoining main circuit No. 6, surveyed the previous season, and the Kooch Behar District; on the south by Pergunnahs Ghoorla, Purbutojar, and Khoontaghat of the Goalparah District; on the east by Dooar Bijnee; and on the north by Bhootan. The extreme length is 62 miles east and west, and the extreme

breadth is 45 miles north and south. The area within main circuit boundaries is acres 8,44,013, or 1318-77 square miles, the area outside the same boundaries is acres 114,370 or 178-70 square miles, making up a total area of acres 958,383, or 1497-47 square miles for the season.

2. The tract of country surveyed was divided into six main circuits. Main circuit No. 7 District West Dooars contains the remaining eastern portion of Dooar Buxa between the Rydak and Sunkoe Rivers. The main circuits in the East Dooars of District Goalparah have been numbered from 1 to 5. Main circuit No. 1 includes Dooars Gooma and Repoo with two detached villages of Dooar Buxa, and one detached village of District Cooch Behar. Main circuit No. 2 includes parts of Dooars Sidlee and Cheerung, and extends as far east as the Samoka Nuddee. Main circuit No. 3 includes the remainder of Dooar Sidlee; its eastern limit is Dooar Bijnee. Main circuits Nos. 4 and 5 include parts of Dooar Cheerung immediately at the foot of the Bhootan Hills. Another main circuit has been surveyed, including Dooar Bijnee, but the traverse has not proved.

3. Main circuit No. 7 District West Dooars was surveyed by Mr. Moran, who likewise surveyed part of main circuit No. 4 from E² to O⁷, and part of main circuit No. 5 from Z⁵ to A². Main circuit No. 1 District Goalparah was surveyed from S³ to A³ by Mr. G. H. O'Donel, and from A³ to E² by Mr. Billon. Main circuit No. 2 was entirely surveyed by the late Mr. Walsh. Main circuit No. 3, part of No. 4 from I⁶ to E² were surveyed by Mr. Pickard; he also surveyed the northern sides of Nos. 5 and 6 on the Bhootan boundary. The southern side of No. 6 was surveyed by Mr. G. H. O'Donel, except 9 stations between the Monas River and its old beds on the Kamroop boundary.

4. The field establishment having been made up, my party left Rungpore for the Dooars on Commencement and progress of Cooch Behar and Aleepore was in good order, but further on to Huldeebaree for 21 miles the march occupied six days. This part of the road was not passable for bullocks or carts; it was covered with high grass jungle, the bridges had all been washed away, except two near Aleepore; on one of them there was 12 feet high grass. Many nullahs with deep puddle and water were crossed by heaping up bundles of grass as a footing for animals. The road had to be cleared and sloped before loaded animals could pass. I found it impossible to proceed beyond Huldeebaree before the road was first cleared to Dutma. Messrs. Billon and Moran followed me a march behind as I cleared the road in advance. The late Mr. Walsh and Mr. G. O'Donel, after leaving Cooch Behar cut across country, the latter to Gooma and the former to Dutma. Mr. Pickard left Rungpore on the 24th November last; he proceeded by boat and arrived at Dooar Sidlee on the 17th December last.

Main circuit No. 7, District West Dooars, part of main circuit No. 4 west of the Boro Bhoor Nuddee, and main circuit No. 5 were surveyed and completed by Mr. Moran. It was first arranged to place him with Mr. Pickard, but on his remonstrating against the arrangement, stating that he was qualified to work by himself an opportunity was given him to show his capacity for work. Main circuit No. 1 was surveyed and completed by Messrs. Billon and G. O'Donel. Main circuit No. 2 by the late Mr. Walsh, and main circuit No. 3 and part of No. 4 by Mr. Pickard. The area surveyed by each Assistant is noted below:—

Mr. J. Pickard	...	...	...	...	393 Square Miles.
Mr. B. H. Billon	...	...	...	...	181 Do.
Late Mr. H. Walsh	...	...	...	...	282 Do.
Mr. T. D. Moran	...	...	...	...	457 Do.
Mr. G. H. O'Donel	...	...	...	...	164 Do.

1,497

7. The area surveyed within main circuit is acres 844,013 or 1318-77 square miles, and outside those limits is acres 114,370, or 178-70 square miles, making a total area of acres 958,383 or 1497-47 square miles. The total cost amounts to Rs. 65,926-4-4, or Rs. 44-0-4 per square mile. The increased area is 461-58 square

miles, and the cost is reduced from Rs. 55-10-2 to Rs. 44-0-4 per square mile. The expenditure for 1867-68 has increased Rs. 8,293; the amount for the past and previous seasons is noted below :—

Seasons.	Establishment.	Contingencies.	Total.
1866-67	45,921	11,712	57,633
1867-68	41,898	21,038	66,926
	<u>- 1,033</u>	<u>+ 9,326</u>	<u>+ 8,293</u>

There is a decrease of Rs. 1,033 for establishment; the contingent expenditure has increased under the following heads :—

	Rs.
Coolies for lino clearing	3,496
Camp Equipage	895
Provision Depôts	329
Travelling Allowance	512
Elephants	3,319
Other Items	905
	<u>+ 9,396</u>
Transit of stores	70
	<u>+ 9,326</u>
Decreased charge for Establishment...	<u>- 1,033</u>
Total Rs.	<u>+ 8,293</u>

11. * * * * *

The ranges of hills and spurs have been laid down from intersected points by Mr. Pickard, the late Mr. Walsh, Mr. Moran, and by Laphong and Sewchurn Lal, Native Surveyors. The interior details were taken up carefully.

25. * * * * *

The late Mr. Walsh worked hard and completed the work of main circuit No. 2, and on the 9th April lodged it for examination. Next day he started for Bijnee where he died on the 24th of fever and cholera. The loss of his services has been felt by me during the remainder of the season, for he was equally useful in the field as in office, and could draw well. His memory will be held in kind remembrance by all who knew him.

27. The West Dooars District has been completed during the past season. The following table

exhibits the yearly cost, area, and rate per square mile :—
Survey completed of District West Dooars.

SEASONS.	AREA IN		Cost.	Rate per Square Mile.	REMARKS.
	Acres.	Square Miles.			
1865-66	492,831	754.42	28,659 4 11	37 15 9	
1866-67	662,970	1035.89	57,632 14 5	55 10 2	
1867-68	90,205	140.94	6,204 4 9	44 0 4	
	<u>12,36,006</u>	<u>1931.25</u>	<u>92,496 8 1</u>	<u>47 14 3</u>	

During season 1864-65 in March and April a topographical survey was made of a small portion of the Dooars, arrangements had not been made for demarcations; the country having been annexed only 6 weeks before my arrival, little or nothing was then known about it. The revenue survey was commenced in December 1865. During 1865-66 a large detached party was employed in the Chittagong District.

28. The work of the past season has been carried on under great disadvantages in a country difficult of access, and where survey work could not be done before the jungle was first cleared. Of 1,497 square miles surveyed 54 only were cultivated; the remainder is waste land. The heavy con-

tinuous daily rain for 3 weeks in April was a serious interruption to all out-door work, except at intervals when the rains stopped. Sickness stopped and delayed work likewise. During this transition period in the working of the department, efforts have been made to improve the qualifications of Native Surveyors to enable them to furnish original records in a business-like manner for future reference. In fact everything has been done to meet the requirements of the day for an improved style of work. It will give me much satisfaction to know you approve of the work done.

Description of country surveyed in District Goalpara, Season 1867-68, by J. H. O'DONEL, Esq., Revenue Surveyor, 5th Division, Lower Provinces.

On the annexation of the Bengal Dooars in January 1865, the country was divided into two districts called the West and East Dooars, the Sunkos River forming the boundary common to both. Minagooree was selected as the Civil Station for the former, and Dutma for the latter. The revenue of the East Dooars was so small that Dutma with all its new buildings was abandoned shortly after it was occupied, and the new district transferred to Goalpara.

2. During season 1867-68 the remaining portion of the West Dooars between the Rydak and Sunkos Rivers was surveyed. In the East Dooars, District Goalpara, Dooars Gooma, Repoo, Cheerung, and Sidlee have been surveyed. Dooar Bijnee only remains to complete the survey of the Bengal Dooars.

3. The East Dooars District is situated at the base of the Bhootan Hills, and extends from the Sunkos or Guddadhur River, which separates it from the West Dooars and Kooch Behar Districts on the west to the Monas River, and its old beds adjoining the Kamroop District of Assam on the east. On the south it is bounded by Pergunnahs Ghoorla, Purbutjoar, and Khontaghat of the Goalpara District. The approximate area is 1,558 square miles, of which about 350 square miles remain for survey.

4. The tract of country now known as the East Dooars was part of the Ranganatee District under the Mogul Government, and in 1785 formed two estates called Bidyagong and Bijnee of the Rungpore Collectorate; they were held by the Rajahs of the same names, who at that period annually delivered elephants in lieu of money payments as revenue. The former 40 and the latter about the same number. Ninety years ago the country was as difficult of access and isolated as it is now. To evade payment of revenue, the Bijnee Rajah told our officials that the Bijnee Estate belonged to Bhootan, and to the Bhootan officials he represented it as British property. It is not surprising that some of our officials were misled, and described it as a vague debateable land. So little was then known of this part of the Bengal Frontier that in the first surveys of the last century both estates were confounded under the name of Bhootan Bijnee. When the last treaty with the Bhootan Government was negotiated in 1866 it was not then known that nearly half the Bengal Dooars in 1785 formed part of the Rungpore District, nor the manner in which the Deb Rajah got possession of them. It is not likely the benevolent allowance of Rs. 50,000 per annum would have been so large. Much interesting information may be obtained of the early history of these estates from the old Rungpore records. The following extracts are taken from Hamilton's East India Gazette, vol. I, pages 242 and 275 :—

“ In consequence of their remote situation and general wildness of the country, the history of the estates in this quarter was long but imperfectly known even to the public functionaries at Rungpore; and so long as the Bijnee Rajah paid the customary tribute, no enquiry was made as to the state of the country, or even to ascertain the original nature of its connexion with the Mogul Emperor, to whose authority the British Government had succeeded. The notion so long prevalent that the fort of Bijnee with a considerable tract of the circumjacent country lies beyond the Bengal boundary was subsequently found to be quite erroneous, the Bijnee Rajah having an evident interest in curtailing the extent of British influence.

"The line of frontier east of the Sunkos to the confines of Assam has been still more subject to the intrusions of the Bhootanners, as in this quarter they have managed to appropriate to themselves the large estate of Bidyagong.

Bidyagong. immediately adjacent to Bijnee, where their interference, as will be seen under that head, was still more irregular. The Bidyagong estate was obliged originally to deliver annually forty elephants to the British Government, which last as the feudal superior had the sole right of nominating to the succession. It is true that the Bidyagong Chief gave the Bhootanners yearly about Rs. 400 worth of cotton cloths, and dried fish; but this was done merely to conciliate the good will of a tribe which from its position was always able to harass his estate. The Bhootan Government never dared to dispute the sovereignty of the estate with the Moguls, from whom the delivery of the goods above mentioned was kept a profound secret. The Deb Rajah, while the attention of the British Presidency was directed elsewhere, got possession of the Bidyagong zeminary, and some years after, when the circumstances of the case were reported, it was determined to forego all claim to an object that appeared of such trivial importance."

5. The East Dooars District is sub-divided into five Dooars, called Gooma, Repoo, Cheerung, Sidlee, and Bijnee. Gooma was managed by the Soobah of Bara Dooar; the next Soobah was the Governor of Repoo. The jurisdiction of the Soobah of Cheerung extended eastward from Repoo to the Monas river, and included Dooars Cheerung, Sidlee, and Bijnee. The Rajahs of Sidlee and Bijnee were amenable to his authority. The existing sub-divisions are now the same. Dooars Gooma, Repoo, and Cheerung are under khas management; the Rajahs of Sidlee and Bijnee pay revenue as zemindars.

6. Thirty-one marks for platforms, for a distance of 85 miles, have been erected in laying down the remaining new Bhootan boundary from No. 47 on the Rydak river to No. 78 on the west bank of the Monas river adjoining the Kamroop District of Assam. The boundary runs along the foot of the hills from pillar to pillar, except from No. 49 to No. 50, where the western bank of the Sunkos river forms the boundary, and from No. 64 to No. 65, where the Dholapancee Nuddce forms the boundary. The last mark No. 78 is on the south-east corner of Bagh Dooar stockade on the west bank of the Monas river. No person on the part of Bhootan Government has ever been in attendance with the survey parties. Along the whole line of boundary the country is a desolate wilderness, impassable without first clearing a path. The villages of Begoo and Bishun Sing are now entirely deserted; two temples and the ruins of masonry buildings mark the site of Bishun Sing. Six maps will be prepared for the Public Works Department as a guide for ascertaining the positions of the marks for platforms.

7. The general appearance of the country is an undulating plain of high grass and reeds with extensive forests of sál and other trees, entangled with brush-wood and creepers, rendering the country impassable. Wild animals are so numerous that the timber-cutters dare not venture in the forests except in large numbers. A few scattered villages are met with at distant intervals along the south on the borders of the Goalpara Pergunnahs. On the north the country is totally uninhabited, and without water for miles. In January and February the grass jungle is burnt down; after the first showers in April the grass begins to grow fast, and is soon ten feet high. The unhealthiness of the climate is well known. Sickness prevails at all times, but chiefly in April and May, when few or none escape fever. Towards the south of Huldeebaree and Bhulika the lands are well cultivated; the numerous small streams afford facilities for irrigation.

8. The Bhootea map, bearing the seals of the Deb and Dhurm Rajahs, dated 25th Falgoun 1230, or A. D. 1823, shows the limits of the lands held by Rajah Cheerung and Sidlee Dooars. On comparing boundaries, I find they are the same as the boundaries of the Bidyagong estate of the Rungpore District in 1785. The Aie river separated Bidyagong from Bijnee, and the Bhootan Government was in the habit of withdrawing villages from the jurisdiction of the Sidlee Rajah, and placing them under direct management. When we took possession of the Dooars in January 1865, he was dispossessed of Dooars Gooma, Repoo, and Cheerung, west of the Aie river, and all the sál forests. He paid the land rents of a few villages. It was at first supposed that Cheerung and Sidlee formed one and the same Dooar, but as progress was

made with the survey, it was ascertained that the revenue of two talooks, Janagaon and Deorgaon, was collected by the Repoo Tehsildar, and the revenue of talook Baotee, called also Nisma, was collected by Munsaroo Mundul of Baotee, son-in-law of Jemul Dewan of Cheerung. Two years before the last war, Joalia Mech obtained a sunnud from the Deb Rajah to collect the tax for catching elephants, and the management of the timber mehals. He resided at Baotee, and likewise collected the land rents of the talooks named before, viz., Janagaon, Deorgaon, and Baotee. He is said to have collected a force of about 600 men, chiefly from the North-West Provinces. He burnt and plundered Bijnee and laid waste the country as far west as Huldeebaree, where he was met by a force sent by the Dagor Penlow, and killed in the encounter. He has left no relatives except an infant daughter. On his death, the Sidlee Rajah claimed Janagaon and Deorgaon, and the Bijnee Rajah claimed Baotee. In May last Bateeram Mundul was appointed tehsildar of Cheerung. The exact limits of the lands held by Jaolia Mech to the north of Dooar Sidlee, chiefly unoccupied forests of trees and high grass, were never defined by the Bhootan Government. The boundaries of the three talooks were easily ascertained, but in the absence of any local information about the uninhabited forests called Noonmatee and Kachoo-baree, &c., situated between them or from the Longa or Hail Nuddee on the west to the Aie Nuddee on the east, a new line of boundary has been laid down by me, separating the limits of villages in the possession of the Sidlee Rajah from Cheerung. He claims these lands likewise, but owing to the death of Jaolia Mech, the khas manager under the Bhootan Government, there is no one to dispute his claim. As the country is now better known, the interests of Government will, no doubt, receive the early attention of the Deputy Commissioner. After excluding the Dooars, of which the Rajah was dispossessed by the Deb Rajah, and the sâl forests on the Gowrang Nuddee, reserved for the Forest Department, he has the rest of Sidlee Dooar, an extensive fertile tract, containing acres 190,521, or 298 square miles, for which he now pays only Rs. 506. The present rate of assessment on the cultivated area of 18,307 acres is 5 pie per acre, and on the total area four-tenths of a pie.

9. Roads, properly speaking, there are none. During the last war a road was opened out from Aleepore to Raha thannah in Kamroop, passing east and west across the newly annexed country. It is now in most places overgrown with high grass, and being intersected by numerous deep streams, which have swept away the wooden bridges, it is not passable for laden cattle except elephants, and even for elephants with great difficulty. From its neglected state in the West Dooars it is evidently not considered of any importance even for administrative purposes, and in the East Dooars it has been entirely abandoned. All the Police stations in the Dooars, from Aleepore eastwards, are situated on this route. The distances of police stations from Aleepore to Rajah thannah are noted below :—

From Aleepore to Huldeebaree	...	...	...	21 Miles.
" to Raimana	...	...	...	29 "
" to Dutma	...	...	...	46 "
" to Sidlee	...	...	...	67 "
" to Bijnee	...	...	...	85 "
" to Raha thannah	...	...	...	94 "

It took me six days to march from Aleepore to Huldeebaree, 21 miles, the high grass had to be cleared, and the road sloped in many places. The nullahs with deep puddles, and water were crossed by heaping up bundles of grass as a footing for animals. I found it impossible to proceed beyond Huldeebaree to Dutma before the road was first cleared.

10. The principal rivers which flow from the Bhootan Hills and fall into the Brahmapootra river are the Sunkos or Guddadhur, the Saralbhangha or Gowrang, the Chumpamotee and the Aie.

The Sunkos river enters the Dooars seven miles north of Huldeebaree Police station. It is deep and nowhere fordable, and flows over a stony bed with a strong current. Rapids are numerous, and navigation, except for very small boats, becomes precarious above Lowkootee or Bukseegunj, a large mart for country produce in Cooch Behar. Below Bhulka it is called Guddadhur, and three miles below Simlabaree haut the name changes to Gungadhur. It is crossed by ferries at Huldeebaree, Bhulka, Lowkootee, and Sogoonchara. The Guddadhur formerly flowed from Simlabaree into the Brahmapootra at Dhoobree, the old bed is still navigable for small boats to Purtabgunj Haut.

The Sunkos river changed its course some years ago and flowed into the Guddadhur, leaving its old bed dry and difficult to trace in places. The Rydak river
 Rydak and Sunkos River No. 2. now flows into the western Sunkos near the village of Pokalagee ; it is called Sunkos from thence to its junction with the Brahmapootra river. Tracing these two rivers from the hills to the Brahmapootra, the Sunkos, Guddadhur, and Gungadhur are now one continuous stream. The Rydak and western Sunkos is another distinct stream. Both these rivers, after keeping six to eight miles apart, flow into the Brahmapootra near Poteemaree haut.

The Saralbhanga river leaves the hills four miles south of Bishun Sing, near Pokeehagee encamping ground, so called after the name of a large rock in its bed. It is almost a bed of stones and sand, dry in some places where it flows underground, and with a narrow channel of water in others. Near the village of Patgaon it begins to flow again till it joins the Gowrang Nuddee. The Gowrang Nuddee rises from the sâl forests, west of Bidyagong ; it is a small stream till it receives the water of the Sawmoka and Saralbhanga near Chundurpara. Lower down, the united stream is called Gowrang till it flows into the Brahmapootra near Belaseepara. It admits of small boats as far as Chundurpara where it is crossed by a ferry.

The Chumpamotee river rises in the forests of Cheerung Dooar. It receives the waters of the Dholapanee and Lapanee on the west, and the waters of the Borobhoor on the east. The bed becomes deeper as it enters alluvial soil, it is crossed by a ferry at Batagaon, and lower down at Dhuntola, where it leaves the Dooars. At Dhuntola it admits of boats of fifty maunds, and smaller boats higher up to Batagaon.

The Aie river enters Cheerung Dooar near Madaljar and flows with a strong current over a bed of stones. In the upper part of its course there are several beds, some with water, and others quite dry. It receives the waters of the Boaree Aie near Deburgaon, and of the Kanamakra near Goonburgaon where it becomes deeper, but does not admit of boats of more than 20 or 30 maunds from thence to its junction with the Monas river. It is deep in many places and is crossed by a ferry at Balatol ghât on the road from Sidlee to Bijnee.

The Goroopala Nuddee rises in the forests north of Raimana Police station ; it flows in a serpentine course to Rajadabree, where there is a timber depôt of logs of sâl from the Repoo sâl forests. There was formerly, in 1852, a timber customs ghât at Nokooldanga, at the junction of the Goroopala and Gongea Nuddees, four miles south-west of Dutma, where the zemindars of Purbutjooar and Khoontaghat, and the Rajah of Sidlee levied tolls. The Longa Nuddee falls into the Goroopala half a mile lower down, where the name of the united stream is changed to Sunkos, and it retains that name till it falls into the Brahmapootra near Bogreebaree.

11. Large boats are seen at Lowkootee on the Guddadhur river. The ferry boats are the only ones generally met with on the other rivers, which are useful for floating down sâl timber from the forests during the rains. There is water communication for large boats on the Guddadhur river for six miles from Sepai haut to Lowkootee, and from thence for small boats to Huldeebaree, 29 miles. On the Goroopala for small boats of 20 maunds for 16 miles from Nokooldanga ghât to Rajadabree. On the Gowrang and Saralbhanga for 16 miles from Chundurpara to Patgaon. On the Chumpamotee for 18 miles from Dhuntola to Batagaon. On the Aie 21 miles from the Monas to Goonburgaon. The mileage of water communication for large boats is six miles, and for small boats of about 20 maunds, 100 miles.

12. There are no towns or large villages of note. Dutma, once the Civil station of East Dooars, is now only a Police station. It is surrounded on all sides by high grass jungle. Nothing now remains of the many bungalows erected in 1865, except a few charred posts. The Rajahs of Sidlee formerly resided at Bidyagong at the junction of the Borobhoor and Chumpamotee Nuddees. No trace is now left of the old site. They removed some years ago to the village of Nomnagaon called Sidlee, where the Rajbaree is situated. The fort of Sidlee, captured by Dheer Narain in 1837, is the same site as the present

Rajbaree. It has a ditch three hands deep and five hands wide on the south side, and on the other sides a fence of reeds and grass like the usual enclosures round the huts of each ryot. There is a Police station at Sidlee where the Rajah's family and a few retainers reside.

13. The ruins of two sun-dried brick buildings have been laid down in the village of Chengmaree near Huldeebaree called Boro and Chota Hem Rajbaree ;
Ruins. they were intended as a temporary residence for the Deb Rajah when he visited the Dooars, which from enquiry it appears he never did.

14. The total number of inhabitants within the portion of the West Dooars District, surveyed in 1867-68, is 2,815, or 25 to the square mile ; they are detailed below :—

Population.					
Rajbungsees	...	...	...	...	2,616
Mech	...	...	...	...	52
Garrows	...	...	...	...	70
Mahomedans	...	...	...	...	77
					2,815

The total number of inhabitants within the surveyed portion of the East Dooars is 8,193, or less than 7 to the square mile ; they are detailed below :—

Hindoos or Rajbungsees	...	...	...	...	1,756
Mahomedans	...	...	...	...	158
Mech	...	...	...	...	6,054
Garrows	...	...	...	...	215
Bhootees	...	...	...	...	10
					8,193

15. The annexed table exhibits the items of revenue for the year 1867-68 :—

Revenue, East Dooars.							
Names of Dooars.				Land Revenue.	Forests.	Miscellaneous.	TOTAL.
Gooma	...	...	...	484 0 0	485 2 8	.....	969 2 8
Repo	...	...	...	1,002 8 0	577 0 0	470 0 0	2,049 8 0
Cheerung	...	...	...	481 2 0	5,055 10 0	220 0 0	5,706 12 0
Sidlee	...	...	...	506 7 0	.....	.....	506 7 0
Bijnee	...	...	...	432 0 0	.....	120 0 0	552 0 0
				2,866 1 0	6,117 12 8	810 0 0	9,783 13 8

There are no local land measures, land for rice and other crops pays generally Rs. 2 per plough, and in Sidlee Rs. 7½ Narainee per plough. Cotton and mustard seed, cultivated in the jungles, pays Re. 1-4 per kodal. Licenses for catching elephants are granted at the rate of Rs. 20 for each Koonkee. The country is isolated, and so little known that there are no grants of waste land.

16. Trade with Bhootan is nominal. Bees' wax and blankets are bartered for tobacco and English cloths. The few inhabitants manufacture cloths for their own use.

17. There is a haut at Dingdinga in Gooma. At Dutma there are two modees' shops and a temporary haut in the cold weather. Supplies of rice and other articles of food were obtained from the villages in Pergunnah Khoontaghat, and distributed to parties. Thirty maunds of rice could not be purchased at Dutma without objections being raised that so large a quantity could not be conveniently spared for sale.

18. The sál forest to the south of Huldeebaree Police station has been separately marked for the forest department. It is called Salbaree Dooar Buxa, and is situated on the Sunkos river. The area is 8,413 acres, of which 34 acres are cultivated. Seventy Garrows reside within this forest.

19. The next block marked is No. 11 Salbaree Dooar Gooma, situated west of the Purbutjoar sál forest. The area is 15,779 acres, of which 200 acres are cultivated, and the number of inhabitants is 215. The revenue paid annually is Rs. 485, an amount equivalent to the land revenue of Dooar Gooma. In Dooar Repoo Nos. 23 and 24 Notogaonjhar and Kochoogaonjhar, containing an area of 34,403 acres, have been reserved for the forest department. This block is situated between the Langa or Jakatee Nuddee on the west, and the Polo Nuddee on the east, and the new Bhootan boundary on the north. It is uninhabited. The northern limits were at one time disputed, but since the boundary has been laid down, the Bhootens are satisfied. The revenue received is Rs. 577.

In Dooar Cheerung Nos. 32 and 33 Janagaon and Janagaon Salbaree, containing an area of acres 37,220, have been marked. This block is a continuation eastward of the Repoo sál forest, and extends to the Longa or Hail Nuddee. It is uninhabited. The revenue is Rs. 5,055.

The next block is known as the Gowrang sál forest in Dooar Sidlee. It extends from the Sowmoka Nuddee on the west to the Chumpamotee Nuddee on the east. It contains an area of acres 40,274, of which 511 acres are cultivated, and the number of inhabitants is 145. For survey purposes it was divided into 11 blocks Nos. 59, 62 and 69 to 77 and portions of Nos. 63, 64, and 68. At present there is no forest revenue paid. The area and revenue paid for the sál forests is detailed below :—

				AREA.	REVENUE.
District West Dooars—Dooar Buxa—Salbaree				Acres	
Do.	East Dooars	do.	Gooma do.	15,779	Rs. 485
Do.	do.	do.	Repoo do.	34,403	„ 577
Do.	do.	do.	Cheerung do.	37,220	„ 5,056
Do.	do.	do.	Sidlee do.	40,274	„ None.
TOTAL				136,089	Rs. 6,118

The cultivation within the sál forests is constantly changed, and in the new clearings numbers of trees are cut down and burnt. It would be an advantage to pay compensation to the few cultivators, and remove them to other places where there is waste land in abundance. Some of them may prove useful as laborers for forest work. The timber-cutters pay from Rs. 4 to 5 for each koral or axe, besides jhar salamee, to each duffndar. A pair of sál logs six or seven feet long and four feet round sells for Rs. 8. The trees used for making canoes are sál, cliuma, goonsuraite, and chumpa.

20. Till communications are opened out, and this isolated district made easy of access, and settlers encouraged, the revenue is not likely to improve much. The magnificent sál forests now pay Rs. 6,118 more than double the land revenue. The extensive fertile tracts now overgrown with grass and reeds require settlers. A population of less than seven to the square mile cannot increase the limits of cultivation. If the country is neglected and left to itself, it may in a century be gradually cultivated like the neighbouring district of Cooch Behar. The knowledge of its resources, obtained from the maps and other statements furnished by the Revenue Survey, showing its cultivated area, forests, and other lands now waste and unproductive, will be of much value in the hands of a Settlement Officer. Roads and settlers are required. No settlement has yet been made, the land rents paid to the Bhootan Government have been roughly ascertained, and the amount annually collected.

Description of country surveyed in District Lohardugga, Season 1867-68, by CAPTAIN J. SCONCE, Revenue Surveyor, 6th Division, Lower Provinces.

The larger portion of main circuit No. 7 consists of *Tuppeh Burkol*, an estate which lapsed to Government about the year 1856, falling an heir to the last proprietor, and which was bestowed on

Rai Kishundeul Singh, a large proprietor in the *Pergunnah* who resides at *Runka*, for his good services during the disturbances of 1857. The villages show traces of having been formerly more populous and having had more land under cultivation than at present, and this is said to be the result of the high rents demanded by the present owner. It does not appear that any arrangement was made regarding the villagers' rights at the time of transfer.

The low scarped plateau, where the deserted site of *Doothoo* is shown, the credited haunt of a demon by the readily superstitious belief of the people of this wild district, gives its name to a large Tuppeh of 63 villages, which are chiefly owned by a large proprietor residing at *Chainpoor*.

The small Tuppeh of *Chetkee* is part of the estate of *Rai Kishundeul Singh* of *Runka*, who is mentioned above.

To the south of this main circuit, the *Goolgoolpat* plateau, a bold feature, is a comparatively narrow off-shoot from an extensive high plateau to the south-east. The height has been deduced from *Turer* G. T. S. 3,814 feet.

Bijka is another hill of great prominence, especially from the north, height 2,479 feet. The *Nowka* and *Megonee* hills are also well marked features.

In the south of the circuit, there is a well cultivated plain with a considerable extent of terraced rice land. The villages *Pursowar*, *Burkol khoord*, and *Burgurh* are on the most flourishing. At *Burgurh* there is a Police out-post. To the north of the circuit, about the villages *Junnewa* and *Dhusnee*, there is a considerable extent of good culturable land at present covered with a sparse jungle. The *Kunhur* river has low banks and is everywhere fordable during the dry season.

Two routes of communication from the *Sirgoojah* state pass through this circuit towards *Daltongunge* and *Gurwa*, and during the cold weather months there is a considerable traffic by pad bullocks.

There are no made roads, and carts are unknown in this part of the *Pergunnah*.

Main circuit No. 8 includes the whole of Tuppeh *Khuppurmunda*, with the exception of two vil-
 Description of country in main circuit No. 8. lages which have been surveyed in main circuit No. 9. *Khuppur-
 munda*, part of the estate of *Rai Kishundeul Singh* of *Runka*, is considered one of the wildest parts of Palamow, and from the small number of inhabitants and large extent of land lying waste it well deserves the character.

The eastern portion of the *Tuppeh* is very high land, but much intersected by streams and broken into ravines.

The western portion of the *Tuppeh* towards the *Kunhur* river is low; the land is, however, poor.

The fall from the high land is very abrupt to the south of the circuit, but in the north, in which direction the drainage of the high land chiefly escapes, the fall is very gradual.

The best villages are towards the south:—*Bhowree*, *Burduree*, *Bandoo*, and *Chutroo*, where the country is fairly open with a considerable amount of cultivation.

The huts in the villages are all of the poorest description. Towards the south, the *Kunhur* river has a low rocky bed, but in the north, opposite to the villages *Khooree* and *Chumkullee*, the bed is much below the general level of the country, and the banks are precipitous.

Tuppeh Kutree, of which 20 villages are surveyed in the southern sub-division of main circuit
 Description of country in main circuit No. 9. No. 9, is part of the estate of *Rai Kishundeul Singh* of *Runka*; the remaining villages were surveyed in main circuit No. 6 of season 1865-66.

Tuppehs *Meeral*, *Bunka*, *Umhur*, *Koorga*, and *Oontaree* are held either as the direct estate of *Bhai Bhugwan Deo* of *Nugur Oontaree*, or are held in sub-tenure from him.

The southern villages of the circuit compose part of the high *Khuppurmunda* plateau, the ascent to which from the low villages of *Kutree* is high and abrupt in the east, gradually becoming lower until the *ghât* entirely disappears in the village of *Kethma*.

In Tuppeh *Kutree* the upland crops are chiefly grown, but little terraced lands for rice being met with.

In Tuppels *Meeral*, *Bunka*, *Umhur*, and *Coorga*, there are several flourishing villages and a considerable extent of terraced rice land. This wet cultivation is gradually extending; the returns from the expense of terracing apparently being rapid and certain; the entire outlay is said to be recovered after from four to ten years according to the situation of the terraced lands.

The northern villages of Tuppeh *Umhur* stretch on to a high plateau on the boundary of the *Gya* District. This high land is an abrupt and prominent feature above the low valley of the *Bankee Nuddlee*.

The better villages in the northern portion of the main circuit are *Meeral* and *Bishunpoora* (where there are weekly markets) and *Sillecdag*. A small weekly market has also been recently established at *Bugondha*.

A cart road might easily be made from *Gurwa*, about five miles east of *Khujooree* through *Meeral* to *Bishunpoora* and on to *Oontaree*, about ten miles further west, which would open up the fertile valley of the *Bankee Nuddlee*, and which might be carried on to *Doodhee* in the *Mirzapoor* District, from which there is a cart road to *Mirzapoor*.

At present there are no made roads.

Extract from Annual Report of the Operations of the Upper Assam Revenue and Topographical Survey by H. B. TALBOT, ESQ., Season 1867-68.

13. The imperial road does not pass through circuit No. 7. The Dhodur Ally, one of the principal district roads, is the southern boundary of the circuit, and is shown by double lines in the one mile map. This road, which goes right through the district, is certainly the most important of the district roads, and should be kept in thorough repair. The other roads in this circuit are of little importance either with regard to military purposes or as roads of communication, as almost all the gardens are situated on the banks of the Deesang river, which is always navigable for small boats, and at least seven months in the year for large ones.

14. The palace and fort of Ghergong are situated in this circuit. The fort has had bastions at the corners, but they are now destroyed, and there is a magazine situated a short distance to the east of the fort. The palace is one of the oldest buildings in Assam, and it is a great pity that the Assam Company are allowed to carry away the bricks; they have already pulled down the gates, a portion of the palace, and the wall enclosing the palace.

19. Circuit No. 8 is pretty well cultivated. The belt of jungle which runs along the banks of the Brahmapootra river is almost entirely of grass, ekrah, and khegree, with a little forest to the east.

20. Malo Koleance Deha, and Aralle Tollee Puthars, are large patches of grazing ground in the winter for thousands of buffaloes and cows, but in the rains they are vast sheets of water; when planters and other people that have occasion to go to Kokeelah Mookh use boats. These puthars have been shown in the one mile map with small grass.

21. The bridges along the trunk road are nearly all made of bamboo and wood. There are some pukka bridges to be seen after passing the Bhogdoe river on the way to Seebnagor. Those that are finished are on the smaller nullahs, the larger streams, such as the Jeok, Meleng Modoe, &c., have still to be crossed on what are called "dullungs,"—bamboo and wooden bridges.

22. If the imperial road earth-work continues to be carried on at its present rate, there is not the slightest chance of the portion in this district being finished for some years to come. When I returned for recess from Jorchaut, there were at least three feet of water flowing over the road for miles.

23. There are several district roads in circuit No. 8. The Borally which starts from Nazeera and goes to the Dekoo Mookh, at one time went along the bank of the Brahmapootra river to the temples in mouzah Dehrgaon. It is now cut away by the river shortly after it passes the Dekoo Mookh, and is again traceable from mouzah Meleng as far as Malo Puthar in mouzah Koohoonjogonia, where all further trace of it is lost.

Copy of letter No. 106, dated Fort William, the 11th November 1868, from MAJOR J. MACDONALD, Officiating Boundary Commissioner, Bengal, to the Deputy Surveyor General, Lower Circle.

I have the honor to forward, for submission to His Honor the Lieutenant Governor of Bengal, the following Annual Report, together with the accompanying statement of work performed in my Office, in connection with my duties as Boundary Commissioner, for the past season 1867-68.

2. The boundaries of the three zillahs, *viz.*, Pooree, Cuttack, and Balasore, composing this division, and of the several criminal sub-divisions and thannahs contained therein, have been decided on after communication with the Commissioner and the local authorities. Descriptions of boundaries, and lists of transfers from one zillah to another, were revised and sent to the Commissioner on the 16th May last, who returned them to this office with the full approval of himself and the District Magistrates. These papers have been lately forwarded to your office for submission to Government, and for subsequent publication in the Gazette. It now remains for this division to settle, in communication with the zillah Judges, the subordinate civil jurisdictions (Moonsiffes), assimilating them to the criminal ones.

3. The statements of the revised sub-divisional and thannah boundaries, appertaining to zillah Monghyr, have been duly examined, approved, and countersigned by the Commissioner and the Magistrate. Those of zillah Bhaugulpore, received last year from the Commissioner, have been amended by this office in consequence of a transfer, to the said zillah, of certain villages from Purneah, sanctioned by Government in letter No. 4599 of 31st August last, and have been lately sent to the Commissioner for counter-signature by that officer and the Bhaugulpore Magistrate.

The boundary statements, &c., relating to zillah Purneah, which were stated in my last report as then remaining with the Commissioner for examination, have not yet been returned by him. On asking the said officer for the Purneah papers, he answered that he forwarded them, for disposal, to the Collector of Purneah, who has not yet been able to dispose of the same; one of the survey volumes and pergunnah maps having been lent to the Deputy Collector of Deareh Survey. The Collector has, however, requested the Deputy to send the survey records as soon as he can spare them. The delay is unsatisfactory.

On the return of the Purneah documents, with those of Bhaugulpore, after approval and counter-signature of the Commissioner and the Collector-Magistrates, I shall be able to forward for publication the notification describing the zillah, sub-division, and thannah boundaries of the whole Bhaugulpore division.

4. The boundary descriptions of sub-divisions and thannahs of zillah Mymensing have been already approved of by the Commissioner and the Magistrate. Those of zillah Sylhet, which were sent to the Commissioner in July 1867, have been returned to this office for correction, in accordance with a few suggestions made by the Sylhet Magistrate.

The list of thannahs belonging to zillah Furreedpore, published in the Notification of the 20th March 1867, not having agreed with the thannah divisions, marked by the Magistrate on the map of that zillah, I brought this to the notice of the Commissioner in July 1867, forwarding him at the same time the zillah map; on the 10th March 1868 the Commissioner returned the map, stating that the Magistrate of Furreedpore could not reconcile the discrepancy thus pointed out by me. He has, however, marked on the map the names and sites of the thannahs as notified.

The descriptive boundary statements of sub-divisions and thannahs of zillahs Dacca and Backergunge, forwarded to the Commissioner in July 1867, were returned to this office in March 1868 for alteration, as the Notification of the 5th October 1867 declared changes in the thannah arrangements in those zillahs.

In May last I sent to the Commissioner a map of the Dacca Division showing the revised arrangements in the several zillahs for final approval, but that officer in his letter No. 23, dated 10th

June 1868, informed me that it was useless to attempt to map thannah boundaries which the next District Superintendent of Police might alter, and that probably, when all the sub-divisions sanctioned by Government are actually established, the thannah arrangements will undergo further changes. I informed Government of the contents of the Commissioner's letter quoted above. The Government in reply stated that no jurisdictions are, or can be altered at the will of Police Officers; that all proposed changes should be made in consultation with the Commissioner and the Magistrate, and with the final sanction of the Lieutenant Governor; and that if, as it appears to be the case, considerable changes in thannah boundaries in the Dacca division are anticipated, the Lieutenant Governor will give orders for reviewing the arrangements in this division as a whole at once.

Under the above instructions from Government, I have written to the Commissioner, asking him whether he anticipates the necessity of considerable alterations in the thannah jurisdictions already laid down. Pending the receipt of the Commissioner's reply to the last letter of mine, I am unable to finish work in the Dacca division.

5. The maps of Districts Bograh, Rajshahye, Maldah, Moorshedabad, and Pubna, showing sub-divisions and thannahs, which were reported last year as Rajshahye Division. received from the Commissioner, have, on examination, been found not to agree with the statement of thannahs and sub-divisions sanctioned by Government in letter No. 1381 of the 2nd March 1864. Correspondence is now, therefore, going on between this Office and that of the Commissioner, with a view to remove the discrepancies, and to decide the sites, boundaries, and names of thannahs, &c.

The maps of Districts Dinagepore and Rungpore, which were with the Commissioner last year for the purpose of marking thereon new boundaries of thannahs, in consultation with the local officers, were returned to this Office in June 1868, without anything indicated on them, there being no proposal to make changes in the existing thannahs. This Office has now, therefore, been engaged in ascertaining, and marking off on the maps of the above districts, the boundaries of the existing thannahs.

6. The Commissioner of Chittagong having brought to my notice that the arrangement of thannahs and sub-divisions, as at present existing in his division, Chittagong Division. requires re-adjustment, I have sent him district maps on the scale of 1 mile=1 inch to enable him and the Magistrates to indicate thereon such new sub-divisional and thannah boundaries as may be determined upon and recommended by the said Officers.

7. I am well satisfied with the general conduct of the Office, and think that the lately entertained head writer, Baboo Nēbarun Chunder Mookerjee, whose appointment was confirmed in May 1868, on the death of the former occupant, is careful and anxious to improve. The head draftsman, Moonshee Mehīr Allee, continues to give every satisfaction. The general attendance at Office has been regular.

Statements and Lists prepared.

1. Descriptive statements of the revised boundaries of the several Moonsiffes, belonging to Zillahs Patna, Tirhoot, Sarun—Chumparun, Shahabad, and Gya, were prepared and sent to the Government of Bengal for publication.

2. Original detailed lists of 4,911 villages of six thannahs belonging to Zillah Mymensing, and of 6,009 villages of sixteen thannahs appertaining to Zillah Sylhet, viz. :—

	Villages	of	Thannah		} Part of Zillah Mymensing.
750				Madargunge.	
585	"	"	"	Mymensing.	
296	"	"	"	Guffurgoon.	
1,166	"	"	"	Attia.	
1,112	"	"	"	Mudhopoor.	
1,002	"	"	"	Kishoorgunge.	
—					
4,911					

192

325	Villages	of	Thannah	Parcool.	} Zillah Sylhet.
593	"	"	"	Tajpoor.	
129	"	"	"	Jyntealpoor.	
120	"	"	"	Moolagool.	
161	"	"	"	Gwineghat.	
403	"	"	"	Dhurumpasha.	
411	"	"	"	Sonamgunge.	
433	"	"	"	Chnttuck.	
710	"	"	"	Lushkurpoor.	
228	"	"	"	Nonkhalee.	
412	"	"	"	Shunkarpasha	
539	"	"	"	Abidabad.	
711	"	"	"	Nubeegunge.	
259	"	"	"	Latoo.	
150	"	"	"	Hingajeea.	
425	"	"	"	Rajnuggur.	
<hr/>					
6,009					

3. Lists of 1,840 villages requiring to be transferred to Zillah Furreedpore, in which they are outlying, from the jurisdictions of other zillahs.

4. Lists of 82 villages requiring to be transferred to Zillah Backergunge, in which they are outlying, from the jurisdictions of other zillahs.

5. Lists of 55 villages requiring to be transferred to Zillah Sylhet, in which they are outlying, from the jurisdictions of other zillahs.

6. Lists of 218 villages requiring to be transferred to Zillah Mymensing, in which they are outlying, from the jurisdictions of other zillahs.

7. Lists of 25 villages, of zillah Mymensing, requiring to be transferred to Zillah Dacca in which they are outlying.

MAPS PREPARED.

Scale 6 inches = 1 Mile.

1. Two maps showing the revised boundaries of the suburbs of Calcutta, one for the Surveyor General, and the other for this office.

Scale 1 Mile = 1 Inch.

2. Two tracings showing the villages transferred from Zillah Purneah to Maldah, one for the Commissioner of Bhaugulpore, and the other for the Collector of Purneah.

3. Two tracings showing the villages transferred from Purneah to Bhaugulpore, one sent to the Government of Bengal, and the other kept for office use.

4. Two sets of Moonsiffee maps appertaining to Zillah Purneah, showing villages on the boundary line of each thannah and Moonsiffee, for the Judge of Purneah.

5. A tracing from the original survey map of Zillah Chittagong, sent to the Commissioner of Chittagong for the purpose of marking thereon new sub-divisional and thannah boundaries, as will be proposed by him and the local officers.

6. Eleven Moonsiffee maps—four Moonsiffes of Zillah Tirhoot, four of Zillah Sarun-Chumparun and three of Zillah Shahabad,—showing the revised boundary of each Moonsiffee, forwarded to the respective Zillah Judges for their use.

Scale 4 Miles = 1 Inch.

7. A tracing showing the proposed Moonsiffee boundaries in Zillah Sylhet, sent to Government with letter No. 80, dated 31st August 1868.

8. A tracing from the original survey map of the Chittagong Division, sent to the Commissioner of Chittagong, to indicate thereon any changes, as may be deemed necessary, in the existing district boundaries.

Scale 8 Miles = 1 Inch.

9. Two tracings showing the revised boundary between Zillahs Purneah and Maldah; one for the Commissioner of Bhaugulpore, and the other for the Collector of Purneah.

10. Five maps of the Patna Division showing zillah, sub-division, thanna, and revised moonsiffce boundaries; one for the Commissioner of Patna, one for the Government of Bengal, one for Mr. A. Mackenzie, one for the Surveyor General, and one for this office.

11. Nine copies of the map of Zillah Purneah showing sub-division, thannah, and moonsiffce boundaries; one for Government, four for Mr. H. L. Dampier, three for the Judge of Purneah, and one for this office.

12. Two copies of the map of Dacca Division showing the proposed boundaries of sub-divisions and thannahs; one for the Commissioner of Dacca, and the other for this office.

13. Two copies of the map of the Cuttack division showing the revised zillah, sub-division, and thannah boundaries; one for the Commissioner of Cuttack, and the other for this office.

Copy of letter No. 213-3, dated Rangoon, the 1st July 1868, from MAJOR H. NELSON DAVIES, Secretary to the Chief Commissioner of British Burmah, to the Officiating Deputy Surveyor General, Calcutta.

I am directed by the Chief Commissioner to acknowledge the receipt of your No. 276, dated 8th May, enquiring if it is the wish of the Chief Commissioner that the operations of the professional Survey, interrupted in the year 1861-62, be resumed; and to state, in reply, that the Chief Commissioner considers the survey should be recommenced next dry season, and that the record of boundaries is sufficiently advanced to keep the party employed.

BENGAL.

List of Maps published from December 1867 up to date.

<p>DISTRICT LUCKIMPORE. 1 Mile = 1 Inch.</p> <p>Main Circuit No. 1.</p> <p>GANGES RIVER SURVEY. 1 Mile = 1 Inch.</p> <p>Main Circuits Nos. 7, 10 & 11; 12 & 13; 14 & 15; 16, 17 & 18; 19 & 20.</p> <p>DISTRICT WEST DOOARS. 1 Mile = 1 Inch.</p> <p>Main Circuits Nos. 1, 2, 3, 4, 5 & 6.</p> <p>SEESSAUGOR. 1 Mile = 1 Inch.</p> <p>Main Circuits Nos. 4 & 5 & 6.</p> <p>HAZAREEBAUGH.</p> <p>Main Circuit No. 9.</p> <p>TIPPERAH.</p> <p>Main Circuit No. 10.</p> <p>SYLHET.</p> <p>Sheets Nos. 1, 2, 3, 7, 9, & 10.</p> <p>SUPDT. OF REVENUE SURVEYS' OFFICE; LOWER CIRCLE, Calcutta, the 27th November 1868.</p>	<p>MAUNBHOOM.</p> <p>Main Circuits Nos. 6, 7 & 10; 11, 12, 13 & 15; 14, 16 & 19; 17 & 18; 20 & 23; 21, 22, 25 & 26.</p> <p>LOHARDUGGA.</p> <p>Main Circuit No. 5.</p> <p>KAMROOP.</p> <p>Main Circuits Nos. 1, 2, 3, 4.</p> <p>CANTONMENT PLANS.</p> <p>Ballygunge. Alipore. Bhaugulpore.</p> <p>DARJEELING.</p> <p>2 Inches = 1 Mile.</p> <p>Hill Territory. Main Circuits Nos. 1, 2, & 3. Skeleton of Hill Territory. Hill Territory, 1 Mile = 1 Inch.</p>
}	<p>JOHN MACDONALD, Major, Offg. Deputy Surveyor Genl. and Supdt. of Revenue Surveys, Lower Provinces.</p>

