

144

GENERAL REPORT

OF THE

Revenue Survey Operations

IN

SIND

FOR SEASON

1866-67.

COLONEL J. E. GASTRELL,

DEPUTY SURVEYOR GENERAL AND SUPERINTENDENT OF REVENUE SURVEYS,
UPPER CIRCLE.

CALCUTTA :

OFFICE OF SUPERINTENDENT OF GOVERNMENT PRINTING.

1867.

No. 1.

FROM

THE SUPDT. OF REVENUE SURVEYS, UPPER CIRCLE,

To

THE SECRETARY TO THE GOVERNMENT OF BOMBAY.

Calcutta, 18th December, 1867.

SIR,

I have the honor to submit the accompanying Report on the Revenue Survey operations of the Left Bank Indus, Sind, during the season 1866-67.

2. The total area completed in 1866-67 is 1,337 square miles, and the total expenditure Rs. 40,587-9, giving a rate of 30-5-8 per square mile.

3. The total expenditure is inclusive of Rs. 3,937-7-4, drawn as arrears of pay on the introduction of the re-organization scheme.

4. The following Maps of Sind are being compiled for publication :—

Province of Sind in 99 sections, scale 1 mile=1 inch, with village boundaries ; 12 of these sections are ready for Press, and 9 more are nearly ready.

Hydrabad Collectorate, containing District Halla, portion of Mahomed Khan's Tanda, and Thurr Parkur Political Superintendency, scale 4 miles=1 inch, in progress. Half completed.

5. No new Maps of Sind have been published during the year.

I have the honor to be,

SIR,

Your most obedient Servant,

JAMES E. GASTRELL, *Colonel,*

Supdt. of Revenue Surveys, U. C.

GENERAL REPORT

OF THE

Revenue Survey Operations

IN
SIND

For Season 1866-67.

Mr. W. Lane, Surveyor, 3rd grade, on furlough M. C. to Europe from 21st April 1867.
 Captain D. Macdonald, Surveyor, 3rd grade, transferred from 2nd Division L. P. from 11th April 1867.

ASSISTANTS.

Mr. E. Loftie, Civil Assistant, 4th grade.
 " H. Dowman, Sub-Assistant, 3rd grade.
 " P. Ford, Sub-Assistant, 3rd grade.
 " G. Barrett, Ditto transferred.
 " " to 4th Division C. P. from 1st February 1867.
 " J. Connor, Sub-Assistant, 4th grade.
 " T. Dunne Ditto Ditto.
 30 Native Surveyors, &c.

FIELD OF SURVEY.—The Survey party took the field between 26th December 1866 and 21st January 1867, and resumed operations in District Mahomed Khan's Tanda of the Hyderabad Collectorate.

2. **GEOGRAPHICAL POSITION AND LIMITS.**—The country surveyed lies between $24^{\circ} 11' 43''$ North Latitude, and $68^{\circ} 3' 22''$ East Longitude, consisted of portions of Talookas Goonee, Buddeena, and Baga Ka Tanda and is limited as shown below :—

North by the portions Goonee and Muhubut Dero, surveyed in 1865-66.

South by the Runn of Cutch.

East by the unsurveyed portions of Buddeena and Baga Ka Tanda.

West by District Shahbunder.

3. **AREA.**—The Season's out-turn comprises 180 dehs or villages surveyed in 190 traverse circuits, besides 141 Jageers lying within the limits of these Dehs, but separately traversed. The total area is 1,337 square miles including a small sub-circuit along the edge of the Runn of Cutch. The area is thus distributed :—

TALOOKAS.	No. of dehs.	Square miles.
Goonee 	52	532
Buddeena 	77	469
Baga Ka Tanda	51	321
Runn of Cutch ... ... ...	....	15
Total 	180	1337

147

4. **DETAIL SURVEY.**—The Interior Survey was on the full scale, 4 inches=1 mile, and was tested by a series of check lines through every part of the work. This check Survey was executed by European Agency, and the Surveyor states “the work has stood the test well;” every native Surveyor, moreover, “was visited in the field by a European Assistant,” and with two exceptions their work proved good.

5. **BOUNDARY COMPARISONS.**—The Boundary Maps were all received in good time, and agreed well with the Professional Maps. Two trifling discrepancies only occurred which were reconciled on the spot. The Surveyor reports that the mud pillars used to define village and other boundaries are being replaced by stone marks, to render them permanent. This is an excellent and most requisite precaution.

6. **CONNECTION WITH GREAT TRIGONOMETRICAL SURVEY.**—Eleven* Tower Stations of the Cutch series, running East to West across the Northern portion of the work, afforded a complete connection, and proved, as a reference to the following comparative Statement will show, the accurate character of the

Revenue Survey measurements :—

Great Trigonometrical Survey Stations.	DISTANCES IN CHAINS BY.		REVENUE SURVEY ERROR PER MILE IN FEET.	
	G. T. Survey.	Rev. Survey.	+	-
Dunk ka Busthee to Adoori	922.96	922.58	.....	2.17
Ditto " Khori	953.68	953.73	0.28	.....
Ditto " *Hakimani	972.40	972.22	.....	0.98
Ditto " *Nidimani	886.56	886.82	1.55	.....
Ditto " Alum Khan	951.44	951.15	.....	1.61
Ditto " Shah Torail	781.28	781.03	.....	1.69
Adoori " Ditto	880.96	880.59	.....	2.22
Alum Khan " Ditto	893.44	893.15	.....	1.70
Chootlee " Kakeya	944.32	944.70	2.12	.....
Ditto " Kanad	886.80	886.55	.....	1.48
Ditto " *Katbaman	1085.52	1085.09	.....	2.02
Kakeya " Ditto	910.88	910.90	0.11	.....
Ditto " *Alum Khan	997.20	997.55	1.85	.....
Adoori " Khori	934.16	934.41	1.41	.....
Average where the error is + ... ..	.....	.....	1.22	.....
Average where the error is - ... ..	.....	.....	1.73	.....

7. **ORIGIN.**—The Station of Nidimani has been adopted as the origin of the Survey for District Mahomed Khan's Tanda. The four stations marked with a star lie in the tract surveyed last year, which has thus been doubly connected with the Survey of season 1866-67.

8. **CHANGE OF EXECUTIVE.**—Mr. W. Lane, Revenue Surveyor, being compelled by ill health to proceed to Europe on medical certificate, the charge of the Division was entrusted to an experienced officer, Captain D. MacDonald, of the 2nd Division Lower Provinces, who relieved Mr. Lane on the 11th April 1867.

9. **ASSISTANTS.**—The Surveyor (Captain MacDonald) commends the conduct of his staff both in Field and in Recess, and specially notices the zeal and assiduity displayed by Messrs. Loftie and Dowman. He also expresses himself generally well pleased with the native surveyors and measurers.

10. **MAPS.**—The maps and records of the Division were all completed for, and dispatched to, this office on the 8th November, they have not yet been received, but I saw them when inspecting the party in October last, and was much pleased with the manner in which all had been prepared.

11. WORK FOR 1867-68.—During the present season the surveyor will take in hand the remaining portions of Talookas Burdeena and Baga ka Tanda, which will complete the survey of District Mahomed Khan's Tanda, and with it the Hyderabad Collectorate. The estimated area of these Talookas is 700 square miles. The surveyor then proposes to "commence the survey of the Shahbunder District of the Kurrachee Collectorate, the whole of which has been demarcated, and the Thakbust maps of which are all ready." This District is an exceedingly unhealthy one and the Surveyor has been informed by the District authorities "that nothing can be done in shape of field work till almost the middle of January, owing to the whole country being completely submerged."

12. AREA REMAINING FOR SURVEY IN SIND.—The following statement submitted by the Surveyor gives, approximately, the area still to be dealt with in the Province:—

For Revenue Survey. Scale 4 inches=1 mile.—Sq. miles.	
In the Hyderabad Collectorate	... 700
Plains of Oomerkot	... 900
District Shahbunder	... 4,500

Total	... 6,100

"In addition to this there are about 4,000 square miles of desert to be surveyed topographically, making a grand total of more than 10,000 square miles, which will give ample work for this Division for the next 4 or 5 seasons at least; the estimated areas are roughly "calculated from charts, &c."

13. DISTRICT MAHOMEDKHAN'S TANDA.—The Surveyor proposes, on the completion of the survey of Mahomed Khan's Tanda this season, to submit a full and detailed report of the whole District, the general appearance of which is thus briefly described.

14. GENERAL DESCRIPTION OF THE COUNTRY.—"There is a great sameness in appearance, and characteristics, spreading over the whole of this tract. It is flat and level, and covered for the most part, with bush jungle composed of wild caper and other indigenous shrubs. Here and there low-lying "chunns" (or hollows) are to be found, whose presence is generally indicated by a grove of Babool trees. Fair roads, bridged and unbridged, and numerous canals and irrigation cuts, intersect the country in every direction. The Villages are not very numerous or large in size. They are built entirely of mud. Tanks are very rare. The population is sparse. Towards the north there is a fair amount of cultivation, but as one proceeds south towards the Runn, extensive sandy wastes are met with."

15. SURVEY OF PLAINS OF OOMERKOT.—In para. 16 of last Report I mentioned that I had again addressed the Commissioner of Sind on the subject of the survey of the "plains of Oomerkot" and advised that "the survey be delayed;" to this he replied, "I concur with you in thinking that the survey (of Oomerkot plains) be delayed in such manner as "to afford first class maps, and thus avoid the expense of a double survey."

16. I have also arranged with the Political Superintendent of Thur Parkur "for a complete boundary survey of all principal holdings in this tract of country." And the sanction of the Commissioner of Sind has been obtained to the arrangement proposed.

17. The Sind Revenue Surveyor will take up the survey of these plains in accordance therewith; and he has further been directed to arrange his field work in following seasons so as to employ his parties in surveying the dry and healthy parts of the country, such as the Oomerkot plains, and the remaining desert tracts to the Eastward, during the early portion of the

