

CHAPTER XV.

SURVEY AND DEMARCATION.

380. The first step towards the beginning of the survey was the demarcation of the village boundaries. This was done, by revenue officers under the orders of the Collectors of the districts, by erecting small bamboo sticks, with earthen mounds at their bases, at the trijunction and salient points of the village boundaries. The demarcation officer was supplied with lists of villages and issued a proclamation, under Section 5 of the Survey Act, V. B. C. of 1875, to the owners and occupiers of the lands about to be demarcated. Then he proceeded to the spot and marked on the ground the boundaries as pointed out by the villagers, sending lists of the villages and the boundary marks to the officer in charge of the survey.

When the work began, the villages demarcated were those shown in the last settlement papers, and in Puri and Cuttack the work was practically finished before the orders to demarcate the recognised local village came into force.

381. The traverse survey of the temporarily-settled estates of the Puri District began in 1889-90 under the supervision of Mr. Patterson, and in 1890-91 the work was in full swing. The party was divided into three sections, two under Mr. Ewing and Mr. Madras being engaged on cadastral work in Puri and Cuttack respectively, and the third on traverse only. In the following season the number of sections was increased to five, three for the cadastral and two for the traverse survey. In the first two seasons the unit of traverse survey was the settlement village as demarcated, but in 1891 it was decided to follow the revenue survey instead and ultimately, as a slavish adherence to the revenue survey was found impracticable, the existing village as pointed out by the villagers was made the unit. All traverse work was plotted roughly on the 4" scale and comparisons were made with the old 4" village maps of the former survey, and wherever any serious difference was found it was noted for the information of the Settlement Department. In practice such notes were rarely if ever made, and there is no trace of them in the records. Differences in area were generally detected and recorded at the attestation stage. All *tahsilalahida* blocks* over 50 acres in area were also traversed round but not plotted separately, *i. e.*, they were plotted and surveyed with the village in which they lay.

In the earlier traverse the *tahsilalahida* lands were commonly plotted and mapped separately, but this error was in most cases subsequently rectified.

In Kokhuakhand and Tapankhand and other Paraganas near Cuttack villages were found wholly lying within other villages. They have for settlement purposes been treated as separate villages, but they are all on one map and have generally been given a single number. In the Puri District some difficulty was caused by Khurda lands lying within Puri villages. These, though shown on the map of the Puri villages, were for all settlement purposes treated as part of the Khurda village to which they belonged, and a separate record prepared.

382. The traverse supplied to the cadastral sections skeleton village maps on the scale generally of 16"-1 mile, showing the theodolite stations. With these skeleton maps as the basis of their work the *amins* mapped the village boundary and plotted in the fields on the "quadrilateral" system as laid down in Chapter 6, Part II. of the Survey and Settlement Manual of 1895.

383. The unit of survey was the *khet* or field, consisting of all the lands of one kind lying within a single boundary and belonging to the same cultivator, as opposed to the *kita* or *kiari*, the plot or portion of a field surrounded by a *hira* or dividing *bund*. The number of *kitas* in each *khet* was however counted and shown in the settlement records and in some maps the *hiras* are marked by dotted lines (in the revision areas and Khurda, also revised).

*Vid e Chapter XIII., Paragraph 364.

In the season of 1890-91 it was found that the average size of a *kita* in Cuttack was .16 of an acre or about $2\frac{1}{2}$ to the field, and in Puri about $1\frac{1}{2}$ to the field, so that if every *kita* had been separately mapped the number of plots, and therefore the size of our records, would have been about doubled.

384. With the exception of those of the revision survey area and of the large towns all maps were prepared on the scale of 16"=1 mile, but where, as often was the case, it was not found possible to show all the details of the village site on that scale, the houses and homesteads were taken out and shown in the margin of the map on the 32" or 64" scale.

385. Cuttack town was surveyed in 1894-95 on a scale of 64"=1 mile, the Cantonments only, which had been previously surveyed on a 12" scale, being omitted from the maps. Other large towns, such as Balasore, Bhadrak, Jajpur, Kendrapara, Chandbali, were surveyed on the 32" and occasionally on the 64" scale.

386. All trijunction points were marked with stones obtained at a cost of Rs. 56.4 per 100 delivered at any convenient centre. Smaller stones costing Rs. 37.8 per 100 were originally used to mark the satellite stations of each trijunction, but early in the season of 1891-92 orders were given that the smaller stones should be embedded at stations at intervals of about 40 chains, taking care that each stone was so placed that the stations in advance and behind it might be visible. Other stations were marked only by a little mound of earth with a small clay cylinder embedded.

387. An attempt was made to use *patwaris* and local *amins* for the cadastral survey and the writing of the record, but the progress made was very unsatisfactory. The Surveyor-General's report for 1890-91 shows that owing to the slow rate of progress made by the Uriya *amin*, and the consequent increased expenditure on cooly labour, the cost amounted to anna 1 pie 9 per acre against pie 9 in the case of a second class Hindustani *amin*. *Amins* were paid at the contract rate of Rs. 3 per 100 acres and only earned Rs. 3 to Rs. 4 per month; *patwaris* were paid nothing, so that the total cost per acre in their case came to anna 1 pie 3 for coolies.

In 1892 Lieut. Crichton, then in charge of the survey, wrote:—

"The Uriya will do no more work than he is absolutely obliged to do in order to obtain a bare living. It is only by the closest supervision and constant coercion that the Uriya *amin* can be prevailed upon to produce a moderate day's outturn of work. As a Surveyor his laziness makes him practically useless; his rate of work has been proved to be this season one-fifth that of an up-country *amin*. In Orissa no labour is given free by the villagers as in the case in the Upper Provinces. Each cooly has to be paid 1 anna or 2 annas a day according as he is working in his own village or outside it. As each *amin* requires about five coolies it is evident that cooly hire is a very expensive item in Orissa, more especially so when the Uriya is employed as a field surveyor. The Uriya *amin's* out-turn being 6 acres a day and 5 or 6 annas being paid for coolies the cooly bill alone adds one anna per acre."

"In order to reduce the expenditure on detail survey, this branch of the work was gradually handed over to up-country *amins*, the Uriya being employed on *khanapuri* work."

388. In Cuttack, 364 square miles had been surveyed for the Irrigation Department on the 32" scale in 1878-79 and in 1892 the maps were revised and new records written. "The old survey was on the 32"=1 mile scale, and the original unit of survey was the *kita* (each *kita* having a number and its area extracted), and there was no distinction made on the map by which the "field" or occupancy of the cultivator *khet* could be recognised; nor had the house in the villages been separated from the fields or compounds. The revision procedure adopted was to give the *Khanapuri amin* the map, and he, while he did the *Khanapuri* ascertained which lines on the map, denoted the boundaries of a *khet* and which the *kitas*, the latter he scored across in red ink and then gave a number to the *khet*. On the traces the *kitas* have been, and on the fair maps will be, shown by dotted lines. In cases where the *khet* had not altered since the former survey, the area was obtained by the simple addition of the areas of the *kitas* contained in it, as given in area the statement of the former survey. Where there were difference, and there were many owing to distributary canals having been cut and other changes which must be expected in a period of 14 years, areas had to be re-extracted.

The *amins* were paid Re. 1-8 per hundred acres *i. e.*, half of what² was paid for fresh survey, and the work cost about Rs. 64-14-0 per square mile; exclusive of the cost of finally dressing the records, about Rs. 16 per square mile. This was a very considerable saving on the cost of original survey and *khanapuri*, which, including traverse and stone embedding, came to about Rs. 198 per square mile in the rest of Cuttack.

In 1893-94 the maps of the Temple (*Ekhrajat*) lands in Puri prepared 1876 were revised. The cost was Rs. 7,126 for 105 square miles or Rs. 78 per square mile.

Revision of *Ekhrajat* Survey.
