

SYNOPTICAL VOLUME XXI

G. T. SURVEY OF INDIA.

THE EAST CALCUTTA LONGITUDINAL SERIES
AND
THE EASTERN FRONTIER SERIES, SEC. 23° TO 26°.

APPERTAINING TO THE
NORTH-EAST QUADRILATERAL.

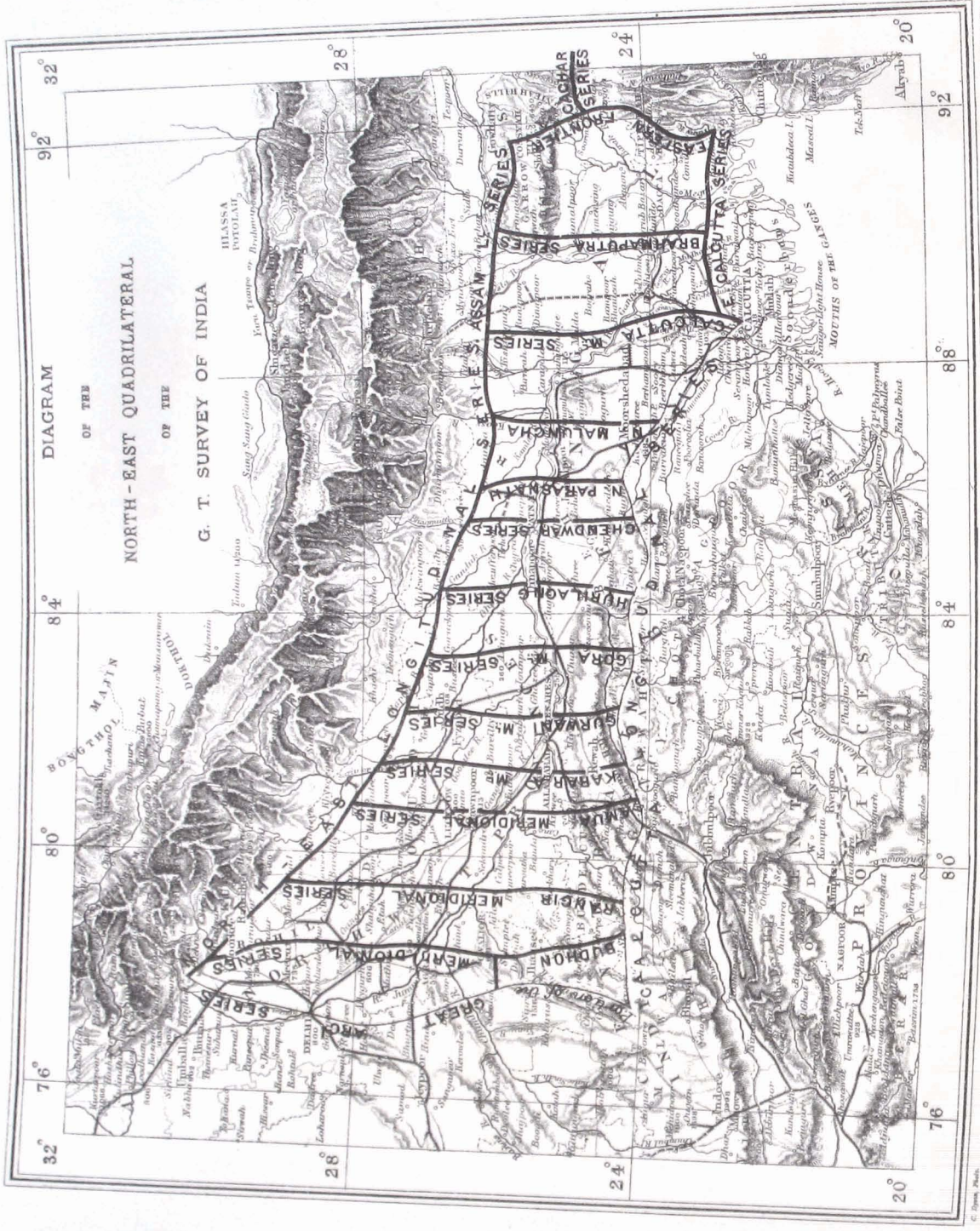


DIAGRAM
OF THE
NORTH-EAST QUADRILATERAL
OF THE
G. T. SURVEY OF INDIA

SYNOPSIS OF THE RESULTS OF THE OPERATIONS OF
THE GREAT TRIGONOMETRICAL SURVEY OF INDIA

VOLUME XXI.

DESCRIPTIONS AND CO-ORDINATES
OF THE
PRINCIPAL AND SECONDARY STATIONS AND OTHER FIXED POINTS OF
THE EAST CALCUTTA LONGITUDINAL SERIES
OR SERIES U
AND THE EASTERN FRONTIER SERIES, SEC. 23° TO 26°,
OR SERIES W
OF THE
NORTH-EAST QUADRILATERAL.

PREPARED BY
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IN CHARGE OF TRIGONOMETRICAL SURVEYS, AND HIS ASSISTANTS,

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ERRATA ET ADDENDA.

PAGE

4—U. line 3 from top

for Serampore*read* Salempur

REFERENCES.

The abbreviations employed in the text are as follows:—

h.s. denotes hill station secondary,

s. „ station secondary.

These abbreviations are only placed after stations where a theodolite has been set up and observations taken to surrounding points.

The latitudes and longitudes of all points shown on the Charts at the end of each series will be found in the text. The latter exhibits numerical values of triangles only to points of a superior class, to which alone, if exhibited on the Charts, lines are drawn: the lines are either continuous throughout, or dotted for half the length and continuous for the other half: the dots indicate that the bearing was not observed, and in such cases numerical values of azimuths are not given. For other points, difficult to identify or of comparatively less accuracy, numerical values of triangles or azimuths are not given.

October, 1883.

W. H. COLE,

In charge of Computing Office.

PREFACE.



The East Calcutta Longitudinal Series and the Eastern Frontier Series, Section 23° to 26°, are the thirteenth and the fourteenth series of the sixteen chains of triangles included in the Section of the Principal Triangulation of the Survey of India which has been named the North-East Quadrilateral. This Section embraces the area within the Meridians of 78° and 92° and the Parallels of 23° and 30°; and for reasons explained in Section 7 of Chapter I of Volume II of the *Account of the Operations of the Great Trigonometrical Survey*, its general reduction was postponed till that of the neighbouring Quadrilaterals, *viz.*, the North-West and South-East, had been completed, whereby two of the Series, the Great Arc, Section 24° to 30°, and the Calcutta Longitudinal, entering the periphery of the North-East Quadrilateral, became finally fixed. The general principles of the Simultaneous Reduction, and the procedure followed in carrying it out, are the same as have been explained in Volume II of the *Account of the Operations &c.*, and full details of the whole of the principal triangulation which is at present included in the Quadrilateral, will be found in Volumes VII and VIII of the *Account of the Operations &c.*

As however the entire contents of the volumes of the principal triangulation are not needed by geographers and surveyors, and moreover as these volumes give no details of the secondary triangulation—which is of considerable value for local requirements—it is obviously desirable that synopses of the final results of the whole of the operations, including the secondary as well as the principal triangulations, should be published for general use, in such a form as to be most suitable for convenience of reference. This has already been done as follows:—

- For the several Series forming the North-West Quadrilateral,
- I. Great Indus Series.
 - II. Great Arc, Section 24° to 30°.
 - III. Karáchi Longitudinal Series.
 - IV. Gurbágarh Meridional Series.
 - V. Rahún Meridional Series.
 - VI. Jogí-Tíla and Sulej Series.
 - VII. North-West Himalaya Series.
- For those forming the South-East Quadrilateral,
- VIII. Great Arc, Section 18° to 24°.
 - IX. Jabalpur Meridional Series.
 - X. Bider Longitudinal Series.
 - XI. Biláspur Meridional Series.
 - XII. Calcutta Longitudinal Series.
 - XIII. East Coast Series.
- } Already published.

And for the following Series of the North-East Quadrilateral,

- XIV. Budhon Meridional Series.
- XV. Rangir Meridional Series.
- XVI. Amua and Karára Meridional Series.
- XVII. Gurwáni and Gora Meridional Series.
- XVIII. Huriláong and Chendwár Meridional Series.
- XIX. North Pírasnáth and North Malúncha Meridional Series.
- XX. Calcutta and Brahma-putra Meridional Series.

} Already published.

The present is the 21st Synoptical Volume and the eighth of those appertaining to the North-East Quadrilateral; and it has been made to include both the East Calcutta Longitudinal Series and the Eastern Frontier Series, Section 23° to 26°, in one volume, because the available matter is insufficient for two volumes.

It gives the results of the whole of the triangulation executed in connection with these series, both the principal, which was executed with theodolites having azimuthal circles of 24 inches in diameter read by 5 micro-meter microscopes, and the secondary, which was executed with smaller theodolites read by verniers.

By the process of reduction which has been followed the principal triangulation has been rendered perfectly consistent, both internally and externally; internally, so that if in any one of the several polygonal figures of which the chains may be composed, calculations are carried from one station to another in every possible direction, the same results will be inevitably deduced; and externally, so that the values of the co-ordinates of any station, when computed from the given co-ordinates of any other station, with the final linear and angular data, will be the same, whether the calculation is carried directly through the series, or circuitously through any of the other chains of triangles comprising the North-East Quadrilateral. All secondary triangulations which emanate from one side of the principal series and close on another side thereof, or on a contiguous series, have also been made consistent throughout.

As regards the Introductions to each series and the Names and Descriptions of the Principal Stations, these were originally prepared for Volume VIII of the *Account of the Operations &c.*; and when a sufficient number of copies had been printed for that work, additional copies were struck off for the present Synopsis. Shortly after the secondary triangulation was adjusted in accordance with the principal, and then the printing of this volume was resumed.

The paging of each series starts from unity and is therefore not continuous throughout this volume. This was necessitated by the order of routine which had to be adopted in printing the successive subjects embraced in each and which is the same for all. The paging of each series is however distinguished by using a capital letter as a subscript to the numerals; thus all the paging which has reference to the East Calcutta Longitudinal Series has the subscript *U*, and that to the Eastern Frontier Series, Section 23° to 26°, the subscript *W*.

The data given in this volume are the following:—

First (pages 1—*U*, 1—*W*), alphabetical lists of the names of the principal stations, showing the numbers assigned to them, which were employed in the reductions as being more convenient to use than names.

Second (pages 2—*U*, 2—*W*), numerical lists giving the names corresponding to the numbers.

Third (pages 3—*U*, 3—*W*), descriptions of the principal stations—of their structure and positions—as taken from the original records of the observations, and supplemented by Addenda (pages 11*—*U*, 11*—*W*.) giving the most recent information of their condition which has been received up to date.

Fourth (pages 11—*U*, 11—*W*), the angles and sides of the principal triangles, numbered and arranged in order in the case of the East Calcutta Longitudinal Series from west to east and in that of the Eastern Frontier Series, Section 23° to 26°, from north to south.

Fifth (pages 15—*U*, 17—*W*), the angles and sides of certain secondary triangles. The numbering is here made consecutive to that of the principal triangles, in order to facilitate references which are made in other sections to the place where the length of a side is to be found.

Sixth (pages 17—*U*, 24—*W*), the azimuths of surrounding stations and points, at principal, principal-auxiliary, and secondary stations, the latter arranged in alphabetical order.

Seventh (pages 20—*v*, 31—*iv*), the co-ordinates and descriptions of all stations and points arranged in alphabetical order.

The heights of the stations of the East Calcutta Longitudinal Series and of the Eastern Frontier Series, Section 23° to 26°, were adjusted as follows:—A circuit was formed of which the right-hand branch commenced from Chinsurah and Boga of the Calcutta Meridional Series and passing *viâ* the East Calcutta Longitudinal and the Brahmaputra Series, closed on the stations Alangjâni and Sâmding of the Assam Longitudinal Series, and the left-hand branch commenced from Kanchâbâri and Newâni of the North-East Longitudinal Series, and following the Assam Longitudinal Series closed on the same stations. This gave closing errors $-2\cdot3$ and $+0\cdot2$ feet which being dispersed, the heights of Orfi, Hatiâra and Pâkdiha of the East Calcutta Longitudinal Series became available as fixed data for originating the right-hand branch of a second circuit carried along the remaining portion of the East Calcutta Longitudinal Series, and those of Partâbganj, Dhubri and Sâmding of the Assam Longitudinal Series for the left-hand branch *viâ* the remaining portion of the Assam Longitudinal Series and the section of the Eastern Frontier Series embraced in this volume: these two branches closed on the stations Sogaria and Gojalia, where the East Calcutta Longitudinal Series unites with the Eastern Frontier Series. The second circuit exhibited errors of $+13\cdot3$ and $+12\cdot7$ feet. In both circuits the mean of the errors at the closing stations were the quantities dispersed. The datum to which all heights have been referred is the mean sea level of Karâchi (Kurrachee). It may be here stated that all trigonometrically determined heights invariably refer to the upper surfaces of the central masonry pillars which are constructed for the instruments to stand on.

It has not been considered necessary to publish the whole of the details of the secondary triangulation; the sides and angles of 31 triangles for the East Calcutta Longitudinal Series and of 142 triangles for the Eastern Frontier Series, Section 23° to 26°, which were selected as most likely to be of future use, and the azimuths of all these sides, have been given; but for a number of other points the co-ordinates only have been given. With the aid of Nos. X, XI and XII of the *Auxiliary Tables to facilitate calculations of the Survey Department of India*, Dehra Doon 1868, local surveyors, working on a system of rectangular co-ordinates, can readily transform the spheroidal co-ordinates here given to suit their own requirements.

The Longitudes depend on an astronomically determined value of the longitude of the Madras Observatory, $80^{\circ} 17' 21''$, which was deduced about the year 1815. There has long been reason to believe that this value was about 3' too great; but, pending the final determination of the longitude of the Madras Observatory, it has not been considered desirable to alter the value, which has therefore been maintained up to the present time. An electro-graphic determination of the longitude of Madras from Greenwich, commencing with the difference between Suez and Greenwich—determined, in 1874, under the superintendence of the Astronomer Royal—was completed in 1877 by the determination of the difference between Suez and Madras, by Captains Campbell and Heaviside, as a part of the operations of this Survey. The combined result places the Observatory at Madras in Long. $5^{\text{h}} 20^{\text{m}} 59^{\text{s}} \cdot 42 = 80^{\circ} 14' 51'' \cdot 30$. Thus the following precept may be accepted with considerable confidence,—

**All the values of longitude in this volume require a constant correction,
probably of $-2' 30''$.**

The orthography of Indian names in the present volume is in accordance with the provincial lists of spellings constructed under the immediate orders of the Government of India, the newly authorised spellings were adopted for all names and other words contained in these lists; but for words for which there was no specific authority, the spellings have been framed in accordance with the methods followed in the preparation of the published lists, reference being made in the present instance more particularly to the Gazetted Lists for Bengal and for Assam. As a general rule the pronunciations of the vowels are as follows:—*a* has a variable sound as in woman, rural, poultry; *â* as in tartan; *i* as in bit; *î* as in ravine; *u* as in bull; *û* as in rural; *o* as in note; *e* as *a* in say; *au* as *ou* in cloud; *ai* as *i* in ride.

The Charts accompanying this volume show the whole of the principal stations and triangulation, the positions of all the secondary points, and those portions of the secondary triangulations of which full details of the

angles, sides and azimuths are given. With the aid of the Charts it is hoped that little difficulty will be met with in finding out any of the data which may be required. The descriptions of the secondary stations are in some cases not as full and clear as is to be desired: this arises from the inadequacy of the information entered on the spot by the surveyors in their field books; every effort has been made to supplement the field books, whenever it was found practicable to do so, in order to facilitate the future identification of the stations; and all the information which is forthcoming has now been given.

The general arrangement of this volume and the preparation of the data which it contains have been the work, at different times, of Major Herschel, R.E., F.R.S., Mr. Cole, M.A., and myself. Major Herschel moreover supervised the Simultaneous Reduction of the North-East Quadrilateral of which these Series form a portion, while the Introductions to both the Series were written by Mr. Cole. Great pains have been taken to secure the utmost accuracy in preparing the data and passing them through the press.

MUSSOOREE, }
 November, 1853. }

J. B. N. HENNESSEY,
Offg. Dy. Surveyor General,
In charge Trigonometrical Surveys.

EAST CALCUTTA LONGITUDINAL SERIES.

EAST CALCUTTA LONGITUDINAL SERIES.

INTRODUCTION.

The East Calcutta Longitudinal Series was executed in order that it might form a basis for the detailed survey of the Districts of Nuddea (Nadia), Jessore (Jashohar), Furreedpore (Faridpur), Backergunge (Bákarganj), Tipperah (Tripura) and Noakholly (Nayákháli). The original intention was that the Series should consist of a chain of polygonal figures emanating from the side Chinsurah-Boga of the Calcutta Meridional Series and conforming to the parallel of 23°. But it soon became evident, when operations were once in progress, that this intention would have to be modified, and a chain of single triangles accepted in place of polygons. For in Nuddea, where the operations were commenced, the villages are very large and close together, they are surrounded by large gardens of valuable fruit trees, some of which, such as the cocoanut and palmyra, grow to a great height: the country is quite flat, devoid of all hills, undulations or even mounds. To survey a country like this required the construction of lofty towers to surmount the curvature of the earth, and the removal of trees and houses between them to render them mutually visible, entailing heavy expenses both for building stations and in compensating the owners of the property destroyed. For these reasons the double form of series was abandoned and a chain of single triangles employed instead.

The party to undertake the operations was formed at Dehra Dún, towards the end of the recess season of 1862, and was placed under the charge of Lieutenant (now Major) Thuillier; the names of the members are given in the margin.

Season 1862-63.

PERSONNEL.

Lieut. H. R. Thuillier, R.E., 1st Assistant.
 J. W. Armstrong, Esqr., Civil Assistant.
 Mr. C. J. Carty, Civil 2nd Assistant.
 „ H. Williams, 2nd Class Sub-Assistant.
 „ G. A. Harris, 3rd „ „

On the arrival of the party at Calcutta some delay occurred before entering the field, owing to heavy rains and the inundated state of the country. But on the 1st December it was able to start by boat for Chinsurah, which was reached on the 3rd. Chinsurah station, which is situated on the top of a lofty building, was found in excellent preservation, except that the surrounding platform had been removed. From Chinsurah Messrs. Armstrong and Williams were detached to select stations on the southern flank of the Series while Lieutenant Thuillier proceeded to Boga Tower station to examine it. This tower, a hollow one, was found in fairly good condition; the mark-stone in the floor was missing, but

the lower mark, 2 feet below the surface, was found apparently undisturbed. Leaving Mr. Carty to repair the tower at Boga (I) of the Calcutta Meridional Series, and to build a platform at Chinsurah, (LXXXI) of the Calcutta Longitudinal Series, Lieutenant Thuillier accompanied by Mr. Harris undertook the selection of stations on the northern flank.

By the 20th January the stations of the first polygon had been selected and the trial lines between them cut. A month later Lieutenant Thuillier, having selected the northern stations of the next polygon and cleared the trial rays, left Mr. Armstrong, who had been somewhat delayed by heavy cutting, to complete the junction with his work, and retraced his steps to the first polygon, hoping to find some of the towers ready for observation. In this he was disappointed, not one of them having been finished. Mr. Carty had had to contend against many difficulties, not the least of which was the fact of himself and all his establishment being new to the country and the style of work in Bengal, and not even being acquainted with the Bengali language; while the natives of the district too, who had to be employed, only worked so long as he was present, and ceased as soon as he moved away. Before taking the field the magistrate of the district had been asked to instruct his subordinates to afford all requisite assistance; but their ignorance of the work that was being done, and of the necessity for ray-cutting, rendered them averse to afford aid, until towards the end of the season, when they found that the compensation promised for all damage done on the rays was actually paid.

Finding there was no present prospect of commencing final observations, Lieutenant Thuillier, leaving Mr. Harris to aid Mr. Carty and taking Mr. Williams with him, set about clearing the final rays of the first polygon. The first ray proved so expensive in compensation for trees cut down—314 fruit trees having to be felled—that he at once recognised the necessity of continuing the Series from the end of the first polygon as a chain of single triangles, which would involve a minimum of ray-cutting. This change necessitated the rejection of the sites already chosen for the second polygon. Mr. Armstrong was therefore communicated with and a new scheme furnished to him: this was on the 23rd March.

By the 2nd April the clearing of the rays of the first polygon had been sufficiently advanced to enable Lieutenant Thuillier to commence final observations: he accordingly returned to Chinsurah and having obtained a large theodolite—Troughton and Simms' 24-inch No. 2—from Calcutta, where it had been left for the time being, he commenced observations on the 7th. Both at Chinsurah and at Boga, which was next visited, work was considerably delayed by bad weather and frequent heavy storms. On the approach of the latter Lieutenant Thuillier found it advisable always to pack up the instrument in its box. From Boga, Simahát (I) and Ghatigáchhi (III) were visited and observations completed; and on the 1st May he marched for Kanakpur (V). The tower there was not quite ready and the instrument was not carried up and the tent pitched till the afternoon of the 5th. As the weather appeared threatening the instrument was left in its box and fortunately so; for about 5 P. M. a heavy storm of rain came on which lasted about an hour, and within a few minutes of its expiration, one face of the tower fell, but the platform, tent and ladder remained standing. The instrument was got down without injury, but the mishap precluded all hope of completing the first polygon this season, as the tower could not be rebuilt in time.

The design of tower usually adopted at this time consisted of a central perforated pillar of burnt brick and mortar of small diameter for the instrument to rest on, surrounded by a platform of unburnt bricks and mud 14 to 16 feet square, and the whole raised to a height of from 20 to 40 feet, according to the nature of the obstacles to be overlooked. This structure had been preferred on account of its cheapness and the rapidity with which it could be constructed, and had hitherto been found well adapted to all requirements. But it appeared to be unsuited to the rainy and moist climate of Eastern Bengal, where unburnt bricks rarely have time to dry sufficiently to be safely used in raising a structure of such considerable height.

Leaving Kanakpur Lieutenant Thuillier visited Berghom (iv) and Bira (ii) successively, and brought his season's operations to a close at the latter station on the 12th May.

The establishing of secondary points was found impracticable because of the invisibility of permanent buildings in the vicinity of the principal stations; of mosques and temples there were scarcely any, and the brick-built houses in the villages were hidden by high trees. No Revenue Survey points could be found.

Mr. Armstrong closed work on the 8th May, having selected eight stations on the new plan, extending a distance of 36 miles. He was much delayed by the heavy rain in April.

The party recessed at Calcutta, and although within a few days march of its ground, was unable to take the field again till comparatively late, owing to the unhealthiness of the low swampy lands after the breaking up of the rains. Leaving Calcutta on the 20th November, and marching *viâ* Dum-Dum (Dam-Dam) and Baraset (Bárasat), the place where work had closed the previous season was reached on the 25th *idem*.

The party had undergone considerable change since the preceding season. Mr. Armstrong had been posted to the charge of an Astronomical Party and Messrs. Carty and Williams had both left the Department. In the interval Mr. Beverley had been transferred from the Kashmir Survey; and when the party took the field, he and Mr. Harris were the only assistants with Lieutenant Thuillier. Mr. Mendes, who had been temporarily employed in the Public Works Department, joined the Series on 3rd December, but Mr. Atkinson did not join till the beginning of March. The party was therefore very weak at first, for Mr. Mendes was of course quite new to survey operations and required instruction.

Season 1863-64.
PERSONNEL
Lieut. H. R. Thuillier, R.E., 1st Assistant.
Mr. W. G. Beverley, Civil 2nd
„ G. W. E. Atkinson, 2nd Class Sub-Assistant.
„ G. A. Harris, 3rd „ „
„ J. I. Mendes, 3rd „ „

The ground having been reached, Mr. Harris was detached to make preliminary arrangements for building towers at the sites selected during the previous season; while Lieutenant Thuillier undertook the carrying of the trial rays between them. Mr. Beverley accompanied him for a few days in order to gain an insight into the work, his former service having been entirely on the hills, where ray-cutting was never necessary. By the 9th December, Lieutenant Thuillier was able to detach him with a party to work independently. Mr. Mendes after joining remained with Lieutenant Thuillier till January.

By the end of December trial lines had been cut between all the stations as far as Bágdanga (xi). Leaving Mr. Beverley to continue at this work, Lieutenant Thuillier undertook the selection of new stations to the east. The nature of the country now changed.

Hitherto it had been densely populated and tolerably free from swamps; and stations had to be selected by running a traverse along each line; but the eastern portion of Jessore, where the approximate series had now arrived, was far less thickly inhabited, and was covered by vast swamps interspersed in every direction by tidal creeks and rivers, rendering traversing impossible. Lieutenant Thuillier therefore adopted the plan of cutting a narrow glade, or ray, from each tower in the direction in which he wanted to establish a station, and then selecting the most suitable point near the intersection of the rays: he derived much assistance in laying out the lines from a map on the scale of 1-inch to the mile with which he had been provided. After selecting six new stations, which occupied him to nearly the end of January, he returned to undertake the clearing of the final rays in the western portion of the work, while he directed Mr. Beverley to clear those in the eastern portion. Mr. Mendes had early in January been told off to build stations at seven sites beyond those which had been assigned to Mr. Harris.

After clearing 150 miles of final rays Lieutenant Thuillier found the tower building had sufficiently advanced to enable him to commence observations. He therefore procured the large instrument from Calcutta where it had been retained, and set it up first at Kanakpur on the 5th March. After completing the angles at this station, the following towers were observed at in the order in which they are named, Berghom (iv), Noráda (vi), Ghiba (vii) and Piprágáchhi (viii), where observations were completed on 24th March.

While at Piprágáchhi Lieutenant Thuillier heard from Mr. Harris that the Bhátúria tower (xi), to which he would have to observe from his next station, Simlia (ix), would not be ready till the 3rd or 4th of April, owing to the unwillingness of the labourers and masons to work there on account of cholera, which was raging, and from which there were several deaths daily. Mr. Mendes's towers were also in a backward state, and final observations had accordingly to be suspended for a time.

The plan of tower adopted the preceding season had, as already stated, been found quite unsuitable to this part of Bengal, and the old form originally employed by Colonel Everest on the Great Arc Series, Section 24° to 30°, was reverted to. This was a hollow square tower built of masonry, having a central pillar 3 feet high at the top resting on strong beams let into the walls for the instrument. These towers required for their construction a large quantity of material and occupied much time in construction. As the season was so far advanced and at some of the required stations the towers had not been yet commenced, Lieutenant Thuillier caused perforated masonry pillars to be built at these stations for the instrument, surrounded by a scaffolding and platform of bamboos for the observatory tent. This kind of structure only took a few days to prepare. The stations where it was adopted are, Basantia (xiii), Báliakándi (xv), Daulatpur (xvii) and Orfi (xviii). The next season the old form of hollow square tower was reverted to, and the only other occasion when the simple pillar was employed was at Kodampur (xxix).

Lieutenant Thuillier now sent the 24-inch theodolite to Simlia, where it was left under a guard, and taking Mr. Atkinson, who had joined him early in the month, with him he went to Bhátúria and sent Mr. Harris to assist Mr. Mendes. Directing Mr. Atkinson to complete the tower, he occupied himself in clearing some of the rays which were still unfinished.

The party now became a good deal crippled by sickness among the native establishment. Fever was so prevalent that it was difficult to muster sufficient men for the carriage of instruments which could not be entrusted to coolies. This sickness continued till the middle of May.

Mr. Beverley had in the meantime completed the final rays and was directed to continue the selection of stations in advance, and he remained employed on this work till the 15th May, by which time he had selected eight stations, extending the Series a direct length of 40 miles, and had cleared 130 miles of trial rays between them. The portion of the country in which he worked was much worse than that previously traversed. Extensive swamps, intersected by a net-work of rivers, covered large tracts in the districts of Furreedpore and Backergunge, and during half the year were completely under water; the only really dry land being the banks of the rivers and streams and the village sites on raised mounds. Communication is entirely carried on by boat, but during April and May, the time that Mr. Beverley was employed there, the swamps had partially dried, leaving insufficient water for boats and being otherwise impassable.

On the 10th April, the towers being now sufficiently advanced, Lieutenant Thuillier returned to Simlia and resumed final observations. The following stations were next observed at in order;—Jháppa (x), Bháturia (xi), Bágdánga (xii), Basantia (xiii), Shubunára (xiv), Bábupur (xv) and Báliakánda (xvi), at which place observations were completed on the 16th May. The latter portion of the work had been a good deal delayed by incessant storms. No secondary triangulation could be effected from the principal stations, because of the dense jungle and orchards which surrounded each village, and there was no assistant available to undertake a minor triangulation with short sides.

No azimuthal observations were made as the meridian of $89^{\circ} 30'$ where they were first necessary was not reached till 7th May, too late in the season to commence star observations owing to the unsettled state of the weather*.

The tract of country through which the triangulation was carried, was very much opposed to trigonometrical operations, owing to the difficulty of moving about, the unwillingness of the villagers to accept employment, the apathy of the *zamindárs* (land owners) and their agents, who would have rendered great assistance in procuring labour. The district of Jessore is densely populated and abounds with all species of valuable fruit and other trees, which in places extend in plantations interspersed with huts for several miles without a break. More or less damage was necessarily inflicted in clearing rays; but compensation was always paid for all property injured.

The party returned to Calcutta on the 26th May and again recessed there. Before it once more took the field the staff underwent considerable changes. Mr. Beverley obtained his promotion, and was transferred to the Kashmir Survey on the 1st October 1864, and his place was taken by Mr. E. C. Ryall on the 1st November. Mr. Atkinson was on the same date transferred to an Astronomical Party, and the vacancy thus occasioned was made good by Mr. O'Sullivan being posted to the Series.

* The omission was supplied in December 1868 when Lieutenant Thuillier observed an azimuth at Daulatpur (xvii) in longitude $89^{\circ} 45'$ employing the stars 51 Cephei (Ilev.) and λ Ursæ Minoris.

The triangulation having now entered the unhealthy swamps of Furreedpore and Bac-

Season 1864-65.

PERSONNEL.

Lieut. H. R. Thuillier, R.E., 1st Assistant.
 Mr. E. C. Ryall, Civil 2nd Assistant.
 " G. A. Harris, 2nd Class Sub-Assistant.
 " W. J. O'Sullivan, 3rd " "
 " J. I. Mendes, 3rd " "

kergunge, about which malaria hangs for some time after the breaking up of the rains, it was not deemed safe for the party to take the field so early as usual; thus recess quarters at Calcutta were not left till the 8th December. As Mr. Ryall had to be detached on special duty, *viz.*, to connect Port Canning with Calcutta by a minor series,

Lieutenant Thuillier entered the field short-handed, and the duty of selecting stations fell on him, while his assistants were occupied in building stations and clearing rays.

Directing Messrs. Harris and Mendes to take up the building of the towers at already selected sites, Lieutenant Thuillier proceeded with Mr. O'Sullivan to the place where the approximate series had terminated the preceding season. He reached the ground on the 22nd December and at once set about selecting stations.

The first two stations selected were Kodalpur (xxix) and Kálíshpur (xxx) on the right bank of the Megna (Meghna) river; and early in January Haripur (xxxI) on the other side of the Megna was selected. Cutting the trial rays on the west of the river was found a most laborious undertaking as they passed through impenetrable jungle, with a thick undergrowth of cane-brake.

About the middle of January, finding that the towers would not be ready till late in the season—because of the difficulty of conveying materials to the sites selected—when the usual stormy weather would have set in and made it unsafe to move about in small country boats, Lieutenant Thuillier sought and obtained permission to postpone final operations till the next season, and to devote his whole energies towards completing the approximate series to its junction with the Eastern Frontier Series.

Owing to the very heavy jungle on both banks of the Megna and other large rivers running into it, operations were much retarded and Lieutenant Thuillier had only added the sites Lakhinagar (xxxII), Gupti (xxxIII) and Báshakpur (xxxIV) to the approximate series by the 15th March. He now proceeded to reconnoitre the Tipperah Hills in the neighbourhood of the portion of the Eastern Frontier Series where his own Series was to close; and having selected the side Sogaria-Gojalia, (xLVII)-(xLIX) of the Eastern Frontier Series, as the most suitable, he commenced working back towards the west, and by the end of the month had selected the sites of Chikania (xxxIX), Bijar Singh (xL) and Kadra (xxxVIII). The three intermediate stations of Patwár (xxxVII), Noagaon (xxxV) and Mátabi (xxxVI) were added in April and the approximate series stood completed by the 24th. On the 29th the camp left for Calcutta, after obtaining boats at Raypur on the left bank of the Megna. The weather was very bad and navigating the large rivers, the Megna was 8 miles wide where the Series crossed it, was very dangerous in country boats. The party took eight days to reach Burrisal (Barisál) which was usually only a 2½ days' journey. After a short stay at Calcutta the party proceeded to Mussooree (Masúri) in the Himalayas to recess.

The party having re-assembled at Calcutta on the 2nd November 1865, and Mr. Neuville having joined it on the 3rd to replace Mr. Ryall, who had been transferred to the

Eastern Frontier Series, Lieutenant Thuillier made the following dispositions and despatched his assistants into the field a few days before starting himself:—Mr. Neuville was to finish clearing the rays of the approximate series from the left bank of the Megna to the termination. Mr. Harris was to do the like for the portion on the right bank. Mr. Mendes was to build the remaining towers, eleven in number; and Mr. O'Sullivan was to examine, and repair if necessary, the two towers from which final observations were to commence and then await Lieutenant Thuillier's arrival.

Season 1865-66.

PERSONNEL.

Lieut. H. R. Thuillier, R.E., 1st Assistant.
 Mr. C. J. Neuville, Civil 2nd Assistant.
 " G. A. Harris, 2nd Class Sub-Assistant.
 " W. J. O'Sullivan, 3rd " "
 " J. I. Mendes, 3rd " "

Lieutenant Thuillier took the field on the 27th November and reached Orfi (xviii), on the 4th December, when he learnt from Mr. Harris that a large portion of his establishment including the ray carriers were ill with fever, and he had been unable to commence work. A few days later cholera broke out in Lieutenant Thuillier's camp, and the first victim, the blacksmith, was carried off in a few hours. Finding that the disease was raging violently on the left bank of the Madhumati river on which Orfi was situated, while the right bank was tolerably free from it, he proceeded to Daulatpur (xvii), on that bank, hoping that by the time observations were completed there the epidemic might have abated. In this he was disappointed, as the sickness continued with but slight mitigation all through January. Mr. Harris was attacked by it on the 15th December, and although he survived, he was so enfeebled that he was unable to take any share in the field operations during the rest of the season.

Some time was occupied in clearing final rays before observations could be made. These were commenced on the 15th December at Daulatpur, and concluded at that station on the 18th. Orfi was then re-visited, but owing to the delay in clearing the rays at that station consequent on Mr. Harris's illness, final observations were not completed there till the 10th January, when further delay was caused by the impossibility of obtaining observations to lamps, through the thick mists and vapours which rose from the swamps after sunset and continued till some time after sunrise. The only time when horizontal angles could be observed was for about 2 hours during the afternoon. In January two other stations were observed at, *viz.*, Hatiára (xix) and Baniári (xxii). During the last week in the month the work was brought entirely to a standstill from incessant rain. The whole country became submerged and it was with the greatest difficulty the party could remain under canvas, the only available places for pitching tents being the low rice fields adjoining the villages, which are quickly inundated after a heavy fall of rain.

On the 2nd February Mr. O'Sullivan was sent in advance to select a new site for the Kodalpur tower, the original site having been washed away by the Megna river during the preceding monsoon. During this month observations were completed at Kandia (xxiii), Bhátra (xxiv) and Jhaudi (xxv), great delay being still occasioned by the impossibility of employing night signals. A good deal of time was also occupied in ray clearing. It was not until the 10th March, when Lieutenant Thuillier had got beyond the vicinity of the swamps, that he was able to work at night.

Lieutenant Thuillier expected to have completed the whole Series during this field season; but by the beginning of March he found this was quite hopeless from the delays

already caused by sickness, bad weather, and otherwise. He therefore determined to cross the Megna and observe from the two stations Lakhinagar (xxxii) and Haripur (xxxi) on the left bank and work back in order to get out of the vicinity of the Megna before the north-westerly storms set in, and that he might be at Gangapur (xxviii), in Long. $90^{\circ} 30'$, at the proper time for azimuthal observations to Polaris.

Gangapur was reached on the 6th April and azimuthal observations were commenced; but clouds interfered and the periodic time for observing Polaris passed before a set of observations could be obtained. Lieutenant Thuillier next selected a pair of stars at opposite elongations, *viz.*, ϵ Ursæ Minoris and British Association Catalogue Star No. 2326, and completed observations to them on consecutive nights by the 15th April, when he closed work for the season.

No secondary triangulation could be executed as no assistant was available for the purpose. Mr. Neuville was employed during the whole season in clearing final rays through a densely wooded tract of country. Mr. Harris continued till the end of the season quite incapable of any hard out-door work. Mr. O'Sullivan worked with Lieutenant Thuillier and afterwards took over charge of Mr. Harris's work; and Mr. Mendes was employed throughout in building towers, of which he completed eleven, although from the nature of the country he had to contend with great difficulties.

The season had proved a very unhealthy one and 20 men, or about 14 per cent of the native establishment, died of cholera and fever. The mortality from cholera in December and January among the inhabitants of the districts of Furreedpore and Backergunge was very great, and some villages were almost decimated.

The party assembled again at Calcutta early in November 1866 and started for their

Season 1866-67.

PERSONNEL.

Lieut. H. R. Thuillier, R. E., 1st Assistant.
 Mr. C. J. Neuville, Civil Assistant 4th Grade.
 " F. W. Ryall, 2nd Class Sub-Assistant.
 " G. A. Harris, 3rd " "
 " W. J. O'Sullivan, 3rd " "

ground on the 28th *idem* by boat, proceeding through the Sunderbunds (Sundarbans), *viâ* Burreisal, to the left bank of the Megna river where the final operations had terminated the preceding season. The party disembarked at Raypur on the 9th December and on the 10th the assistants were detached on their several duties:—Mr. Neuville to complete

the cutting of the final rays; Mr. Ryall to execute a minor triangulation along the course of the Megna river towards Dacca (Dhâka), to determine the position of that place, and Mr. Harris to erect platforms at the stations of observation and otherwise to prepare them for Lieutenant Thuillier; Mr. O'Sullivan remained to act as observatory recorder. From Raypur Lieutenant Thuillier marched to Lakhinagar at which station observations were to commence and the instrument was got in position by the 13th. He had been previously directed to take a set of circum-polar star observations for azimuth at this station, but no circum-polar star being suitably situated at this season, he selected δ Cephei (Hev.) and λ Ursæ Minoris at opposite elongations. Considerable delay was caused by night fogs and the observations were not completed till the 19th. The rest of the month was occupied in horizontal observations at the same station and at Haripur (xxxi), only afternoon angles to heliotropes being possible on account of the fogs.

During January observations were completed at Gupti (xxxiii), Báshakpur (xxxiv) and Noagaon (xxxv), and during February at Mátabi (xxxvi), Patwár (xxxvii), Kadra (xxxviii), Bijar Singh (xl) and Gojalia, one of the terminal stations. By the 5th March the two remaining stations had been observed at and the Series was complete to its junction with the Eastern Frontier Series.

During the early part of the season the night fogs continued to cause delay, and work could only be got from heliottes in the afternoon; but as the season advanced the atmosphere became clearer.

After completing the principal observations Lieutenant Thuillier decided to remeasure the angles of the triangle xxxii-xxxiii-xxxiv because the observed values gave a large negative triangular error, *viz.*, $-2''\cdot83$. The values which he obtained on re-observation differed very materially in each instance from those first obtained, and gave a large positive triangular error, $+4''\cdot20$, as follows:—

	<i>First Measures.</i>	<i>Second Measures.</i>	<i>1st — 2nd.</i>
xxxii December 1866	59° 49' 10''·96	March 1867 17''·11	— 6''·15
xxxiii January 1867	57 33 51 '95	„ 57 '51	— 5 '56
xxxiv „ „	62 36 54 '86	„ 50 '18	+ 4 '68
	Spherical Excess 0''·60	Triangular error — 2 '83	Triangular error + 4 '20

These gross differences are very perplexing. The angles were not only measured with the same theodolite, but at two of the stations—the two last—the measures were taken over the same graduations of the azimuthal circle. The pillars on which the theodolite and signals stood were perforated, and the mark-stones at the ground level were invariably referred to, thus the angles cannot have been influenced by any deflection of the towers such as has influenced some of the angles of the North-East Longitudinal Series, see pages 65 and 66 of Volume VII. The sides of the triangle were slightly over 10 miles in length, at which distance an angle of 6" subtends about 18 inches, thus the changes in the values of the angles cannot possibly be due to errors of plumbing.

Lieutenant Thuillier reports:—“The rays were perfectly clear, and passed over ordinary ground, *viz.*, rice fields and village sites. The towers, which were hollow paka ones, the mark being referred to the ground, were well raised, which may be gathered from the fact that the vertical observations from each of the stations were taken between the hours of 1 and 2 P.M., the time of minimum refraction. The instrument also was in apparently good order. The first set of observations were taken in December and January, and the second set in March. At the former period the rice fields are all under water, and the air is laden with moisture. At the time of my second visit the water had evaporated, so that the rays now passed over a dried surface of ground. On the first occasion the signals were invariably bad, and nearly the whole of the observations were taken to heliottes, the lamps being invisible, owing to heavy fogs. On the second occasion, in March, when the atmosphere was clearer, the signals were very fair indeed, and the greater portion of the observations were taken to lamps. It

“ will be observed that the measures in each set of observations agree very fairly *inter se*, but “ there is one feature noticeable, that the values obtained from lamps are invariably larger “ than those obtained from heliotropes. These differences however are not unusually large, nor “ do they furnish any indication for anticipating the considerable constant difference that exists “ between the two sets of measures. I am thus led to the conclusion that it is owing to “ lateral refraction, acting tolerably steadily, but in different degrees at different periods of “ the season.” Lateral refraction would be caused by the presence of any obstacles, such as branches of trees, on the rays; and its amount might vary at different times of the year, with the density of the vegetation. See foot note to page 94, Volume II.

Eventually both sets of measures were employed, in combination as indicated at pages 38—v to 40—v; and this gave a triangular error of + 0"·68.

The season's triangulation lay through the densely populated districts of British Tipperah and Noakholly. This part of the country is flat and low, and being subject to heavy rains, the greater portion is for half the year under water: all the open ground is cultivated with rice. There is only one road, which can claim the title, that which leads from Dacca *viâ* Comillah (Kamilla) skirting the hills to Chittagong. The triangulation passed through extensive plantations of betel-nut, cocoa-nut and other valuable trees.

A chain of secondary triangulation was executed by Mr. Ryall, from the side Kálíshpur—Kodalpur, (xxx)—(xxix), up the river Megna towards Dacca and connected it with several Revenue Survey stations. When he closed work on the 3rd June he had completed 18 triangles covering an area of 238 square miles. The navigation of the Megna during the stormy months of April and May was a dangerous undertaking. Sometimes for 8 or 10 days at a time the passage could not be attempted. Mr. Ryall also suffered a good deal from fever.

On the completion of the measurement of the principal triangles, the field season not having yet expired, Lieutenant Thuillier proceeded to Furrcepore to commence the selection of stations for the Brahmaputra Meridional Series. This series was based on the sides Daulatpur—Hatiára, Hatiára—Kandia of the East Calcutta Longitudinal Series, and a hexagon was formed round the station Hatiára (xix), by the addition of three triangles fixing the side Maheshpur (xx)—Pákdíha (xxi). These three triangles were afterwards considered to form part of the East Calcutta Longitudinal Series, and the Brahmaputra Series is now assumed to originate from the side Maheshpur—Pákdíha.

The East Calcutta Longitudinal Series forms part of the periphery of the North-East Quadrilateral into the general reduction of which it entered. The portions of the errors which fell to the share of this Series and were dispersed throughout it are as follows:—

In Latitude	+ 0"·161
„ Longitude	— 0"·210
„ Azimuth	— 6"·464
„ Side	Log feet — 0·000,0058, or 0·8 inches per mile.

MUSSOOREE, }
October 1852. }

W. H. COLE.

ALPHABETICAL LIST OF PRINCIPAL STATIONS.

Bábpur	XVI.	Jháppa	X.
Boga (of the Calcutta Meridional Series).	I.	Jhaudi	XXV.
Bágdánga	XII.	Kadra	XXXVIII.
Báliakánda	XV.	Kálíshpur	XXX.
Baniári	XXII.	Kanakpur	V.
Basantia	XIII.	Kandia	XXIII.
Báshakpur	XXXIV.	Káyaría	XXVI.
Berghom	IV.	Kodalpur	XXIX.
Bhátra	XXIV.	Lakbinagar	XXXII.
Bháturia	XI.	Mabeshpur	XX.
Bijar Singh	XL.	Málgaon	XXVII.
Bira	II.	Mátabi	XXXVI.
Chikania	XXXIX.	Noagaon	XXXV.
Chinsurah (of the Calcutta Longitudinal Series).	LXXXI.	Noráda	VI.
Daulatpur	XVII.	Orfi	XVIII.
Gangapur	XXVIII.	Pákdíha	XXI.
Ghatigáchhi	III.	Patwár	XXXVII.
Ghiba	VII.	Piprágáchhi	VIII.
Gojalía (of the Eastern Frontier Series—Section 23° to 26°).	XLIX.	Shubunára	XIV.
Gupti	XXXIII.	Simalhát	I.
Haripur	XXXI.	Simlíá	IX.
Hatlára	XIX.	Sogaría (of the Eastern Frontier Series—Section 23° to 26°).	XLVII.

NUMERICAL LIST OF PRINCIPAL STATIONS.

LXXXI	.	.	.	Chinsurah.	XXI	.	.	.	.	Pákdíha.
	.	.	.	(of the Calcutta Longitudinal Series).	XXII	.	.	.	.	Baniári.
I	.	.	.	Boga.	XXIII	.	.	.	.	Kandia.
	.	.	.	(of the Calcutta Meridional Series).	XXIV	.	.	.	.	Bhátra.
I	.	.	.	Simalát.	XXV	.	.	.	.	Jhaudi
II	.	.	.	Bira.	XXVI	.	.	.	.	Káyaria.
III	.	.	.	Ghatigáchhi.	XXVII	.	.	.	.	Málgaon.
IV	.	.	.	Berghom.	XXVIII	.	.	.	.	Gangapur.
V	.	.	.	Kanakpur.	XXIX	.	.	.	.	Kodalpur.
VI	.	.	.	Noráda.	XXX	.	.	.	.	Kálishpur.
VII	.	.	.	Ghiba.	XXXI	.	.	.	.	Haripur.
VIII	.	.	.	Piprágáchhi.	XXXII	.	.	.	.	Lakhinagar.
IX	.	.	.	Simlia.	XXXIII	.	.	.	.	Gupti.
X	.	.	.	Jháppa.	XXXIV	.	.	.	.	Báshakpur.
XI	.	.	.	Bhátura.	XXXV	.	.	.	.	Noagaon.
XII	.	.	.	Bágdánga.	XXXVI	.	.	.	.	Mátabi.
XIII	.	.	.	Basantia.	XXXVII	.	.	.	.	Patwár
XIV	.	.	.	Shubunára.	XXXVIII	.	.	.	.	Kadra.
XV	.	.	.	Báliakánda.	XXXIX	.	.	.	.	Chikania.
XVI	.	.	.	Bábupur.	XL	.	.	.	.	Bijar Singh.
XVII	.	.	.	Daulatpur.	XLVII	.	.	.	.	Sogaria.
XVIII	.	.	.	Orfi.						(of the Eastern Frontier Series—Section 23° to 26°).
XIX	.	.	.	Hatiára.	XLIX	.	.	.	.	Gojalia.
XX	.	.	.	Maheshpur.						(of the Eastern Frontier Series—Section 23° to 26°).

EAST CALCUTTA LONGITUDINAL SERIES.

DESCRIPTION OF PRINCIPAL STATIONS.



The Principal Stations of this Series, are either perforated masonry pillars or hollow rectangular towers. The perforated masonry pillars, eleven in number, are rectangular (about 7 feet square) at base, and circular (about 3½ feet in diameter) at top, with one mark-stone at the ground level and another from 2 to 4 feet below: of these, for the accommodation of the observatory tent, the first 5 pillars, at the western extremity of the Series, are surrounded by solid towers of sun dried bricks and mud cement, 21 feet by 18 feet at base and 14 feet by 11 feet at top, while the others had *temporary* scaffolding platforms erected around them. As regards the hollow rectangular towers, there are 29 of this construction, externally 17 feet by 14 feet at base and 14 feet by 11 feet at top, with circular perforated masonry pillars—3½ feet in diameter and 3 feet in height—resting on beams let into two of the opposite walls near the summit of the towers, while the platforms for the observer, if not of a temporary nature, rest on beams which bear on the two other walls: a mark-stone is placed in the ground floor and another below it. In all perforated pillars and hollow towers access to the ground level mark is obtained by a passage constructed for the purpose. For more detailed descriptions of all such structures see pages 44 to 46 of Vol. II of *the Account of the Operations &c.*

The following descriptions have been compiled from those given by the officer who executed the Series, supplemented as regards adjacent villages from information obtained from other original records of the Series, and corrected, so far as the local sub-divisions in which the several stations are situated, from the latest Annual Reports furnished by the District officers to whose charge the stations are committed.

LXXXI.—(*Of the Calcutta Longitudinal Series*). Chinsurah Station, lat. 22° 53', long. 88° 27'—observed at in 1845 and 1863—is on the roof of the Hooghly, or Saiyid Mohsin's College, at the intersection of two of the walls; thána Chinsurah, pargana Arsa, district Hooghly.

A mark-stone was imbedded in the wall and a pillar 9 feet high with another mark at its surface was built over it, the height of the upper mark being 51 feet above the ground. The station was revisited in 1863 for the purpose of originating the East Calcutta Longitudinal Series, but no alteration in its construction was made.

I.—(*Of the Calcutta Meridional Series*). Boga or Notun Boga Tower Station, lat. $23^{\circ} 4'$, long. $88^{\circ} 27'$ —observed at in 1845 and 1863—is situated in the fields, thána Ballagarh, pargana Serampore, district Hooghly.

The tower is hollow, 43·42 feet high and has the usual mark in the ground floor. The station was again visited in 1863 for the purpose of originating the East Calcutta Longitudinal Series, but no alteration in its construction was made.

I. Simahát Tower Station, lat. $22^{\circ} 58'$, long. $88^{\circ} 35'$ —observed at in 1863—is on N. side of the village of that name; thána Jáguli, pargana Panchpur, district Nuddea.

The pillar is perforated, 37·93 feet high and has a mark in the ground floor and another below in the foundation. The directions and distances of the circumjacent villages are:—Ganguria E., mile 0·3; Balmili W., mile 0·8.

II. Bira Tower Station, lat. $22^{\circ} 48'$, long. $88^{\circ} 36'$ —observed at in 1863—is on the bank of a tank in the midst of *pán* (Betel leaf) fields in the village of Bira, and about $1\frac{1}{4}$ miles N. of the road from Calcutta to Jessore; thána Hábra, pargana Amírpur, division Baraset, district 24-Pergunnahs.

The pillar is perforated, 34·73 feet high and has a mark in the ground floor and another below in the foundation.

III. Ghatigáchhi Tower Station, lat. $23^{\circ} 7'$, long. $88^{\circ} 36'$ —observed at in 1863—is in a field adjoining the main road from Calcutta to Kishnaghur; thána Chogdah, pargana Panchpur, sub-division Ránaghat, district Nuddea.

The pillar is perforated, 32·67 feet high and has a mark in the ground floor and another below in the foundation. The azimuths and perambulated distances of the circumjacent villages are:—Hudá $322^{\circ} 50'$, mile 0·33; Ghatigáchhi $222^{\circ} 6'$, mile 0·52.

IV. Berghom or Berghom Kistonagar Tower Station, lat. $22^{\circ} 52'$, long. $88^{\circ} 45'$ —observed at in 1863 and 1864—is on the bank of a tank at the southern border of the village of that name; thána Hábra, pargana Amírpur, division Baraset, district 24-Pergunnahs.

The pillar is perforated, 33·24 feet high and has a mark in the ground floor and another below in the foundation. The azimuths and perambulated distances of the following places are:—Berghom Khángáh (Muhammadan shrine) $73^{\circ} 19'$, mile 0·41; Pattábuká village (tank) $139^{\circ} 55'$, miles 1·11.

V. Kanakpur Tower Station, lat. $23^{\circ} 3'$, long. $88^{\circ} 45'$ —observed at in 1864—is on the western border of the small village of that name; thána Gopálnagar, pargana Srínagar, district Nuddea.

The pillar is perforated, 32·58 feet high and has a mark in the ground floor and another below in the foundation. The azimuths and perambulated distances of the circumjacent villages are:—Patantoná $51^{\circ} 48'$, mile 0·65; Bhawánípur (S.W. extremity) $127^{\circ} 52'$, mile 0·50.

VI. Noráda Tower Station, lat. $22^{\circ} 58'$, long. $88^{\circ} 53'$ —observed at in 1864—is in open ground about $\frac{1}{2}$ a mile N.W. of the small village of that name, and 150 yards E. of the Dumá lake; thána Gaigháta, pargana Khashda, district Nuddea.

The tower is hollow, 35·00 feet high and has a mark in the ground floor and another $2\frac{1}{2}$ feet below. The Ichchámáti river flows at a distance of $\frac{1}{2}$ a mile E. of the station. The azimuths and perambulated distances of the circumjacent villages are:—Bardhanbária $197^{\circ} 40'$, mile 0·87; Jáliápára $229^{\circ} 10'$, mile 0·80.

VII. Ghiba Tower Station, lat. $23^{\circ} 5'$, long. $88^{\circ} 56'$ —observed at in 1864—is on

the western bank of a small nullah (watercourse), and $\frac{1}{4}$ of a mile E. of the village of the same name; thána Shárbhá, pargana Jaypur, district Nuddea.

The tower is hollow, 37·84 feet high and has a mark in the ground floor and another below in the foundation. The azimuths and perambulated distances of the circumjacent villages are:—Danakholá 245° 6', mile 0·27; Sarbanjhadá 6° 29', mile 0·80.

VIII. Piprágáchhi Tower Station, lat. 22° 59', long. 89° 2'—observed at in 1864—is on the N.W. border of the small village of that name, and about 250 yards W. of the Bhetna nullah (water course); thána Shárbhá, pargana Mulghar, district Nuddea.

The tower is hollow, 31·00 feet high and has a mark in the ground floor and another below in the foundation. The azimuths and perambulated distances of the circumjacent places are:—Samtá village Bazar 170° 12', mile 0·90; Deoli Indigo Factory 213° 47', mile 0·52; Piprágáchhi Indigo Factory 26° 38', mile 0·49.

IX. Simlia Tower Station, lat. 23° 7', long. 89° 4'—observed at in 1864—is on the eastern bank of a small khál (rivulet), N. of the village of the same name, and at a distance of about 320 yards from the Bazar; thána Gadkháli, pargana Mulghar, district Jessore.

The tower is hollow, 33·29 feet high and has a mark in the ground floor and another 2½ feet below.

X. Jháppa Tower Station, lat. 23° 0', long. 89° 11'—observed at in 1864—is on the southern bank of a large baor (a piece of water) near its western extremity, and about $\frac{1}{4}$ a mile N. of an old shiwárá (temple), in ruins, in the village of Jháppa; thána Manirámpur, pargana Dantia, district Jessore.

The tower is hollow, 32·78 feet high and has a mark in the ground floor and another 2 feet below. The azimuths and perambulated distances of the circumjacent villages are:—Málikpur 113° 53', mile 0·74; Kamalpur 211° 2', mile 0·56.

XI. Bháturia Tower Station, lat. 23° 8', long. 89° 14'—observed at in 1864—is on the eastern border of the northern hamlet of the village of the same name, and about $\frac{1}{4}$ of a mile from the southern hamlet; thána Jessore, pargana Ahmadpur, district Jessore.

The tower is hollow, 36·24 feet high and has a mark in the ground floor and another 2 feet below. The Civil Station of Jessore is about 3 miles N.E. of the station, and the village of Jáliápára 1 mile to the E.

XII. Bágdángá Tower Station, lat. 23° 0', long. 89° 20'—observed at in 1864—is on the eastern border of the village of the same name, and about $\frac{1}{4}$ a mile from the southern extremity; thána Manirámpur, pargana Usafpur, district Jessore.

The tower is hollow, 39·07 feet high and has a mark in the ground floor and another 2 feet below. The azimuths and perambulated distances of the circumjacent villages are:—Bhulbária 194° 20', miles 1·19; Pariáhi 333° 36', mile 0·45.

XIII. Basantia Tower Station, lat. 23° 8', long. 89° 25'—observed at in 1864—is in the lands of the large and scattered village of that name, and about $\frac{1}{4}$ mile S.E. of the Bazar; thána Jessore, pargana Saidpur, district Jessore.

The pillar is perforated, 42·10 feet high and has a mark in the ground floor and another 4 feet below. The Bhairab river flows about 250 yards E. of the station.

XIV. Shubunára Tower Station, lat. 23° 0', long. 89° 31'—observed at in 1864—is in the large village of that name which extends for some distance along the left bank of the

Bhairab river, it is about $\frac{1}{4}$ a mile from the northern extremity of the village and $\frac{1}{4}$ mile from the left bank of the river; thána Narail, pargana Usafpur, sub-division Narail, district Jessore.

The tower is hollow, 41·30 feet high and has a mark in the ground floor and another 2 feet below. The azimuth and perambulated distance of Cháchupára village are $201^{\circ} 28'$, mile 0·90.

XV. Báliakánda Tower Station, lat. $23^{\circ} 8'$, long. $89^{\circ} 34'$ —observed at in 1864—is at the S.W. extremity of the small village of that name, and about 3 miles S.E. of the sub-divisional station of Narail; thána Narail, pargana Naldi, district Jessore.

The pillar is perforated, 40·25 feet in height of which the first 5 feet above ground level is solid and the remainder perforated, and contains two marks, the lower at the ground level and the upper 5 feet above it. The azimuths and perambulated distances of the circumjacent villages are:—Badrobila Bazar $175^{\circ} 52'$, mile 0·44; Atair Hát $339^{\circ} 59'$, mile 0·80; Poloidangá $83^{\circ} 31'$, mile 0·17.

XVI. Bábupur Tower Station, lat. $23^{\circ} 1'$, long. $89^{\circ} 39'$ —observed at in 1864—is at the southern extremity of the village of the same name, and about $\frac{1}{4}$ a mile from the southern extremity of Kalsu village; thána Kália, pargana Naldi, sub-division Narail, district Jessore.

The tower is hollow, 40·31 feet high and has a mark in the ground floor and another $2\frac{1}{2}$ feet below. This station was reported by the district officer in April 1870 to have been blown down by a cyclone.

XVII. Daulatpur Tower Station, lat. $23^{\circ} 9'$, long. $89^{\circ} 45'$ —observed at in 1865 and 1868—is at the southern border of the Rádhanagar Bazar, and about $\frac{1}{2}$ a mile due N. of the Daulatpur Indigo Factory; thána Lohágara, pargana Mokimpur, sub-division Narail, district Jessore.

The pillar is perforated, 43·19 feet high and has a mark in the ground floor and another below in the foundation. The azimuths and perambulated distances of the circumjacent villages are:—Kumárdanga (E. extremity) $56^{\circ} 11'$, mile 0·17; Daulatpur Indigo Factory (bungalow) $355^{\circ} 24'$, mile 0·45; Rádhanagar shiwála (temple) $153^{\circ} 12'$, mile 0·23. When the station was visited in 1868 for the purpose of originating the Brahmaputra Series no alteration in its construction appears to have been made.

XVIII. Orfi Tower Station, lat. $23^{\circ} 1'$, long. $89^{\circ} 50'$ —observed at in 1865 and 1866—is in the southern hamlet of the village of Orfi on left bank of the Madhumati river, and about $1\frac{1}{2}$ miles S.E. of the Orfi Bazar; thána Gopálganj, pargana Mokimpur, district Furreedpore.

The pillar is perforated, 40·36 feet high and has a mark in the ground floor and another below in the foundation. The azimuths and distances of the circumjacent villages are:—Poisdanga (S.E. extremity) $45^{\circ} 10'$, mile 0·14; Dondia (S. extremity) $196^{\circ} 35'$, mile 0·45.

XIX. Hatiára Tower station, lat. $23^{\circ} 9'$, long. $89^{\circ} 55'$ —observed at in 1866 and 1868—is at the western extremity of the village of that name, and about $2\frac{1}{2}$ miles N.E. of the Ghonápára Bazar; thána Maksúdpur pargana Telí Hátí, district Furreedpore.

The tower is hollow, 37·36 feet high and has a mark in the ground floor and another about 2½ feet below in the foundation. The station was again visited in 1868 for the purpose of originating the Brahmaputra Series, but no alteration in its construction was made. Poisar village lies about $\frac{1}{2}$ a mile W. of the station.

XX. Maheshpur Tower Station, lat. $23^{\circ} 17'$, long. $89^{\circ} 49'$ —observed at in 1868 and 1869—is at the northern edge of the village of that name, about 80 yards S. of a khál (rivulet) which skirts the village; thána Maksúdpur, pargana Telí Hátí, district Furreedpore.

The tower is hollow, 33·25 feet high above the upper mark, which is a little below the surface of the ground, and the lower about 2½ feet below in the foundation. The directions and distances of the circumjacent villages are:—Jaynagar Hát S.S.W., mile 0·7; Dastan N.N.W., mile 0·4; Hegládanga E.S.E., mile 0·75; Magorá W., mile 1; and the Habra Indigo Factory W.S.W., miles 1·88.

XXI. Pákdihá Tower Station, lat. 23° 17', long. 90° 0'—observed at in 1868—is in open ground about 200 yards S.E. of the southern extremity of the village of Pákdihá; thána Maksúdpur, pargana Satara Hazár, district Furreedpore.

The tower is hollow, 38·32 feet high and has two marks, the upper a little below the surface of the ground and the lower about 2½ feet below in the foundation. The directions and distances of the circumjacent villages are:—Bagháda S.E., mile 0·6; Dhobadi S.W., mile 0·5; Agdia N.W., mile 1.

XXII. Baniári Tower Station, lat. 23° 1', long. 90° 1'—observed at in 1866—is in open ground in the village of that name, and 2¼ miles N.W. of Ghagur Hát; thána Kotálpára, pargana Kotálpára, sub-division Madareepore, district Furreedpore.

The tower is hollow, 38·42 feet high and has a mark in the ground floor and another below in the foundation. The azimuths and perambulated distances of the circumjacent villages are:—Munshir Hát 293° 58', mile 0·56; Kasulá (tank) 295° 23', mile 0·25; Kandikismat 101° 15', mile 0·33; Baniári (tank) 186° 58', mile 0·14.

XXIII. Kandia Tower Station, lat. 23° 10', long. 90° 6'—observed at in 1866 and 1868—is at the southern extremity of the village of Kandia, which is bordered on the north by the larger and better known village of Ámgaon. To the east, south and west are expansive jhils (marshes) which extend for many miles. The station is in thána Madareepore, pargana Fatehjangpur, sub-division Madareepore, district Furreedpore.

The tower is hollow, 37·00 feet high and has a mark in the ground floor and another about 2½ feet below in the foundation. The azimuths and perambulated distances of the following places are:—Kandia village shiwála (temple) of Nilmáhab Rái 197° 47', mile 0·46; Kandia village shiwála (temple) of Padda Lochan Rái 212° 22', mile 0·55. When the station was visited in 1868 for the purpose of originating the Brahmputra Series no alteration in its construction was made.

XXIV. Bhátra or Ahoti Bhátra Tower Station, lat. 23° 1', long. 90° 10'—observed at in 1866—is on an isolated mound S. of the village of Ahoti Bhátra, and about 150 yards N. of the boundary between this village and Telí Bhátra; thána Gournadi, pargana Bangrorá, sub-division Madareepore, district Backergunge.

The tower is hollow, 38·58 feet high and has a mark in the ground floor and another below in the foundation. The azimuths and perambulated distances of the circumjacent villages are:—Telí Bhátra (centre of N. extremity) 354° 0', mile 0·09; Rámsbil (E. extremity) 48° 43', mile 0·55.

XXV. Jhaudi Tower Station, lat. 23° 9', long. 90° 16'—observed at in 1866—is in open ground at the northern extremity of the village of the same name, and about 2¼ miles S.S.E. of the sub-divisional station of Madareepore; thána Madareepore, pargana Birmohan, sub-division Madareepore, district Furreedpore.

The tower is hollow, 37·14 feet high and has a mark in the ground floor and another below in the foundation. The Ariákhán river flows ¼ a mile E. of the station. The azimuth and perambulated distance of Brámandi village are 262° 8', mile 0·43.

XXVI. Káyaria Tower Station, lat. 22° 59', long. 90° 20'—observed at in 1866—is in the village of that name on a spit of land formed by the Áriákhán river which is

about $\frac{1}{2}$ of a mile due N. of the station and $\frac{1}{2}$ of a mile due S. of it; thána Gournadi, pargana Kásimpur Sehlapati, sub-division Madareepore, district Backergunge.

The tower is hollow, 39.50 feet high and has a mark in the ground floor and another below in the foundation. The tower was reported by the district officer in November 1870 to have been washed away by the Ariákhán river.

XXVII. Málgaon Tower Station, lat. $23^{\circ} 8'$, long. $90^{\circ} 25'$ —observed at in 1866—is situated about the centre of the southernmost hamlet of the village of Málgaon; thána Pálang, pargana Idilpar, sub-division Madareepore, district Furreedpore.

The tower is hollow, 36.58 feet high and has a mark in the ground floor and another below in the foundation. The azimuths and perambulated distances of the circumjacent villages are :—Dánukati $262^{\circ} 48'$, miles 1.25; Báhír Char (N.E. extremity) $326^{\circ} 26'$, mile 0.42.

XXVIII. Gangapur Tower Station, lat. $23^{\circ} 0'$, long. $90^{\circ} 30'$ —observed at in 1866—is at the southern extremity of the most western portion of the scattered village of Gangapur and a short distance E. of a small khál (rivulet), which separates it from the village of Báhír Char; thána Mendiganj, pargana Srírampur, district Backergunge.

The tower is hollow, 38.73 feet high and has a mark in the ground floor and another below in the foundation. The Nayabhángani river is about $\frac{1}{2}$ mile W. of the station. The azimuths and perambulated distances of the circumjacent villages are :—Abupur Hát $199^{\circ} 30'$, miles 1.73; Tom Char (W. extremity) $5^{\circ} 44'$, mile 0.84. The tower was found by Captain Thuillier in October 1870 partly fallen down, the walls were then dismantled to a height of 11 feet all round, and a pyramidal pillar 5 feet square at base and 5 feet in height was built over the mark-stone in the ground floor.

XXIX. Kodalpur Tower Station, lat. $23^{\circ} 9'$, long. $90^{\circ} 33'$ —observed at in 1866—is on the right bank of the Megna; thána Mulfatganj, pargana Bikrampur, district Dacca.

The pillar is perforated, 38.33 feet high and has a mark in the ground floor and another below in the foundation. The azimuths and perambulated distances of the circumjacent villages are :—Kodalpur $8^{\circ} 29'$, mile 0.48; Char Bhaera $82^{\circ} 58'$, mile 0.83; Chai Char $123^{\circ} 55'$, miles 1.03. This station was reported by the district officer in October 1868 to have been washed away by the Megna.

XXX. Kálíshpur Tower Station, lat. $23^{\circ} 0'$, long. $90^{\circ} 39'$ —observed at in 1866—is on the right bank of the Megna, at the N.E. border of the village of Kálíshpur and a short distance S. of the Srírampur river at its junction with the Megna; thána Mendiganj, pargana Majjardi, district Backergunge.

The tower is hollow, 38.31 feet high and has a mark in the ground floor and another below in the foundation. The tower was reported by the district officer in February 1875 to have been washed away by the Megna.

XXXI. Haripur Tower Station, lat. $23^{\circ} 9'$, long. $90^{\circ} 43'$ —observed at in 1866 and 1867—is on the bank of a tank in the lands of the village of Haripur; thána Narsingpur, pargana Isápura, district Tipperah.

The tower is hollow, 37.90 feet high and has a mark in the ground floor and another below in the foundation. Madna village is a short distance W. of the station. Shortly after completion of the observations to and from this station, the upper mark-stone was found to have been removed, but the lower appeared not to have been tampered with; another upper mark was inserted in the ground floor which is believed to be in the normal of the lower.

XXXII. Lakhinagar Tower Station, lat. $23^{\circ} 1'$, long. $90^{\circ} 48'$ —observed at in 1866 and 1867—is in the lands of the village of that name, about $1\frac{1}{2}$ miles due E. of the left bank

of the Megna, and $1\frac{1}{4}$ miles S. of Raipur Hát; thána Lakhipur, pargana Bhulloah, district Noakholly.

The tower is hollow, 38·15 feet high and has a mark in the ground floor and another below in the foundation.

XXXIII. Gupti Tower Station, lat. $23^{\circ} 9'$, long. $90^{\circ} 53'$ —observed at in 1867—is on the bank of a tank in the southern portion of the village of the same name; thána Tubki-bagrá, pargana Shingargaon, district Tipperah.

The tower is hollow, 38·78 feet high and has a mark in the ground floor and another below in the foundation. The azimuths and distances of the following places are:—Jagadánanda's temple $348^{\circ} 47'$, mile 0·58; Báchhá Gázi's masjid $340^{\circ} 33'$, mile 0·81; Khosá Muhammad's masjid $8^{\circ} 53'$, mile 0·92.

XXXIV. Báshakpur Tower Station, lat. $23^{\circ} 1'$, long. $90^{\circ} 58'$ —observed at in 1867—is on the bank of a tank some 6 feet above the general level of the country, and near the N.E. extremity of the village of that name; thána Lakhipur, pargana Bhulloah, district Noakholly.

The tower is hollow, 37·43 feet high and has a mark in the ground floor and another below in the foundation. The Thákur Hát in the Sompára village is about $\frac{1}{2}$ a mile N.W. of the station; and Kundra Páurám temple about $1\frac{1}{4}$ miles S.W.

XXXV. Noagaon Tower Station, lat. $23^{\circ} 9'$, long. $91^{\circ} 4'$ —observed at in 1867—is in open ground on a mound about 16 feet above the general level of the country; thána Hájiganj, pargana Chandagaon, district Tipperah.

The tower is hollow, 34·22 feet high and has a mark in the ground floor and another below in the foundation. The azimuths and perambulated distances of the circumjacent villages are:—Noagaon $148^{\circ} 42'$, mile 0·49; Boirpit $255^{\circ} 59'$, mile 0·24; Sárgaria $61^{\circ} 10'$, mile 0·40; Chiria Taltola (centre of N. hamlet) $280^{\circ} 54'$, mile 0·87; Saktola (centre of N. edge) $339^{\circ} 9'$, miles 1·17.

XXXVI. Mátabi Tower Station, lat. $23^{\circ} 1'$, long. $91^{\circ} 8'$ —observed at in 1867—is at the S.W. corner of a tank called the Nainsar Dighi in open ground; thána Beganganj, pargana Amrábád, district Noakholly.

The tower is hollow, 35·35 feet high and has a mark in the ground floor and another below in the foundation. The azimuths and perambulated distances of the circumjacent places are:—Barahimpur village $146^{\circ} 25'$, mile 0·48; Narainganj Hát $234^{\circ} 14'$, miles 1·21; Mátabi village $357^{\circ} 57'$, mile 0·16.

XXXVII. Patwár Tower Station, lat. $23^{\circ} 8'$, long. $91^{\circ} 14'$ —observed at in 1867—is at the S.E. corner of a tank at the S.E. extremity of the village of the same name; thána Láksám, pargana Húmnabad, district Tipperah.

The tower is hollow, 33·14 feet high and has a mark in the ground floor and another below in the foundation. The tank bank on which the tower stands is about 12 feet above the general level of the country. The azimuths and perambulated distances of the circumjacent villages are:—Datishar $231^{\circ} 57'$, mile 0·74; Bágmára $250^{\circ} 41'$, mile 0·52; Atkorá $294^{\circ} 19'$, mile 0·52; Pámkorá $354^{\circ} 37'$, mile 0·58.

XXXVIII. Kadra Tower Station, lat. $23^{\circ} 1'$, long. $91^{\circ} 17'$ —observed at in 1867—is immediately on the eastern side of the village of the same name, and about $1\frac{1}{4}$ miles due N. of Haidarganj Hát; thána Beganganj, pargana Húmnabad, district Noakholly.

The tower is hollow, 34·88 feet high and has a mark in the ground floor and another below in the foundation. The azimuths and perambulated distances of the circumjacent places are:—Ghorákáttá village $59^{\circ} 45'$, mile 0·50; Moghua Dighi (tank) $265^{\circ} 25'$, mile 0·36; Púrushkar village $226^{\circ} 49'$, mile 0·88.

XXXIX. Chikania Hill Station, lat. $23^{\circ} 7'$, long. $91^{\circ} 24'$ —observed at in 1867—is on a spur running due S. from the main range of the Tipperah hills in the vicinity of Comillah; the spur is bounded on the east, south and west by plains in British territory, and the high road from Comillah to Chittagong skirts it on the west. The station is in the territory of the Raja of Hill Tipperah.

The pillar is perforated, 15.00 feet high and has a mark at the ground floor and another below in the foundation. The estimated bearings and distances of the circumjacent villages are:—Kokhab W., $1\frac{1}{2}$ miles; Bodarpur E., 3 miles.

XL. Bijar Singh Tower Station, lat. $23^{\circ} 0'$, long. $91^{\circ} 25'$ —observed at in 1867—is at the S.E. corner of a large tank in the lands of the village of the same name; thána Amírgaon, pargana Badrabad, district Noakholly.

The tower is hollow, 25.43 feet high and has a mark in the ground floor and another below in the foundation. The tank bank on which the tower stands is 28 feet above the general level of the country. The azimuths and perambulated distances of the circumjacent places are:—Rámpur village $261^{\circ} 57'$, mile 0.88; Modhuá Hat $344^{\circ} 57'$, mile 0.71.

XLVII.—(*Of the Eastern Frontier Series—Section 23° to 26°*). Sogaria or Chlegharia Hill Station, lat. $23^{\circ} 15'$, long. $91^{\circ} 33'$ —observed at in 1864 and 1867—is on the highest swell of a group of low hills under which flows a little stream practicable for rafts and small canoes during the rains; territory of the Raja of Hill Tipperah.

The pillar is solid, 3 feet high and has a mark at the surface, another in the foundation and a third midway between the two. The estimated bearings and distances of the circumjacent villages are:—Rongrubári N.E., 3 miles; Tankirambári S., $1\frac{1}{2}$ miles; Paddosing-Nawattibári W., 3 miles. When visited in 1867 for closing the East Calcutta Longitudinal Series no alteration in the construction of the pillar appears to have been made.

XLIX.—(*Of the Eastern Frontier Series—Section 23° to 26°*). Gojalia Hill Station, lat. $23^{\circ} 9'$, long. $91^{\circ} 36'$ —observed at in 1864 and 1867—is on the highest swell of a group of hills about 4 miles inland of the W. border of the territory of the Raja of Hill Tipperah.

The pillar is solid, 9 feet high and has a mark at the surface, another in the foundation and two intermediate ones 4 and 7 feet respectively above the latter. The estimated bearings and distances of the circumjacent villages are:—Aliábári N.N.W., 2 miles; Khankrúlbári E.S.E., 4 miles. When visited in 1867 for closing the East Calcutta Longitudinal Series no alteration was made in the construction of the pillar.

May 1877.

J. B. N. HENNESSEY,

In charge of Computing Office.

EAST CALCUTTA LONGITUDINAL SERIES.

PRINCIPAL TRIANGULATION. ADDENDUM TO DESCRIPTION OF STATIONS.

NOTE.—Consequent on modern alterations of district and other boundaries, the sites occupied by the stations are in some instances now included in civil divisions of territory which differ from the district, pargana, or village, recorded in the preceding descriptions of stations: a complete list of all the stations of the Series including a suitably modified statement of the altered subdivisions in question is accordingly given in the following table, and is derived chiefly from the annual reports, up to 1881, made by the Civil Officials to whose care the stations have been committed. The statement also gives present condition of certain of the stations; where no entry regarding present condition is made against a station it is to be assumed that the station when last reported on by the district Official was in good order.

The spelling of names is in accordance with that given in the lists of more important places published under the orders of Government whenever such names occur in the lists.

No. of Station	Local name	District	Pargana, &c.	Village in which the Station lies	Remarks on the Condition of the Station
LXXXI	...	Hooghly	P. Arsa, Thá. Hooghly	Chinsurah	... ..
I*	Boga Girza	„	P. Salempur, Thá. Balágarh	Notun Boga	... ..
I	Símhát	Nuddea	P. Páncpur, Thá. Haríngháta	Símhát	... ..
II	...	24-Pergunnahs	P. Amírpur, Thá. Hábra	Bira	<i>No report received from the district Officer.</i>
III	Ghátigáchhi	Nuddea	P. Páncpur, Thá. Rána-ghát	Ghátigáchhi	... ..
IV	...	24-Pergunnahs	P. Amírpur, Thá. Hábra	...	<i>No report received from the district Officer</i>
V	Kanakpur	Nuddea	P. Sínagar, Thá. Gopálnagar	Kanakpur	Partly fallen down as reported in 1874.
VI	Narodaha	„	P. Khásdaha, Thá. Gáí-gháta	Narodaha	Roof entirely fallen in as reported in 1873.
VII	Ghiba	„	P. Jaypur, Thá. Sársha	Ghiba	Roof fallen in as reported in 1874.
VIII	Piprágáchhi	„	P. Mulghar, Thá. Sársha	Piprágáchhi	Ditto.
IX	Simla	Jessore	P. Makar, Thá. Gadkháli	Simla	... ..
X	Jháppa	„	Thá. Manirámpur	Jháppa	Roof fallen in as reported in 1877.

NOTE.—Station LXXXI appertains to the Calcutta Longitudinal Series of the South-East Quadrilateral, and I* to the Calcutta Meridional Series. P. stands for pargana, and Thá. for thána.

No. of Station	Local name	District	Pargana, &c.	Village in which the Station lies	Remarks on the Condition of the Station
XI	Bháturia	Jessore	P. Isafpur, Thá. Jessore	Bháturia	... ..
XII	Bágdánga	"	Thá. Manirámpur	Bágdánga	... ..
XIII	Basantia	"	P. Isafpur, Thá. Jessore	Basantia	... ..
XIV	Dhúlgrám	"	P. Isafpur, Thá. Narail	Shubunára	Roof fallen in as reported in 1879.
XV	Kalaidánga	"	P. Naldi, Thá. Narail	Mirápára	... ..
XVI	Bishtupur	"	P. Naldi, Thá. Kália	Bábupur	Roof fallen in as reported in 1874.
XVII	Rádhanagar	"	P. Mokimpur, Thá. Lo-hágara	Daulatpur	... ..
XVIII	Orfi	Furreedpore	P. Mokimpur, Thá. Gopálganj	Orfi	... ..
XIX	Hatiára	"	P. Teli Háti, Thá. Maksúdpur	Hatiára	... ..
XX	Maheshpur	"	Ditto.	Maheshpur	... ..
XXI	Pákdíha	"	P. Mohabbatpur, Thá. Maksúdpur	Pákdíha	... ..
XXII	Baliári	"	P. and Thá. Kotálpára	Baliári	Tower cracked and broken in several places as reported in 1878.
XXIII	Ámgrám	"	P. Fatehjangpur, Thá. Madareepore	Ámgrám	... ..
XXIV	Bhátra	Backergunge	P. Bangrora Khariya, Thá. Gaurnadi	Ahoti Bhátra	"Roof, steps and platform fallen down" as reported in 1874.
XXV	Jhaudi	Furreedpore	P. Birmohan, Thá. Madareepore	Jhaudi	... ..
XXVI	...	Backergunge	...	...	Carried away by the Áriákhán river as reported in 1870.
XXVII	Málgaon	Furreedpore	P. Idilpur, Thá. Pálang	Málgaon	... ..
XXVIII	Gangapur	Backergunge	P. Srírámpur, Thá. Mendiganj	Gangapur	Upper part of pillar fallen down as reported in 1878.
XXIX	...	Dacca	...	...	Carried away by the Megna river as reported in 1868.
XXX	...	Backergunge	...	...	Carried away by the Megna river as reported in 1875.
XXXI	Haripur	Tipperah	P. Isápura Khalilabad, Thá. Chandpur	Haripur	... ..
XXXII	Lakhinagar	Noakholly	P. Bhullooa, Thá. Lakhipur	Lakhinagar	Roof fallen in as reported in 1875.
XXXIII	Gupti	Tipperah	P. Shinhargaon, Thá. Chandpur	Gupti	Top of pillar fallen down as reported in 1881.

No. of Station	Local name	District	Pargana, &c.	Village in which the Station lies	Remarks on the Condition of the Station
XXXIV	Báshakpur	Noakholly	P. Bhullooh, Thá. Lakhipur	Báshakpur	... ..
XXXV	Noagaon	Tipperah	P. Chaudpaggrám, Thá. Láksám	Noagaon	"East and west sides of the pillar cracked and more than half fallen down" as reported in 1878.
XXXVI	Mátabi	Noakholly	P. Amrabad, Thá. Begamganj	Mátabi	... ..
XXXVII	Patwár	Tipperah	P. Húmnabad, Thá. Láksám	Patwár	Roof fallen in as reported in 1876.
XXXVIII	Kadra	Noakholly	P. Húmnabad, Thá. Begamganj	Kadra	... ..
XXXIX	Jhagari or Jhajari	Hill Tipperah	Thá. Katalia	...	... ..
XL	Bijay Singh	Noakholly	P. Badrabad, Thá. Fenny	Bijay Singh	Roof and upper pillar fallen down, eastern and western walls of the tower cracked, as reported in 1874.
XLVII	Sogariamura	Hill Tipperah	Thá. Bilinúa	Sogariamura	Pillar in ruins as reported in 1878.
XLIX	Gazariamura	„	Ditto.	Gazariamura	Ditto.

NOTE.—Stations XLVII and XLIX appertain to the Eastern Frontier Series—Section 23° to 26°. P. stands for pargana, and Thá. for thána.

December, 1882.

J. B. N. HENNESSEY,
In charge of Computing Office.

EAST CALCUTTA LONGITUDINAL SERIES.

PRINCIPAL TRIANGULATION. TRIANGLES.

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle	Distance		
				Log. feet	Feet	Miles
1	Chinsurah, LXXXI	25	58 38 14'23	4'7758085	59677'2	11'303
	Boga, I	24	54 42 11'01	4'7561865	57040'9	10'803
	Simahát, I	25	66 39 34'76	4'8073287	64169'5	12'153
2	Chinsurah, LXXXI	25	60 21 43'39	4'7826309	60622'1	11'481
	Simahát, I	25	64 46 13'82	4'7999876	63093'9	11'950
	Bira, II	24	54 52 2'79	4'7561865	57040'9	10'803
3	Simahát, I	25	55 10 7'35	4'7605607	57618'3	10'913
	Bira, II	25	65 6 17'11	4'8039487	63672'0	12'059
	Berghom, IV	25	59 43 35'54	4'7826309	60622'1	11'481
4	Simahát, I	27	59 17 42'40	4'7974120	62720'9	11'879
	Berghom, IV	27	59 54 49'05	4'8001622	63119'3	11'954
	Kanakpur, V	28	60 47 28'55	4'8039487	63672'0	12'059
5	Boga, I	23	59 29 50'45	4'7631248	57959'5	10'977
	Simahát, I	23	57 59 11'87	4'7561734	57039'2	10'803
	Ghatigáchhi, III	23	62 30 57'68	4'7758085	59677'2	11'303

NOTES.—1. The values of the side are given in the same line with the opposite angle.

2. Station Chinsurah, LXXXI appertains to the Calcutta Longitudinal, and Boga, I, to the Calcutta Meridional Series.

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle	Distance		
				Log. feet	Feet	Miles
6	Simahát, I	24	56 7 8'31	4'7569079	57135'8	10'821
	Ghatigáchhi, III	24	66 30 41'05	4'8001622	63119'3	11'954
	Kanakpur, V	24	57 22 10'64	4'7631248	57959'5	10'977
7	Berghom, IV	22	52 56 5'71	4'7301899	53726'7	10'176
	Kanakpur, V	23	58 23 23'76	4'7584669	57341'2	10'860
	Noráda, VI	23	68 40 30'53	4'7974120	62720'9	11'879
8	Kanakpur, V	19	46 34 38'31	4'6629355	46018'8	8'716
	Noráda, VI	19	75 25 58'53	4'7876277	61323'6	11'614
	Ghiba, VII	19	57 59 23'16	4'7301899	53726'7	10'176
9	Noráda, VI	16	65 11 12'97	4'7024528	50402'6	9'546
	Ghiba, VII	16	58 50 38'16	4'6768717	47519'5	9'000
	Piprágáchhi, VIII	15	55 58 8'87	4'6629355	46018'8	8'716
10	Ghiba, VII	17	59 53 7'37	4'6923107	49239'2	9'326
	Piprágáchhi, VIII	16	57 48 22'27	4'6827819	48170'6	9'123
	Simlia, IX	17	62 18 30'36	4'7024528	50402'6	9'546
11	Piprágáchhi, VIII	18	68 6 21'67	4'7432468	55366'5	10'486
	Simlia, IX	18	56 17 10'64	4'6957871	49634'9	9'401
	Jháppa, X	18	55 36 27'69	4'6923107	49239'2	9'326
12	Simlia, IX	20	58 25 21'22	4'7317481	53919'8	10'212
	Jháppa, X	21	60 33 25'87	4'7412842	55116'8	10'439
	Bháturia, XI	21	61 1 12'91	4'7432468	55366'5	10'486
13	Jháppa, X	21	65 38 1'13	4'7610808	57687'4	10'926
	Bháturia, XI	20	55 59 54'54	4'7201641	52500'6	9'943
	Bágdánga, XII	20	58 22 4'33	4'7317481	53919'8	10'212
14	Bháturia XI	23	55 12 39'53	4'7414777	55141'4	10'443
	Bágdánga, XII	23	65 33 52'70	4'7862436	61128'5	11'577
	Basantia, XIII	23	59 13 27'77	4'7610808	57687'4	10'926
15	Bágdánga, XII	23	60 31 38'99	4'7636005	58023'0	10'989
	Basantia, XIII	23	63 38 40'36	4'7761216	59720'2	11'311
	Shubunára, XIV	22	55 49 40'65	4'7414777	55141'4	10'443
16	Basantia, XIII	20	58 24 36'45	4'7297853	53676'6	10'166
	Shubunára, XIV	20	54 32 50'49	4'7103795	51331'0	9'722
	Báliakándi, XV	20	67 2 33'06	4'7636005	58023'0	10'989
17	Shubunára, XIV	18	61 47 43'89	4'7165397	52064'3	9'861
	Báliakándi, XV	17	52 53 51'21	4'6731948	47118'9	8'924
	Bábupur, XVI	18	65 18 24'90	4'7297853	53676'6	10'166
18	Báliakándi, XV	23	62 15 44'12	4'7782101	60008'1	11'365
	Bábupur, XVI	23	67 34 13'20	4'7970598	62670'0	11'869
	Daulatpur, XVII	22	50 10 2'68	4'7165397	52064'3	9'861
19	Bábupur, XVI	23	51 36 54'51	4'7312044	53852'3	10'199
	Daulatpur, XVII	24	67 31 18'04	4'8026506	63482'0	12'023
	Orfi, XVIII	24	60 51 47'45	4'7782101	60008'1	11'365
20	Daulatpur, XVII	20	63 57 15'02	4'7513310	56406'7	10'683
	Orfi, XVIII	20	56 58 48'77	4'7213344	52642'2	9'970
	Hatiára, XIX	20	59 3 56'21	4'7312044	53852'3	10'199

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle			Distance		
						Log. feet	Feet	Miles
21	Orfi, XVIII	.24	64	20	34.84	4.7908578	61781.4	11.701
	Hatiára, XIX	.24	60	16	20.22	4.7746548	59518.9	11.273
	Baniári, XXII	.24	55	23	4.94	4.7513310	56406.7	10.683
22	Hatiára, XIX	.24	56	56	19.48	4.7652907	58249.3	11.032
	Baniári, XXII	.25	60	19	29.87	4.7809447	60387.2	11.437
	Kandia, XXIII	.25	62	44	10.65	4.7908578	61781.4	11.701
23	Daulatpur, XVII	.21	62	14	57.40	4.7549801	56882.7	10.773
	Hatiára, XIX	.21	62	45	54.07	4.7570145	57149.8	10.824
	Maheshpur, XX	.21	54	59	8.53	4.7213344	52642.2	9.970
24	Hatiára, XIX	.21	63	0	32.48	4.7576584	57234.6	10.840
	Maheshpur, XX	.21	54	39	56.05	4.7193212	52398.8	9.924
	Pákdíha, XXI	.21	62	19	31.47	4.7549801	56882.7	10.773
25	Hatiára, XIX	.21	57	56	56.23	4.7410011	55080.9	10.432
	Pákdíha, XXI	.22	68	18	52.97	4.7809447	60387.2	11.437
	Kandia, XXIII	.21	53	44	10.80	4.7193212	52398.8	9.924
26	Baniári, XXII	.22	65	20	4.65	4.7793787	60169.8	11.396
	Kandia, XXIII	.22	53	3	9.48	4.7235782	52914.9	10.022
	Bhátra, XXIV	.22	61	36	45.87	4.7652907	58249.3	11.032
27	Kandia, XXIII	.22	56	2	7.30	4.7400374	54958.8	10.409
	Bhátra, XXIV	.22	58	43	52.49	4.7531175	56639.3	10.727
	Jhaudi, XXV	.23	65	14	0.21	4.7793787	60169.8	11.396
28	Bhátra, XXIV	.22	67	22	8.92	4.7784737	60044.6	11.372
	Jhaudi, XXV	.21	54	58	39.51	4.7265163	53274.1	10.090
	Káyaria, XXVI	.21	57	39	11.57	4.7400374	54958.8	10.409
29	Jhaudi, XXV	.22	61	39	32.63	4.7659626	58339.5	11.049
	Káyaria, XXVI	.22	53	24	4.69	4.7260357	53215.2	10.079
	Málgaon, XXVII	.23	64	56	22.68	4.7784737	60044.6	11.372
30	Káyaria, XXVI	.22	59	6	3.88	4.7537437	56721.0	10.743
	Málgaon, XXVII	.22	58	56	46.57	4.7530393	56629.1	10.725
	Gangapur, XXVIII	.23	61	57	9.55	4.7659626	58339.5	11.049
31	Málgaon, XXVII	.19	67	58	33.80	4.7642610	58111.4	11.006
	Gangapur, XXVIII	.19	47	13	16.49	4.6628538	46010.2	8.714
	Kodalpur, XXIX	.19	64	48	9.71	4.7537437	56721.0	10.743
32	Gangapur, XXVIII	.22	68	40	11.79	4.7897109	61618.5	11.670
	Kodalpur, XXIX	.19	49	52	12.59	4.7039540	50577.1	9.579
	Kálíshpur, XXX	.22	61	27	35.62	4.7642610	58111.4	11.006
33	Kodalpur, XXIX	.23	59	9	21.76	4.7658736	58327.5	11.047
	Kálíshpur, XXX	.23	55	44	55.64	4.7493833	56154.3	10.635
	Haripur, XXXI	.24	65	5	42.60	4.7897109	61618.5	11.670
34	Kálíshpur, XXX	.21	60	54	42.35	4.7492844	56141.6	10.633
	Haripur, XXXI	.21	53	52	18.41	4.7150864	51890.3	9.828
	Lakhinagar, XXXII	.21	65	12	59.24	4.7658736	58327.5	11.047
35	Haripur, XXXI	.21	60	11	6.91	4.7448584	55572.3	10.525
	Lakhinagar, XXXII	.21	58	35	19.59	4.7376976	54663.5	10.353
	Gupti, XXXIII	.21	61	13	33.50	4.7492844	56141.6	10.633

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle	Distance		
				Log. feet	Feet	Miles
36	Lakhinagar, XXXII	"	° ' "			
	Gupti, XXXIII	'20	59 49 14'26	4'7332211	54103'0	10'247
	Báshakpur, XXXIV	'20	57 33 53'13	4'7228198	52822'6	10'004
37		'20	62 36 52'61	4'7448584	55572'3	10'525
	Gupti, XXXIII	'22	61 24 44'43	4'7664360	58403'1	11'061
	Báshakpur, XXXIV	'23	64 9 17'51	4'7771296	59859'0	11'337
38		'22	54 25 58'06	4'7332211	54103'0	10'247
	Báshakpur, XXXIV	'22	55 9 28'00	4'7330545	54082'2	10'243
	Nongaoon, XXXV	'22	62 25 48'79	4'7665081	58412'8	11'063
39		'22	62 24 43'21	4'7664360	58403'1	11'061
	Nongaoon, XXXV	'22	61 47 6'07	4'7594477	57470'9	10'885
	Mátábi, XXXVI	'22	62 11 45'55	4'7611047	57690'6	10'926
40		'21	56 1 8'38	4'7330545	54082'2	10'243
	Mátábi, XXXVI	'18	55 2 21'55	4'6952041	49568'3	9'283
	Patwár, XXXVII	'18	53 7 5'40	4'6846532	48378'6	9'163
41		'18	71 50 33'05	4'7594477	57470'9	10'885
	Patwár, XXXVII	'22	66 43 18'67	4'7795621	60195'2	11'401
	Kadra, XXXVIII	'21	64 7 40'47	4'7705687	58961'5	11'167
42		'21	49 9 0'86	4'6952041	49568'3	9'388
	Kadra, XXXVIII	'17	46 42 25'50	4'6490098	44566'6	8'441
	Chikania, XXXIX	'17	53 50 27'07	4'6940421	49435'9	9'363
43		'17	79 27 7'43	4'7795621	60195'2	11'401
	Bijar Singh, XL	'23	92 36 5'57	4'9067781	80682'3	15'281
	Gojalia, XLIX	'23	53 54 27'63	4'8146743	65264'1	12'361
44		'23	33 29 26'80	4'6490098	44566'6	8'441
	Chikania, XXXIX	'28	42 20 41'21	4'7366318	54529'5	10'308
	Gojalia, XLIX	'28	83 55 46'91	4'9057939	80499'6	15'246
	Sogaria, XLVII	'28	53 43 31'88	4'8146743	65264'1	12'361

NOTE.—Stations Sogaria, XLVII, and Gojalia, XLIX appertain to the Eastern Frontier Series—Section 23° to 26°.

November 1878.

J. B. N. HENNESSEY,

In charge of Computing Office.

EAST CALCUTTA LONGITUDINAL SERIES.

SECONDARY TRIANGULATION. TRIANGLES.

PRINCIPAL-AUXILIARY STATIONS AND INTERSECTED POINTS.

Differences between the common sides of two triangles to stations and intersected points, are shown by the small figures in the column for "Distance in Feet" between the data of the two triangles, the earlier of which in order has supplied the greater value: where the difference is small it has usually been apportioned between the triangles, but where it is large no adjustment has been made, as one or other of the two values must be erroneous.

No of Triangle	Station	Corrected Plane Angle		Distance		No of Triangle	Station	Corrected Plane Angle		Distance		No of Triangle
		° ' "	° ' "	Log. feet.	Feet.			Log. feet.	Feet.	Log. feet.	Feet.		Miles	Miles
45	Daulatpur, XVII	57 16 38		4.662985	46024	50	Pakdiha, XXI	76 3 1	4.743003	55335	10.480	24
	Orfi, XVIII	22 35 11		4.322454	21011		Kandia, XXIII	28 55 25	4.440529	27576	5.223	
	Dholgram-Fakra House			4.731204	53852		Kalibari Temple		4.741001	55081	10.432	
46	Orfi, XVIII	34 23 38		4.503345	31867	51	Hatiara, XIX	66 22 10	4.743003	55335	10.480	"
	Hatiara, XIX	54 40 8		4.662985	46024		Kandia, XXIII	24 48 46	4.403929	35347	4.801	
	Dholgram-Fakra House			4.751331	56407		Kalibari Temple		4.780945	60387	11.437	
47	Hatiara, XIX	55 21 30		4.706218	50841	Dacca.						"
	Baniari, XXII	33 22 34		4.531431	33906	SECONDARY SERIES—(incomplete).						
	Olpur Fakra House			4.790858	61781							
48	Orfi, XVIII	56 58 48		4.706218	50841	52	Rodulpur, XXIX	35 55 2	4.558251	36162	6.849	14
	Baniari, XXII	22 0 31		4.359462	22723		Kalishpur, XXX	55 45 31	4.707231	50900	9.652	
	Olpur Fakra House			4.774655	59519		Krishnapur	88 19 27	4.789711	61618	11.670	
49	Orfi, XVIII	8 9 11		4.526259	33594	53	Kalishpur, XXX	56 29 9	4.510464	32394	6.135	"
	Hatiara, XIX	5 37 22		4.365659	23509		Krishnapur	54 57 57	4.502612	31814	6.025	
	Olpur Fakra House Turret			4.751331	56407		Sona Char No. 1	68 32 54	4.558251	36162	6.849	

No. of Triangle	Station	Corrected Plane Angle			Distance			No. of Triangle	Station	Corrected Plane Angle			Distance			Theodolite need			
		°	'	"	Log. feet	Feet	Miles			Log. feet	Feet	Miles							
54	Kodalpur, XXIX	36	41	36	4	510464	32394	6	135	14	0	4	403947	23348	4	801	14		
	Krishnapur	33	21	30	4	474366	29810	5	646	"	36	37	51	4	643060	43960	8	356	"
	Sona Char No. 1	109	56	54	4	707231	50960	9	652	"	123	14	45	4	789711	61618	11	670	"
55	Kodalpur, XXIX	59	55	46	4	496137	31343	5	936	"	80	2	16	4	667278	46481	8	803	"
	Sona Char No. 1	64	40	29	4	515033	32737	6	200	"	67	28	38	4	639411	43592	8	256	"
	Ibrahimpur	55	23	45	4	474366	29810	5	646	"	32	29	16	4	403947	23348	4	801	"
56	Krishnapur	65	5	54	4	496137	31343	5	936	"	60	54	36	4	612028	49929	7	752	"
	Sona Char No. 1	45	16	25	4	390664	24551	4	650	"	68	32	50	4	639411	43592	8	256	"
	Ibrahimpur	69	37	41	4	510464	32394	6	135	"	50	32	38	4	558251	36162	6	849	"
57	Kodalpur, XXIX	45	51	28	4	393658	24755	4	688	"	39	25	19	4	659215	45626	8	641	"
	Ibrahimpur	62	31	12	4	485776	30664	5	796	"	105	51	9	4	839584	69117	13	000	"
	Gopaldi	71	37	20	4	515033	32737	6	200	"	4	612028	49929	7	752	"			
58	Kodalpur, XXIX	56	19	16	4	464553	29144	5	520	"	45	32	52	4	659215	45626	8	641	"
	Gopaldi	62	46	18	4	493342	31142	5	898	"	87	47	57	4	865297	63870	12	097	"
	Hogla	60	54	26	4	485776	30664	5	796	"	66	40	2	4	667278	46481	8	803	"
59	Gopaldi	68	30	23	4	569093	37076	7	022	"	60	54	54	4	528031	33731	6	388	"
	Hogla	64	29	22	4	555846	35962	6	811	"	68	40	2	4	555744	35954	6	809	"
	Balashia	47	0	15	4	464553	29144	5	520	"	4	473461	29748	4	540070	34679	6	568	"
60	Gopaldi	60	55	1	4	528112	33737	6	390	"	56	53	43	4	513195	35598	6	174	"
	Balashia	50	24	22	4	473461	29748	5	934	"	60	5	13	4	528031	33731	6	388	"
	Karalia	68	40	37	4	555846	35962	6	811	"	4	540070	34679	6	568	"			
61	Balashia	63	0	47	4	540070	34679	6	568	"	49	9	28	4	475594	29895	5	662	"
	Karalia	56	53	8	4	513165	35596	6	174	"	75	15	59	4	582257	38217	7	338	"
	Kaliar Char	60	6	5	4	528112	33737	6	390	"	4	513105	35596	6	174	"			
62	Balashia	49	10	33	4	475807	29909	5	665	"	43	56	51	4	480685	30247	5	729	"
	Kaliar Char	75	16	0	4	582353	38225	7	240	"	61	15	58	4	582257	38217	7	338	"
	Mohaupur	55	33	27	4	513165	35596	6	174	"	4	623833	42056	7	965	"			
63	Balashia	43	55	46	4	480550	30238	5	727	"	41	51	21	4	617527	41450	7	850	"
	Mohanpur	74	46	59	4	623833	42056	7	240	"	101	30	0	4	784425	60873	11	329	"
	Rajabari	61	17	15	4	582353	38225	7	240	"	4	509093	37076	7	022	"			
64	Kalishpur, XXX	37	21	29	4	285655	19304	3	656	"	48	54	3	4	519941	33109	6	271	"
	Sona Char No. 1	52	49	22	4	403947	23348	4	801	"	70	38	11	4	617527	41450	7	850	"
	Sona Char No. 2	89	49	9	4	502612	31814	6	025	"	4	582353	38225	7	240	"			

August 1880.

J. B. N. HENNESSEY,

In charge of Computing Office.

EAST CALCUTTA LONGITUDINAL SERIES.
AZIMUTHS OF SURROUNDING STATIONS AND POINTS, AT PRINCIPAL,
PRINCIPAL-AUXILIARY, AND SECONDARY STATIONS.

The following table contains, in the first column, the name of each Principal, Principal-Auxiliary, or Secondary Station, at which azimuths of surrounding Points have been measured; immediately followed by those azimuths. The second column contains the number of the triangle which gives the distance between the Station and the Point.

Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance
BABUPUR, XVI	8 27 18.89	BAGAKANDI, XV	21 37 41.97	BASHAKPUR, XXXIV	0 1 "
Shubunára, XIV	148 45 43.97	Shubunára, XIV	88 40 15.23	Gupti, XXXIII	151 45 53.64
Baliakánda, XV	216 19 57.39	Basantia, XIII	266 28 6.24	Nogaon, XXXV	215 55 11.38
Daulatpur, XVII	267 50 52.14	Daulatpur, XVII	328 43 50.59	Mátábi, XXXVI	271 4 39.59
Orfi, XVIII		Bábupur, XVI		BEGHON, IV	
BADANGA, XII		BANIARI, XXII		Bira, II	60 55 23.97
Jhappa, X	86 42 1.03	Orfi, XVIII	90 16 38.58	Simahát, I	120 38 59.76
Bháturia, XI	145 4 5.57	Olpur Paka House	112 17 10	Kanakpur, V	180 33 49.08
Basantia, XIII	210 37 58.50	Hátúra, XIX	145 39 43.76	Norsáda, VI	233 29 55.02
Shubunára, XIV	271 9 37.71	Kandia, XXIII	255 59 13.88	BHATRA, XXIV	
BALASHTA B.		Bhátúra, XXIV	271 19 18.75	Baniári, XXII	91 23 0.18
Hogla	8 41 59 49	BASANTIA, XIII		Kandia, XXIII	152 59 46.27
Rájábari Temple	143 20 49	Bágdánga, XII	30 39 56.45	Jhauá, XXV	211 43 38.99
Rájábari	148 28 6	Bháturia, XI	89 53 24.44	Kayaria, XXVI	279 5 48.12
Mohanpur	192 23 52	Bálikánda, XV	268 56 39.21	BHATURIA, XI	
Mohanpur Revenue Survey	192 24 57	Shubunára, XIV	327 1 15.86	Jhappa, X	21 1 41.65
Káliár Char	241 34 25	BASHAKPUR, XXXIV		Simia, IX	81 2 54.76
Karalia	304 35 12	Leathinagar, XXXII	89 9 0.83	Basantia, XIII	209 49 7.14
Gopaldá	354 59 34			Bágdánga, XII	325 1 40.90

Name of station with azimuths of surrounding points	o ' "	No. of triangle giving distance	Name of station with azimuths of surrounding points	o ' "	No. of triangle giving distance	Name of station with azimuths of surrounding points	o ' "	No. of triangle giving distance
BIJAR SINGH, XL Kandira, XXXVIII Chikania, XXXIX Gojalia, XLIX*	91 35 3.12 173 2 10.92 326 50 38.79	42 42 43	GOJALIA, XLIX* Bijar Singh, XL Chikania, XXXIX Sogaria, XLVII*	47 0 46.40 80 30 13.43 164 26 0 02	43 43 44	JHAPPA, X Pipragachhi, VIII Simlia, IX Bhatūra, XI Bagdanga, XII	84 50 26.57 140 36 54.44 201 0 20.52 206 38 21.85	11 11 12 13
BIRA, II Chinsurah, LXXXI† Simahāt, I Borghom, IV	120 53 34.73 175 45 37.77 240 51 55.13	2 2 3	GOPALDI 8. Kodalpur, XXIX Hogla Balāshia Balāshia Revenue Survey Kardālia Ibrāhimpur	43 43 6 166 29 24 174 59 47 174 59 54 235 54 48 332 5 46	57 58 59 70 60 57	JHAUDI, XXV Bhātra, XXIV Kandia, XXIII Mālgāon, XXVII Kāyaria, XXVI KADRA, XXXVIII Mātābi, XXXVI Pātwar, XXXVII Chikania, XXXIX Bijar Singh, XL	31 45 40.39 96 59 40.81 275 7 27.81 336 47 0.67 00 50 57.34 162 41 30.57 226 49 11.25 273 31 36.91	27 27 29 28 40 40 41 42
BOGA, I † Chinsurah, LXXXI† Ghatigachhi, III Simahāt, I	1 50 0.45 247 37 58.51 307 7 49.19	1 5 1	GUPTI, XXXIII Lakhnagar, XXXII Haripur, XXXI Nogaon, XXXV Bāshakpur, XXXIV HARIPUR, XXXI Kālāshpur, XXX Kodalpur, XXXIX Gupti, XXXIII Lakhnagar, XXXII	29 17 59.45 90 31 33.17 270 19 21.47 331 44 6.12 24 31 8.67 89 36 51.50 270 27 42.94 330 38 50.05	35 37 37 36	KALIA CHAR, 8. Kardālia Balāshia Revenue Survey Balāshia Mohanpur Revenue Survey Mohanpur	1 30 22 61 35 35 61 36 27 136 52 26 136 52 27	61 71 61 72 62
CUNDSURAH, LXXXI† Boga, I † Simahāt, I Bira, II	181 49 51.88 240 38 6.35 300 49 49.99	1 1 2	HATARA, XIX Olpur Pakra House Turret Olpur Pakra House Orā, XVII Dholgram-Pakra House Daulatpur, XVII Maheshpur, XX Kālāshī Temple Pakdina, XXI Kandira, XXXIII Baniāri, XXII	20 16 16 20 58 47 25 53 57.76 80 33 46 84 57 34.17 147 43 28.45 202 18 48 210 44 1.15 268 0 57.59 335 37 17.31	49 47 20 46 20 23 51 24 22 21	KALISHPUR, XXX Gangapur, XXXVIII Sona Char No. 1 Kodalpur, XXXIX Sona Char No. 2 Haripur, XXXI Krishnapur Lakhnagar, XXXII Mona Char	87 16 55.41 148 0 53 148 44 31.25 185 22 22 204 29 27.13 204 30 2 205 24 9.68 265 24 38	32 53 32 64 33 52 34 66
DAULATPUR, XVII Babupur, XVI Balakandi, XV Maheshpur, XX Hatara, XIX Dholgram-Pakra House Orā, XVII	36 22 26.74 86 32 29.65 202 38 55.63 264 53 53.24 271 34 30 328 51 8.46	18 18 23 20 45 19	HOGLA 8. Rājābāri Temple Balāshia Gopāldi Kodalpur, XXXIX LEBRAMPUR 8. Sona Char No. 1 Kodalpur, XXXIX Gopāldi Krishnapur	180 6 43 221 58 4 286 27 26 347 21 52 34 11 38 89 35 23 152 6 35 324 33 57	74 59 58 58	KANAKPUR, V Borghom, IV Simahāt, I Ghatigachhi, III Ghibā, VII Norāda, VI KANDIA, XXXIII Baniāri, XXII Hatāra, XIX Kālāshī Temple Pakdina, XXI Jhaudi, XXV Bhātra, XXIV	0 33 51.66 61 21 20.48 118 43 31.36 255 35 49.17 302 10 27.67 26 1 1.15 88 45 19.06 113 53 58 142 29 23.06 276 55 43.93 332 57 51.45	4 4 6 8 7 22 22 50 25 27 26
GANGAPUR, XXVIII Kāyaria, XXVI Mālgāon, XXXVII Kodalpur, XXXIX Kālāshpur, XXX	89 22 45.69 151 19 55.47 198 33 12.15 267 13 24.10	30 30 31 32	LEBRAMPUR 8. Sona Char No. 1 Kodalpur, XXXIX Gopāldi Krishnapur	170 40 21 67 41 40.12 298 40 0.92	5 5 6	KANAKPUR, V Borghom, IV Simahāt, I Ghatigachhi, III Ghibā, VII Norāda, VI KANDIA, XXXIII Baniāri, XXII Hatāra, XIX Kālāshī Temple Pakdina, XXI Jhaudi, XXV Bhātra, XXIV	0 33 51.66 61 21 20.48 118 43 31.36 255 35 49.17 302 10 27.67 26 1 1.15 88 45 19.06 113 53 58 142 29 23.06 276 55 43.93 332 57 51.45	4 4 6 8 7 22 22 50 25 27 26
GHATIGACHHI, III Simahāt, I Boga, I † Kanakpur, V	5 10 42.21 67 41 40.12 298 40 0.92	5 5 6	LEBRAMPUR 8. Sona Char No. 1 Kodalpur, XXXIX Gopāldi Krishnapur	170 40 21 67 41 40.12 298 40 0.92	5 5 6	KANAKPUR, V Borghom, IV Simahāt, I Ghatigachhi, III Ghibā, VII Norāda, VI KANDIA, XXXIII Baniāri, XXII Hatāra, XIX Kālāshī Temple Pakdina, XXI Jhaudi, XXV Bhātra, XXIV	0 33 51.66 61 21 20.48 118 43 31.36 255 35 49.17 302 10 27.67 26 1 1.15 88 45 19.06 113 53 58 142 29 23.06 276 55 43.93 332 57 51.45	4 4 6 8 7 22 22 50 25 27 26
GHATA, VII Norāda, VI Kanakpur, V Simlia, IX Pipragachhi, VIII	17 40 35.05 75 39 58.40 258 56 49.20 318 49 56.74	8 8 10 9	LEBRAMPUR 8. Sona Char No. 1 Kodalpur, XXXIX Gopāldi Krishnapur	170 40 21 67 41 40.12 298 40 0.92	5 5 6	KANAKPUR, V Borghom, IV Simahāt, I Ghatigachhi, III Ghibā, VII Norāda, VI KANDIA, XXXIII Baniāri, XXII Hatāra, XIX Kālāshī Temple Pakdina, XXI Jhaudi, XXV Bhātra, XXIV	0 33 51.66 61 21 20.48 118 43 31.36 255 35 49.17 302 10 27.67 26 1 1.15 88 45 19.06 113 53 58 142 29 23.06 276 55 43.93 332 57 51.45	4 4 6 8 7 22 22 50 25 27 26

† Of the Eastern Frontier Series, Section 23° to 26°.

† Of the Calcutta Longitudinal Series of the South-East Quadrilateral.

† Of the Calcutta Meridional Series.

AZIMUTHS OF STATIONS AND INTERSECTED POINTS.

Name of station with azimuths of surrounding points	No. of triangle existing	Name of station with azimuths of surrounding points	No. of triangle existing	Name of station with azimuths of surrounding points	No. of triangle existing
KARALIA S. Gopaldi Bhatra, XXIV Balishia Balishia Kaliar Char	60 70 60 61	MATABI, XXXVI Bashakpur, XXXIV Nongon, XXXV Patwar, XXXVII Kadra, XXXVIII	38 38 39 40	PIPRAGACHHI, VIII Norida, VI Ghiba, VII Simlia, IX Jhappa, X	9 9 10 11
KAYARA, XXVI Bhatra, XXIV Jhaudi, XXV Malgaon, XXVII Gangapur, XXVIII	23 23 29 30	MOHANPUR S. Balishia Rajabari Temple Rajabari Kaliar Char	62 75 63 62	RAJABARI S. Mohapur Mohapur Revenue Survey Balishia	63 73 63
KODALPUR, XXIX Gangapur, XXVIII Malgaon, XXVII Hogla Gopaldi Haripur, XXXI Ibrahimpur Krishnapur Sona Char No. 2 Kalisapur, XXX Sona Char No. 1	31 31 58 57 33 55 52 65 32 54	MONA CHAR S. Sanpur Temple Kalisapur, XXX Sona Char No. 2 Krishnapur	68 66 66 67	SHUBHARA, XIV Bagdanga, XII Basantia, XIII Baliakandi XV Babupur, XVI	15 15 16 17
KRISHNAPUR S. Kalisapur, XXX Sona Char No. 1 Kodalpur, XXXIX Ibrahimpur Mona Char Sanpur Temple	52 53 52 56 67 68	NONADA, VI Benghom, IV Kanakkpur, V Ghiba, VII Pipragachhi, VIII Orni, XVIII Bahupur, XVI Daulatpur, XVII Dholgram-Fakra House Hatiara, XIX Olpur Faka House Olpur Faka House Turret Baniari, XXII	7 7 8 9 19 19 45 20 48 40 21	SHAHAT, I Chinsurah, LXXXI* Boga, I† Ghagachhi, III Kanakkpur, V Benghom, IV Bira, II	1 1 5 4 3 2
LAKHINAGAR, XXXII Kalisapur, XXX Haripur, XXXI Guppi, XXXIII Bashakpur, XXXIV	34 35 34 35 36	NONADA, VI Benghom, IV Kanakkpur, V Ghiba, VII Pipragachhi, VIII Orni, XVIII Bahupur, XVI Daulatpur, XVII Dholgram-Fakra House Hatiara, XIX Olpur Faka House Olpur Faka House Turret Baniari, XXII	19 19 45 20 48 40 21	SOCARA, XLVII† Chikania, XXXIX Gojalia, XLIX†	44 44
MANESPUR, XX Daulatpur, XVII Pikditha, XXI Hatiara, XIX	23 24 23	PARDHA, XXI Hatiara, XIX Kaliabari Temple Manesapur, XX Kaudia, XXXIII	24 50 24 25	SONA CHAR No. 1 S. Kodalpur, XXXIX Ibrahimpur Krishnapur Sona Char No. 2 Kalisapur, XXX	54 55 53 64 53
MALGAON, XXVII Kayara, XXXVI Jhaudi, XXV Kodalpur, XXXIX Gangapur, XXVIII	29 29 31 30	PARWAR, XXXVII Matubi, XXXVI Nongon, XXXV Chikania, XXXIX Kadra, XXXVIII	39 39 41 40	SONA CHAR No. 2 S. Kalisapur, XXX Sona Char No. 1 Kodalpur, XXXIX Mona Char Sanpur Temple	64 64 65 66 69

* Of the Calcutta Longitudinal Series of the South-East Quadrilateral. † Of the Calcutta Meridional Series. ‡ Of the Eastern Frontier Series, Section 23 to 26.

EAST CALCUTTA LONGITUDINAL SERIES.

CO-ORDINATES AND DESCRIPTIONS OF ALL STATIONS AND POINTS.

The following table gives the co-ordinates of all the stations and other fixed points, arranged in alphabetical order, also the descriptions of the secondary and intersected (or unvisited) points, and references to the preceding pages where the descriptions of the principal stations are given. In certain instances numbers are added which have reference to the given data of the triangles by which the station or point has been fixed; when these numbers are omitted it is to be understood that no triangles are given.

NOTE.— λ stands for Latitude North; L for Longitude East of Greenwich; H for Height of station in feet above mean sea level, if determined trigonometrically, H_s for the Height when found by spirit leveling, and *h* for Height of station tower or pillar. The trigonometrical heights always refer to the upper mark-stone or to the upper surface of the pillar on which the theodolite stood: the spirit leveled heights refer to the points on which the leveling staff stood as indicated in footnotes. For visited stations and for other points of superior accuracy the values of λ and L are given to two places of decimals; for well determined objects to one place, and for the remaining points to the nearest second. Principal stations are distinguished by the Roman numerals I, II, &c., secondary stations by the letters h.s. and s. The names in italics are those of the territories, states or districts in which the stations or points are situated.

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>A s. (<i>Noakholly</i>)</p> <p style="text-align: center;">o ' "</p> <p>λ 23 0 32' 13</p> <p>L 91 8 31' 79</p>	<p>Bágdánga, XII. (<i>See page 5—v.</i>)</p> <p style="text-align: center;">o ' "</p> <p>λ 23 0 3' 77</p> <p>L 89 20 3' 77</p> <p>H 55</p> <p><i>h</i> 39</p> <p style="text-align: center;">No. 13</p>	<p>Balágarh s. (<i>Hooghly</i>) In centre of village.</p> <p style="text-align: center;">o ' "</p> <p>λ 23 6 44' 65</p> <p>L 88 30 57' 89</p>
<p>Achutpur s. (<i>Hooghly</i>) On W. bank of the Hooghly river.</p> <p>λ 23 2 24' 46</p> <p>L 88 28 57' 42</p>	<p>Bágerkhál Flag. (<i>24-Pergunnahs</i>) N. of khál.</p> <p>λ 22 57 24</p> <p>L 88 27 43</p>	<p>Baláshia, Revenue Survey s. (<i>Dacca</i>) On the western chimney of Indigo Factory.</p> <p>λ 23 18 14' 76</p> <p>L 90 36 26' 96</p> <p style="text-align: center;">Nos. 70, 71</p>
<p>Bábupur, XVI. (<i>See page 6—v.</i>)</p> <p>λ 23 0 44' 86</p> <p>L 89 39 3' 96</p> <p>H 54</p> <p><i>h</i> 40</p> <p style="text-align: center;">No. 17</p>	<p>Balágarh Flag. (<i>Hooghly</i>) S. end of village.</p> <p>λ 23 6 11</p> <p>L 88 31 17</p>	<p>Baláshia s. (<i>Dacca</i>) On the western corner of Indigo Factory house. It is about 8 feet 4 inches distant from the centre of chimney on which the Revenue Survey Station is situated. The usual \odot engraved on a stone firmly set with mortar and 1875 feet high, denotes the station.</p> <p>λ 23 18 14' 84</p> <p>L 90 36 26' 94</p> <p style="text-align: center;">No. 69</p>
<p>Badri s. (<i>Tipperah</i>) It is 17 feet E. of the bungalow to E. of the high road from Comillah to Chittagoug, near the eighty-first mile-post, and about 21 miles from Comillah.</p> <p>λ 23 11 43' 21</p> <p>L 91 21 40' 51</p> <p>See Synoptical Volume of the Eastern Frontier Series, Section 23° to 26°.</p>	<p>Balágarh Hát s. (<i>Hooghly</i>) On W. bank of the Hooghly river, near a Bania's shop on E. side of village. It is marked by a platform of paka bricks, about 3 feet high, having a brick embedded underneath, with circle and dot engraved thereon.</p> <p>λ 23 7 11' 37</p> <p>L 88 30 54' 95</p>	<p>Báliakánda, XV. (<i>See page 6—v.</i>)</p> <p>λ 23 8 5' 90</p> <p>L 89 34 14' 66</p> <p>H 51</p> <p><i>h</i> 35</p> <p style="text-align: center;">No. 16</p>

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Bandel Church, (<i>Hooghly</i>) Steeple. λ 22 55 5'8 L 88 26 19'0	Bhálukjeri h.s. (<i>Hill Tipperah</i>) On a detached hill, about 2 miles E. of the high road from Comillah to Chittagong. λ 23 15 30'64 L 91 22 55'00 See Synoptical Volume of the Eastern Frontier Series. Section 23° to 26°.	Chikania, XXXIX. (<i>Vide page 10—v.</i>) λ 23 7 17'65 L 91 24 29'00 H 197 h 15 No. 41
Baniári, XXII. (<i>Vide page 7—v.</i>) λ 23 1 4'48 L 90 1 0'33 H 51 h 38 No. 21	Bhátra, XXIV. (<i>Vide page 7—v.</i>) λ 23 0 52'11 L 90 10 26'66 H 53 h 39 No. 26	Chinsurah, LXXXI.† (<i>Vide page 3—v.</i>) λ 22 52 55'87 L 88 26 38'51 H_s 86'40† h 9 No. 1
Banoai Temple. (<i>Noakholly</i>) Spire of eastern and highest temple. λ 23 2 12'3 L 91 8 23'8	Bháturia, XI. (<i>Vide page 6—v.</i>) λ 23 7 52'30 L 89 14 9'84 H 56 h 36 No. 12	Chinsurah Church, (<i>Hooghly</i>) Steeple. λ 22 52 58'1 L 88 26 39'9
Bánsbária s. (<i>Hooghly</i>) About $\frac{1}{2}$ a mile S. E. of temple of that name. λ 22 57 37'34 L 88 27 0'56	Bidantapur s. (<i>Hooghly</i>) On N. E. corner of Indigo char, about 0·3 of a mile N.W. of village. λ 23 7 39'38 L 88 32 19'07	Chinsurah Church. (<i>Hooghly</i>) Steeple of Armenian Church. λ 22 53 26'9 L 88 26 40'3 See Synoptical Volume of the Calcutta Longitudinal Series of the South-East Quadrilateral.
Bánsbária Temple, (<i>Hooghly</i>) Spire. λ 22 57 48'9 L 88 26 35'7	Bijar Singh, XL. (<i>Vide page 10—v.</i>) λ 22 59 59'30 L 91 25 26'89 H 74 h 25 No. 42	Chinsurah s. (<i>Hooghly</i>) On Mr. Barber's house, once used as a survey office. λ 22 53 20'41 L 88 26 34'34 See Synoptical Volume of the Calcutta Longitudinal Series of the South-East Quadrilateral.
Basantia, XIII. (<i>Vide page 5—v.</i>) λ 23 7 53'84 L 89 25 4'81 H 63 h 42 No. 14	Bira, II. (<i>Vide page 4—v.</i>) λ 22 47 35'16 L 88 36 17'57 H 63 h 35 No. 2	Chogdah (Naya) House. (<i>Nuddea</i>) Flag on Zamindár's paka three-storied house in village. λ 23 5 23'2 L 88 34 2'7
Báshakpur, XXXIV. (<i>Vide page 9—v.</i>) λ 23 0 47'78 L 90 57 35'67 H 60 h 37 No. 36	Boga, I.* (<i>Vide page 4—v.</i>) λ 23 3 31'41 L 88 27 0'47 H 70 h 44 No. 1	Chogdah (Purána) s. (<i>Nuddea</i>) On E. bank of the Hooghly river. λ 23 4 53'38 L 88 33 21'68
Bazára Masjid. (<i>Noakholly</i>) Centre spire of Amánulla Sanáulla Masjid. λ 23 0 11'6 L 91 8 12'4	Berghom, IV. (<i>Vide page 4—v.</i>) λ 22 52 12'88 L 88 45 15'78 H 57 h 33 No. 3	Daulatpur, XVII. (<i>Vide page 6—v.</i>) λ 23 8 43'76 L 89 45 24'94 H 60 h 43 No. 18
	Chandraháti s. (<i>Hooghly</i>) On W. bank of the Hooghly river and about $\frac{1}{2}$ a mile E. of Rághnabpur village. λ 22 59 48'93 L 88 27 4'61	Dholgrám-Fakra House. (<i>Furreedpore</i>) Flag on paka house of Bishnucharan Ghatak. λ 23 8 38'0 L 89 49 10'0 Nos. 45, 46

* Of the Calcutta Meridional Series. † Of the Calcutta Longitudinal Series of the South-East Quadrilateral. ‡ This height refers to the mark-stone let into the upper surface of the pillar.

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Dumurdaha s. (<i>Hooghly</i>) On W. bank of the Hooghly river and W. of village of that name. ° ' '' λ 23 1 59·00 L 88 28 37·75	Ghiba, VII. (<i>Vide page 4—v.</i>) ° ' '' λ 23 5 5·16 L 88 55 58·58 H 61 h 38 No. 8	Hamidpur Factory. (<i>Nuddea</i>) Flag on a juck tree close to the factory. ° ' '' λ 23 4 31·9 L 88 34 7·1
Durga Thákur's Tank s. (<i>Tipperah</i>) On embankment at the N.E. corner of a tank, 0·1 of a mile S.E. of the Moonisif's kachhri of Chauddagaon, S.W. of Lakhipur village, and E. of the high road from Comillah to Chittagong; pargana Chauddagaon. λ 23 13 23·25 L 91 21 37·06 See Synoptical Volume of the Eastern Frontier Series, Section 23° to 26°.	Ghogu s. (<i>Nuddea</i>) In village. λ 23 5 52·01 L 88 34 13·47	Hariakhál Factory, (<i>Nuddea</i>) Chiunney. λ 23 6 33·3 L 88 34 14·7
Durgapur s. (<i>Nuddea</i>) On E. bank of the Hooghly river. λ 23 1 49·56 L 88 28 55·86	Gojalia, XLIX.* (<i>Vide page 10—v.</i>) λ 23 9 4·76 L 91 35 58·65 H 466 h 8 No. 43	Haripur, XXXI. (<i>Vide page 8—v.</i>) λ 23 8 44·70 L 90 43 15·66 H 54 h 38 No. 33
Durlabhpur Flag. (<i>Hooghly</i>) On W. bank of the Hooghly river, about a mile E. of Háthikánda, and the same distance S.E. of Jirát village. λ 23 4 27 L 88 31 3	Gopáldi s. (<i>Tipperah</i>) About 200 yards from the left bank of the Megna river and about 2½ miles N. by a little E. of Narsinghpur. The height of upper ☉ mark above the lower one is 15 feet. λ 23 12 19·85 L 90 37 0·59 No. 57	Hatiára, XIX. (<i>Vide page 6—v.</i>) λ 23 9 29·86 L 89 54 46·86 H 53 h 37 No. 20
Fuljeri h.s. (<i>Hill Tipperah</i>) On a long range of hills, about 3½ miles S.W. of Mungaur village. λ 23 15 58·26 L 91 24 52·38 See Synoptical Volume of the Eastern Frontier Series, Section 23° to 26°.	Gupti, XXXIII. (<i>Vide page 9—v.</i>) λ 23 8 40·03 L 90 53 1·40 H 56 h 39 No. 35	Hogla s. (<i>Dacca-Furreedpore</i>) About 150 yards from the bank of the Megna river. λ 23 13 41·74 L 90 32 0·94 No. 58
Gangapur, XXVIII. (<i>Vide page 8—v.</i>) λ 22 59 34·77 L 90 29 55·81 H 54 h 39 No. 30	Gustia s. (<i>Nuddea</i>) S. of the khál. λ 22 58 54·82 L 88 27 57·62	Hooghly, Imámbara Garden s. (<i>Hooghly</i>) On paka embankment, marked with an iron nail. λ 22 54 25·76 L 88 26 43·36
Garipa s. (<i>24-Pergunnahs</i>) On E. bank of the Hooghly river. λ 22 54 4·76 L 88 27 12·04	Hábra Indigo Factory.† (<i>Furreedpore</i>) Revenue Survey Station on roof of drying house of the Indigo Factory. λ 23 16 52 L 89 47 42	Hooghly, Kachhri Ghát s. (<i>Hooghly</i>) About ¼ of a mile N.W. of Imámbara Garden s. λ 22 54 40·45 L 88 26 28·24
Gaunagar s. (<i>Nuddea</i>) On char about 1½ miles W. of Naya Chogdah. λ 23 5 23·27 L 88 32 25·66	Hájínagar s. (<i>24-Pergunnahs</i>) On E. bank of the Hooghly river, about ¼ mile S. of Durgapur village, and 1½ miles N.W. of Gauripur Distillery. λ 22 55 5·40 L 88 26 49·92	Hooghly River, A₁ Flag. (<i>24-Pergunnahs</i>) On Indigo char, about ¼ mile W. of Nandanbáti village. λ 22 56 34 L 88 27 5
Ghatigáchhi, III. (<i>Vide page 4—v.</i>) λ 23 7 6·22 L 88 36 25·59 H 66 h 33 No. 5		Hooghly River, A₁ s. (<i>Hooghly</i>) On W. bank of the river and about ¼ mile S. of Dumurdaha village. λ 23 1 40·54 L 88 28 20·67

* Of the Eastern Frontier Series, Section 23° to 26°.

† Fixed by traversing with small theodolite and chain.

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Hooghly River, A₂ Flag. (<i>Hooghly</i>) On Indigo char, on N. bank, at junction of the Balágarh jhál with the river.</p> <p style="text-align: center;">o ' "</p> <p>λ 23 7 15 L 88 31 1</p>	<p>Hooghly River, F Flag. (<i>Hooghly</i>) On Indigo char, about ¼ of a mile S. of Madhusúdanpur village.</p> <p style="text-align: center;">o ' "</p> <p>λ 23 0 15 L 88 27 32</p>	<p>Hooghly River, No. 2_a Flag. (<i>Hooghly</i>) On Indigo char, right bank of the river.</p> <p style="text-align: center;">o ' "</p> <p>λ 23 4 0 L 88 32 28</p>
<p>Hooghly River, A₃ s. (<i>Nuddea</i>) On E. bank of the river and near Purána Chogdah village.</p> <p>λ 23 4 44·38 L 88 33 31·72</p>	<p>Hooghly River, G Flag. (<i>Hooghly</i>) On Indigo char, about a mile S. of Madhusúdanpur village.</p> <p>λ 22 59 36 L 88 27 34</p>	<p>Hooghly River, No. 2_b Flag. (<i>Nuddea</i>) On Indigo char. W. bank of the river, 1½ miles W. of Naya Chogdah.</p> <p>λ 23 5 34 L 88 32 39</p>
<p>Hooghly River, B s. (<i>Hooghly</i>) On W. bank of the river and near Dád-pur village.</p> <p>λ 23 2 28·89 L 88 29 0·33</p>	<p>Hooghly River, a₁ s. (<i>Nuddea</i>) On Indigo char, about ¼ of a mile W. of Sukhságar village.</p> <p>λ 23 3 34·06 L 88 30 3·81</p>	<p>Hooghly River, No. 3 Flag. (<i>Nuddea</i>) On Indigo char, W. bank of the river, ¼ a mile S.W. of Naya Chogdah.</p> <p>λ 23 5 13 L 88 33 12</p>
<p>Hooghly River, B₁ Flag. (<i>Hooghly</i>) On W. bank, at the bend of the river.</p> <p>λ 22 56 43 L 88 26 56</p>	<p>Hooghly River, a₂ s. (<i>Hooghly</i>) On Indigo char, about a mile S. of Bhabánpur village.</p> <p>λ 23 6 19·28 L 88 31 29·32</p>	<p>Ibráhimpur s. (<i>Tipperah</i>) About 4½ miles from Haripur Principal Station. It lies about 3 miles S. by a little W. of Narsinghpur. The locality is generally known by the name of Basír Taluk.</p> <p>λ 25 8 43·06 L 90 39 4·73 Nos. 55, 56</p>
<p>Hooghly River, B₂ Flag. (<i>Hooghly</i>) On Indigo char, about 1 mile S.E. of Balágarh village.</p> <p>λ 23 7 22 L 88 31 33</p>	<p>Hooghly River, b₁ s. (<i>Nuddea</i>) On Indigo char, about a mile W. of Sukhságar village.</p> <p>λ 23 3 8·29 L 88 29 50·42</p>	<p>Jagpur Flag. (<i>Nuddea</i>) In village, about a mile N. of Naya Chogdah.</p> <p>λ 23 6 39 L 88 34 20</p>
<p>Hooghly River, C₁ Flag. (<i>Hooghly</i>) On Indigo char, about a mile E. of Bánsbária village.</p> <p>λ 22 57 33 L 88 27 5</p>	<p>Hooghly River, b₂ s. (<i>Hooghly</i>) On Indigo char, E. bank of the river.</p> <p>λ 23 6 44·93 L 88 31 6·56</p>	<p>Jakmári No. 1 s. (<i>Nuddea</i>) On Indigo char, on N. bank, at the junction of the branch with the main stream of the Hooghly river.</p> <p>λ 23 5 7·66 L 88 33 25·29</p>
<p>Hooghly River, C₂ Flag. (<i>Hooghly</i>) On Indigo char, about 1½ miles E. of Balágarh village.</p> <p>λ 23 7 36 L 88 32 2</p>	<p>Hooghly River, c s. (<i>Nuddea</i>) On Indigo char, E. bank of the river, about ¼ a mile N.W. of Sukhságar village.</p> <p>λ 23 3 49·93 L 88 30 29·50</p>	<p>Jakmári No. 2 s. (<i>Nuddea</i>) On Indigo char, opposite to Naya Chogdah.</p> <p>λ 23 5 33·55 L 88 33 52·38</p>
<p>Hooghly River, D₁ Flag. (<i>Nuddea</i>) On Indigo char, about ¼ a mile W. of Kánchrapára village.</p> <p>λ 22 57 38 L 88 27 22</p>	<p>Hooghly River, No. 1 Flag. (<i>Nuddea</i>) On Indigo char, W. bank of the river, about a mile S.W. of Naya Chogdah.</p> <p>λ 23 4 53 L 88 33 13</p>	<p>Jashra s. (<i>Nuddea</i>) Close to the bazar.</p> <p>λ 23 4 42·01 L 88 33 15·66</p>
<p>Hooghly River, D₂ Flag. (<i>Hooghly</i>) On Indigo char, about 2 miles N.E. of Balágarh village.</p> <p>λ 23 8 1 L 88 32 1</p>	<p>Hooghly River, No. 1 s. (<i>Hooghly</i>) On Indigo char, right bank of the river.</p> <p>λ 23 4 0·37 L 88 31 59·11</p>	<p>Jhápá, X. (<i>vide page 5—17.</i>)</p> <p>λ 22 59 33·55 L 89 10 42·75 H 52 h 33 No. 11</p>
<p>Hooghly River, D₃ Flag. (<i>Hooghly</i>) On Indigo char, about ¼ a mile S.E. of Madhusúdanpur village.</p> <p>λ 23 0 23 L 88 27 48</p>	<p>Hooghly River, No. 2 s. (<i>Nuddea</i>) On Indigo char, about 1½ miles S.W. of Naya Chogdah.</p> <p>λ 23 4 29·87 L 88 32 52·19</p>	

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.																																																
Jhaudi, XXV. (<i>Vide page 7—v.</i>) <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>8</td><td>35.23</td></tr> <tr><td>L</td><td>90</td><td>15</td><td>36.36</td></tr> <tr><td>H</td><td>52</td><td></td><td></td></tr> <tr><td>h</td><td>37</td><td></td><td></td></tr> </table> No. 27	λ	23	8	35.23	L	90	15	36.36	H	52			h	37			Kanakpur, V. (<i>Vide page 4—v.</i>) <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>2</td><td>34.37</td></tr> <tr><td>L</td><td>88</td><td>45</td><td>22.39</td></tr> <tr><td>H</td><td>63</td><td></td><td></td></tr> <tr><td>h</td><td>33</td><td></td><td></td></tr> </table> Nos. 4, 6	λ	23	2	34.37	L	88	45	22.39	H	63			h	33			Krishnapur s. (<i>Tipperah</i>) In a rice field close to the village so called. A large stake with a copper nail on its top and driven firmly into the ground, denotes the station. <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>5</td><td>24.83</td></tr> <tr><td>L</td><td>90</td><td>41</td><td>37.19</td></tr> </table> No. 52	λ	23	5	24.83	L	90	41	37.19								
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Kadra, XXXVIII. (<i>Vide page 9—v.</i>) <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>0</td><td>29.68</td></tr> <tr><td>L</td><td>91</td><td>16</td><td>38.72</td></tr> <tr><td>H</td><td>58</td><td></td><td></td></tr> <tr><td>h</td><td>35</td><td></td><td></td></tr> </table> No. 40	λ	23	0	29.68	L	91	16	38.72	H	58			h	35			Kandia, XXIII. (<i>Vide page 7—v.</i>) <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>9</td><td>43.25</td></tr> <tr><td>L</td><td>90</td><td>5</td><td>33.87</td></tr> <tr><td>H</td><td>54</td><td></td><td></td></tr> <tr><td>h</td><td>37</td><td></td><td></td></tr> </table> Nos. 22, 25	λ	23	9	43.25	L	90	5	33.87	H	54			h	37			Lakhinagar, XXXII. (<i>Vide page 8—v.</i>) <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>0</td><td>39.73</td></tr> <tr><td>L</td><td>90</td><td>48</td><td>10.26</td></tr> <tr><td>H</td><td>51</td><td></td><td></td></tr> <tr><td>h</td><td>38</td><td></td><td></td></tr> </table> No. 34	λ	23	0	39.73	L	90	48	10.26	H	51			h	38		
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Káliár Char s. (<i>Tipperah</i>) In a rice field, about 200 yards from the village so called, and about $\frac{1}{2}$ of a mile N. of Awirabad. <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>20</td><td>48.51</td></tr> <tr><td>L</td><td>90</td><td>41</td><td>34.58</td></tr> </table> No. 61	λ	23	20	48.51	L	90	41	34.58	Kántálbágán Factory, (<i>Nuddea</i>) Chimney. <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>3</td><td>32.3</td></tr> <tr><td>L</td><td>88</td><td>32</td><td>44.3</td></tr> </table>	λ	23	3	32.3	L	88	32	44.3	Maheshpur, XX. (<i>Vide page 6—v.</i>) <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>17</td><td>26.32</td></tr> <tr><td>L</td><td>89</td><td>49</td><td>21.02</td></tr> <tr><td>H</td><td>58</td><td></td><td></td></tr> <tr><td>h</td><td>38</td><td></td><td></td></tr> </table> No. 23	λ	23	17	26.32	L	89	49	21.02	H	58			h	38																		
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Kálibári Temple, (<i>Furreedpore</i>) Spire. <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>13</td><td>22.21</td></tr> <tr><td>L</td><td>89</td><td>56</td><td>30.04</td></tr> </table> Nos. 60, 51	λ	23	13	22.21	L	89	56	30.04	Kántálbágán s. (<i>Nuddea</i>) On left bank of the Hooghly river, about $\frac{1}{4}$ miles E. of Sukhságar village. <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>3</td><td>39.00</td></tr> <tr><td>L</td><td>88</td><td>32</td><td>17.93</td></tr> </table>	λ	23	3	39.00	L	88	32	17.93	Májjirchara s. (<i>Hooghly</i>) On Indigo char, about $\frac{1}{2}$ of a mile E. of Balágarh. <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>7</td><td>1.76</td></tr> <tr><td>L</td><td>88</td><td>31</td><td>20.68</td></tr> </table>	λ	23	7	1.76	L	88	31	20.68																								
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Kálidáshári h.s. (<i>Hill Tipperah</i>) This is also a station of the Revenue Survey. It is about $\frac{1}{4}$ miles S.E. of Kálidáspára, and 3 miles W. of Mungaur village. <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>17</td><td>36.63</td></tr> <tr><td>L</td><td>91</td><td>24</td><td>22.25</td></tr> <tr><td>H</td><td>257</td><td></td><td></td></tr> <tr><td>h</td><td colspan="3"><i>Not forthcoming</i></td></tr> </table> See Synoptical Volume of the Eastern Frontier Series, Section 23° to 26°.	λ	23	17	36.63	L	91	24	22.25	H	257			h	<i>Not forthcoming</i>			Karúlia s. (<i>Tipperah</i>) On left bank of the Megna river and only a few feet from the water's edge. <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>15</td><td>4.99</td></tr> <tr><td>L</td><td>90</td><td>41</td><td>24.81</td></tr> </table> No. 60	λ	23	15	4.99	L	90	41	24.81	Mátabi, XXXVI. (<i>Vide page 9—v.</i>) <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>0</td><td>36.55</td></tr> <tr><td>L</td><td>91</td><td>8</td><td>0.88</td></tr> <tr><td>H</td><td>59</td><td></td><td></td></tr> <tr><td>h</td><td>35</td><td></td><td></td></tr> </table> No. 38	λ	23	0	36.55	L	91	8	0.88	H	59			h	35										
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Kálikor Hill. (<i>Hill Tipperah</i>) Pole on Tula tree stem. <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>10</td><td>31</td></tr> <tr><td>L</td><td>91</td><td>22</td><td>58</td></tr> </table> See Synoptical Volume of the Eastern Frontier Series, Section 23° to 26°.	λ	23	10	31	L	91	22	58	Kávaria, XXVI. (<i>Vide page 7—v.</i>) <table style="margin-left: 20px;"> <tr><td>λ</td><td>22</td><td>59</td><td>28.37</td></tr> <tr><td>L</td><td>90</td><td>19</td><td>49.71</td></tr> <tr><td>H</td><td>50</td><td></td><td></td></tr> <tr><td>h</td><td>40</td><td></td><td></td></tr> </table> No. 28	λ	22	59	28.37	L	90	19	49.71	H	50			h	40			Mátabi Masjid. (<i>Noakholly</i>) Spire of Muhamamad Raza Patwáris masjid. <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>0</td><td>30.5</td></tr> <tr><td>L</td><td>91</td><td>8</td><td>15.2</td></tr> </table>	λ	23	0	30.5	L	91	8	15.2																
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Kálishpur, XXX. (<i>Vide page 8—v.</i>) <table style="margin-left: 20px;"> <tr><td>λ</td><td>22</td><td>59</td><td>58.79</td></tr> <tr><td>L</td><td>90</td><td>38</td><td>56.56</td></tr> <tr><td>H</td><td>50</td><td></td><td></td></tr> <tr><td>h</td><td>38</td><td></td><td></td></tr> </table> No. 32	λ	22	59	58.79	L	90	38	56.56	H	50			h	38			Kodalpur, XXIX. (<i>Vide page 8—v.</i>) <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>8</td><td>40.63</td></tr> <tr><td>L</td><td>90</td><td>33</td><td>13.94</td></tr> <tr><td>H</td><td>51</td><td></td><td></td></tr> <tr><td>h</td><td>38</td><td></td><td></td></tr> </table> No. 31	λ	23	8	40.63	L	90	33	13.94	H	51			h	38			Mendia s. (<i>Nuddea</i>) On E. bank of the Hooghly river. <table style="margin-left: 20px;"> <tr><td>λ</td><td>23</td><td>0</td><td>43.74</td></tr> <tr><td>L</td><td>88</td><td>28</td><td>15.72</td></tr> </table>	λ	23	0	43.74	L	88	28	15.72								
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		Minápur s. (<i>Hooghly</i>) On W. bank of the Hooghly river. <table style="margin-left: 20px;"> <tr><td>λ</td><td>22</td><td>57</td><td>4.24</td></tr> <tr><td>L</td><td>88</td><td>27</td><td>30.61</td></tr> </table>	λ	22	57	4.24	L	88	27	30.61																																								
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<p>Mohanpur Revenue Survey s. (Tipperah) Centre of roof of Indigo Factory.</p> <p>λ 23 24 24·66 L 90 37 55·16 Nos. 72, 73</p>	<p>Olpur Paka House. (Furreedpore) Har Mohan Rai's paka house.</p> <p>λ 23 4 15·3 L 89 52 36·5 Nos. 47, 48</p>	<p>Porádanga No. 2 s. (Nuddea) About 0·3 of a mile from N. end of village.</p> <p>λ 23 6 50·97 L 88 34 2·10</p>
<p>Mohanpur s. (Tipperah) On the N.W. corner of the Indigo Factory house. It lies about 14·75 feet distant from the Revenue Survey Station. The ⊙ engraved on a stone firmly set with mortar, denotes the station.</p> <p>λ 23 24 24·77 L 90 37 55·05 No. 62</p>	<p>Olpur Paka House Turret, (Furreedpore) N.W. corner.</p> <p>λ 23 4 17·6 L 89 52 42·2 No. 49</p>	<p>Porádanga No. 3 s. (Nuddea) At N.W. end of village.</p> <p>λ 23 7 12·52 L 88 33 27·95</p>
<p>Mona Char s. (Noakhally) On left bank of the Megna river, about 50 feet from high water mark, and about 2 miles S.W. of Raipura village.</p> <p>λ 23 0 33·16 L 90 46 41·72 Nos. 66, 67</p>	<p>Orfi, XVIII. (Fide page 6—v.)</p> <p>λ 23 1 6·98 L 89 50 23·15 H 55 h 40 No. 19</p>	<p>Prasádnagar s. (24-Pergunnahs) On E. bank of the Hooghly river.</p> <p>λ 22 54 41·78 L 88 26 50·32</p>
<p>Mukhtiárpur s. (Hooghly) On W. bank of the Hooghly river.</p> <p>λ 23 3 33·15 L 88 29 49·48</p>	<p>Pákdíha, XXI. (Fide page 7—v.)</p> <p>λ 23 16 56·08 L 89 59 34·10 H 52 h 38 No. 24</p>	<p>Rájábári s. (Dacca) Is quite close to the police station at Rájábári and is denoted by a paka pillar 14 feet high built over the Revenue Survey small paka pillar. The iron nail in the centre of the masonry work of the Revenue Survey pillar was adopted for the station. There are 6 marks ⊙ in the pillar, each 2 feet apart, the uppermost one being exactly 12 feet above the iron nail of the Revenue Survey pillar.</p> <p>λ 23 24 9·99 L 90 32 30·79 No. 63</p>
<p>Naiháti Ghát Flag. (24-Pergunnahs) On paka ghát.</p> <p>λ 22 53 29·1 L 88 27 20·0</p>	<p>Patwár, XXXVII. (Fide page 9—v.)</p> <p>λ 23 8 18·59 L 91 14 0·70 H 65 h 33 No. 39</p>	<p>Rájábári Temple, (Dacca) Top.</p> <p>λ 23 23 44·93 L 90 32 2·22 Nos. 74, 75</p>
<p>Naya Sarai s. (Hooghly) On W. bank of the Hooghly river, at the mouth and N. of the khál.</p> <p>λ 23 1 4·44 L 88 27 52·88</p>	<p>Piprágáchhi, VIII. (Fide page 6—v.)</p> <p>λ 22 58 49·07 L 89 1 53·67 H 58 h 31 No. 9</p>	<p>Rájballabhpur s. (Hooghly) Close to the factory so called.</p> <p>λ 23 5 48·01 L 88 31 56·84</p>
<p>Níamatpur s. (Nuddea) In village.</p> <p>λ 23 7 20·63 L 88 33 37·73</p>	<p>Porádanga Flag. (Nuddea) On Indigo char, 0·3 of a mile S.W. of village.</p> <p>λ 23 5 48 L 88 32 49</p>	<p>Rámnagar Flag. (Hooghly) About a mile N.E. of Raghunáthpur village.</p> <p>λ 23 1 22 L 88 28 7</p>
<p>Noagnon, XXXV. (Fide page 9—v.)</p> <p>λ 23 8 36·33 L 91 3 42·82 H 63 h 34 No. 37</p>	<p>Porádanga No. 1 s. (Nuddea) On N. bank of the Hooghly river, about 1/2 mile N.E. of Naya Chogdah.</p> <p>λ 23 6 7·05 L 88 34 10·39</p>	<p>Rukushpur Flag. (Hooghly) In village, at junction of the Dur-labhpur jhál with the Hooghly river.</p> <p>λ 23 4 24 L 88 30 23</p>
<p>Noráda, VI. (Fide page 4—v.)</p> <p>λ 22 57 50·66 L 88 53 29·05 H 56 h 35 No. 7</p>		<p>Sánpur Temple, (Backergunge) Top.</p> <p>λ 22 54 2·16 L 90 42 36·60 Nos. 68, 69</p>

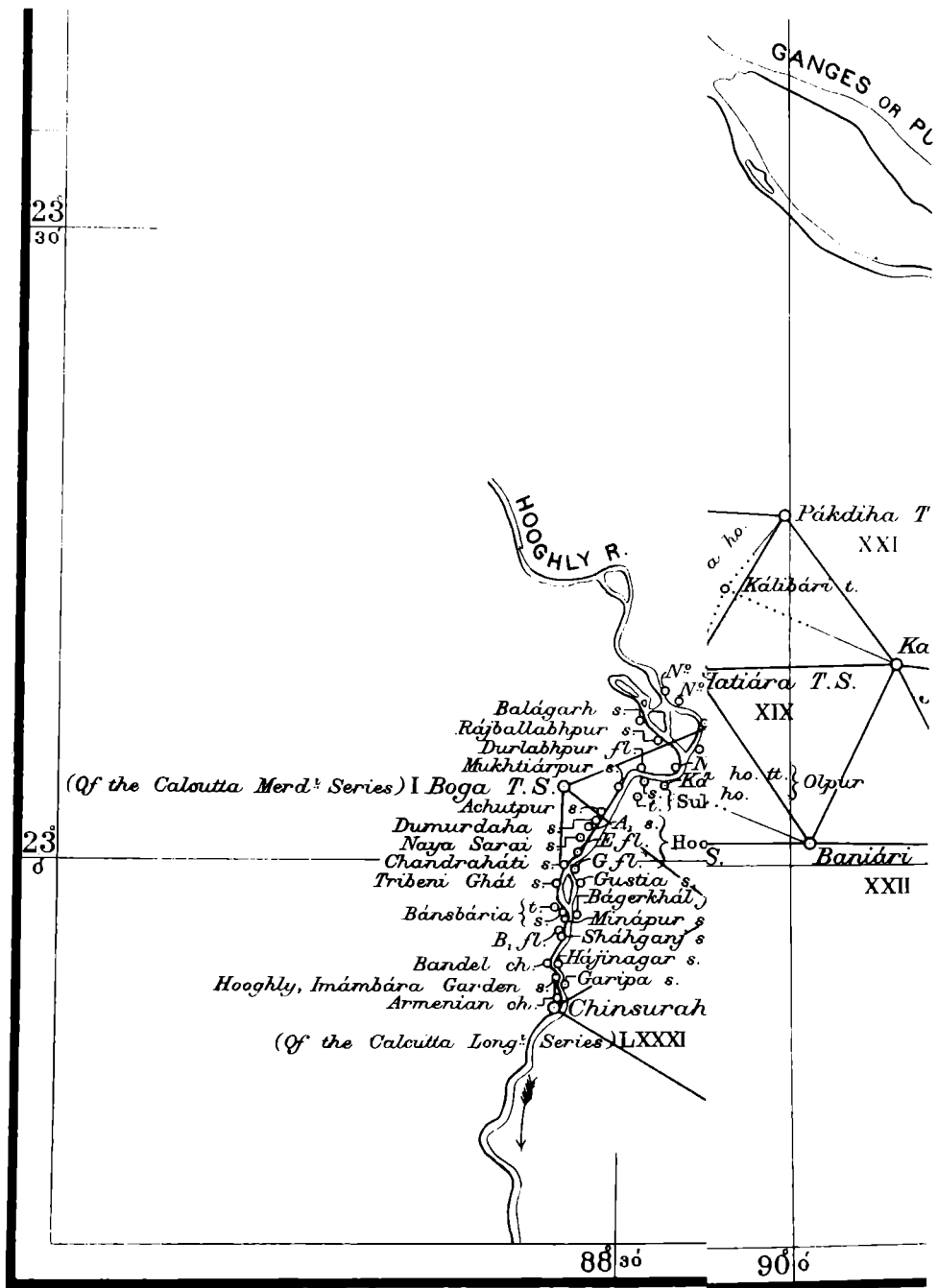
Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Shúhganj Ghát Temple. <i>(Hooghly)</i> Spire of N. temple. λ 22 56 5'9 L 88 26 53'7 Shúhganj s. <i>(Hooghly)</i> On W. bank of the Hooghly river. λ 22 56 24'51 L 88 27 3'02 Shibpur No. 1 s. <i>(Nuddea)</i> On E. bank of the Hooghly river. λ 23 7 39'85 L 88 32 58'76 Shibpur No. 2 s. <i>(Nuddea)</i> On E. bank of the Hooghly river. λ 23 7 52'63 L 88 32 29'66 Shibpur No. 3 s. <i>(Nuddea)</i> On E. bank of the Hooghly river. It is marked by a circle and dot on one of the walls of a paka ruined Indigo vat. λ 23 8 9'82 L 88 32 15'54 Shubunára, XIV. <i>(Fide page 5—v.)</i> λ 22 59 51'42 L 89 30 42'89 H 58 h 41 No. 15	Simahát, I. <i>(Fide page 4—v.)</i> λ 22 57 34'23 L 88 35 29'61 H 68 h 38 No. 1 Simlia, IX. <i>(Fide page 5—v.)</i> λ 23 6 36'44 L 89 4 25'06 H 62 h 33 No. 10 Sogaria, XLVII.* <i>(Fide page 10—v.)</i> λ 23 17 45'25 L 91 33 21'66 H 285 h 3 No. 44 Sona Char No. 1 s. <i>(Furreedpore-Tipperah)</i> In a rice field close to the village so called and about 200 feet from the right bank of the Megna river. λ 23 4 26'14 L 90 35 56'08 Nos. 63, 64 Sona Char No. 2 s. <i>(Furreedpore-Tipperah)</i> On a small island of that name towards the left bank of the Megna river. λ 23 4 8'86 L 90 39 21'98 Nos. 64, 65	Sonánadia Flag. <i>(Nuddea)</i> λ 23 7 30'7 L 89 0 48'0 Sukhságar Factory. <i>(Nuddea)</i> Flag close to Mr. Larruletta's Factory house. λ 23 3 32'5 L 88 31 32'0 Sukhságar Flag. <i>(Nuddea)</i> On Indigo ohar. λ 23 3 43 L 88 31 37 Sukhságar s. <i>(Nuddea)</i> On E. bank of the Hooghly river. λ 23 3 50'37 L 88 31 11'57 Sukhságar Temple. <i>(Nuddea)</i> Spire of black temple in town. λ 23 3 8'8 L 88 30 50'5 Tribeni Ghát s. <i>(Hooghly)</i> At the mouth and N. of the kúál. It is marked by an iron nail on N. corner of the paka ghát. λ 22 59 0'46 L 88 26 42'67 Tulerai h.s. <i>(Hill Tipperah)</i> On a long range of hills, about 3 miles E. of the high road from Comillah to Chittagong, and 1 mile N.E. of Sahan village. λ 23 13 27'39 L 91 24 13'74 Sec Synoptical Volume of the Eastern Frontier Series, Section 23° to 26°.

* Of the Eastern Frontier Series, Section 23° to 26°.

September 1880.

J. B. N. HENNESSEY,

In charge of Computing Office.



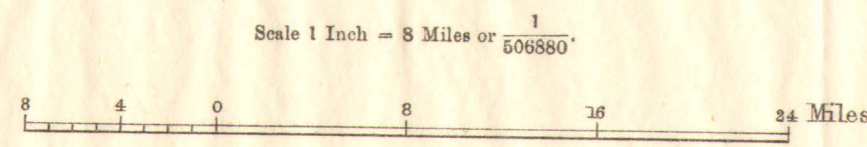
EAST CALCUTTA LONGITUDINAL SERIES

OR
SERIES U

NORTH-EAST QUADRILATERAL

Compiled and photoincographed under the orders of
LIEUT.-GENERAL J. T. WALKER, C.B., R.E., F.R.S., &C.,
Surveyor General of India
and Superintendent of the Great Trigonometrical Survey

At the Office of the Survey, Dehra Dun, January 1883.

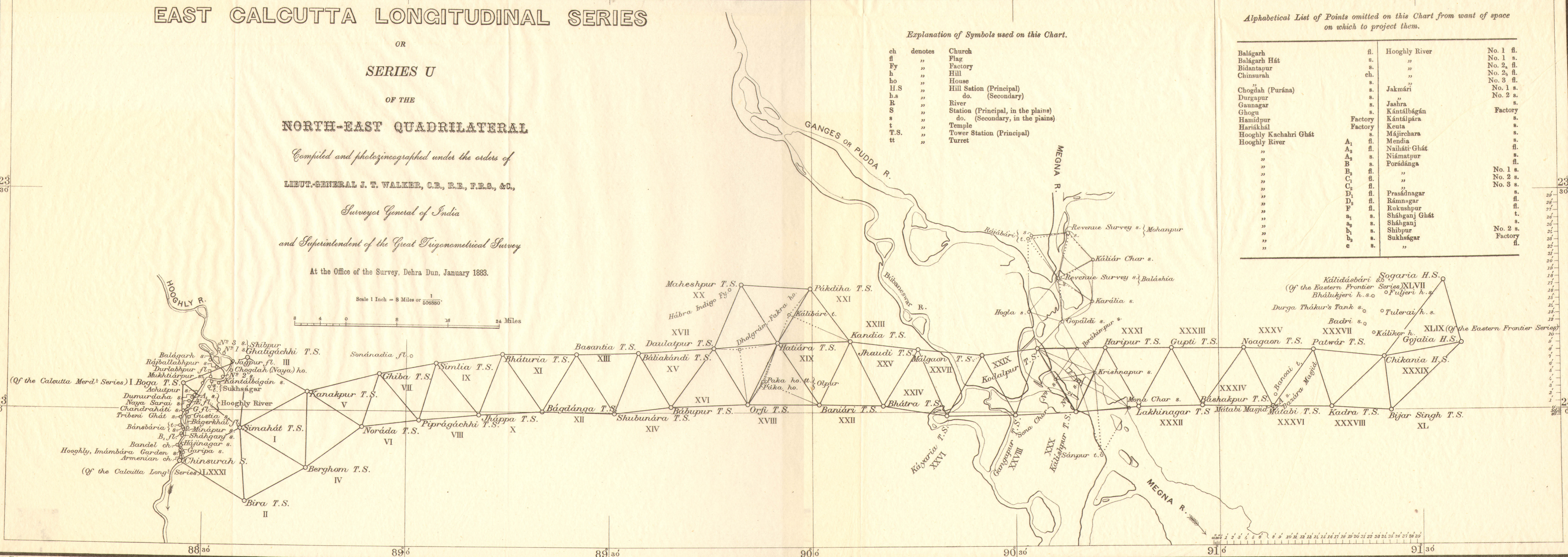


Explanation of Symbols used on this Chart.

ch	denotes	Church
fl	"	Flag
Fy	"	Factory
h	"	Hill
ho	"	House
H.S	"	Hill Station (Principal)
h.s	"	do. (Secondary)
R	"	River
S	"	Station (Principal, in the plains)
s	"	do. (Secondary, in the plains)
t	"	Temple
T.S.	"	Tower Station (Principal)
tt	"	Turret

Alphabetical List of Points omitted on this Chart from want of space on which to project them.

Balágarh	fl.	Hooghly River	No. 1 fl.
Balágarh Hát	s.	"	No. 1 s.
Bidantapur	s.	"	No. 2, fl.
Chinsurah	ch.	"	No. 2, fl.
		"	No. 3 fl.
Chogdah (Purána)	s.	Jakmári	No. 1 s.
Durgapur	s.	"	No. 2 s.
Gaunagar	s.	Jashra	s.
Ghogu	s.	Kántálbágán	Factory
Hamidpur	Factory	Kántálpara	s.
Hariákhál	Factory	Keuta	s.
Hooghly Kachahri Ghát	s.	Májrachara	s.
Hooghly River	A ₁ fl.	Mendia	fl.
"	A ₂ fl.	Nailhátí Ghát	fl.
"	A ₃ s.	Níámatpur	s.
"	B s.	Porádánga	fl.
"	B ₂ fl.	"	No. 1 s.
"	C ₁ fl.	"	No. 2 s.
"	C ₂ fl.	"	No. 3 s.
"	D ₁ fl.	Prasádnagar	s.
"	D ₂ fl.	Rámnagar	fl.
"	F fl.	Rukushpur	fl.
"	a ₁ s.	Sháhganj Ghát	t.
"	a ₂ s.	Sháhganj	s.
"	b ₁ s.	Shibpur	No. 2 s.
"	b ₂ s.	Sukhságar	Factory
"	c s.	"	fl.



EASTERN FRONTIER SERIES.

EASTERN FRONTIER SERIES—SECTION 23° to 26°.

INTRODUCTION.

The original scheme for the triangulation of that portion of British India which lies to the east of the meridian of Calcutta, included a longitudinal series extending from the neighbourhood of the Sonakhoda Base-line up the Assam (Assám) Valley as far east as British influence extended, from which meridional chains were to be carried southward at every degree apart, approximately $89\frac{1}{2}^{\circ}$, $90\frac{1}{2}^{\circ}$, $91\frac{1}{2}^{\circ}$ and $92\frac{1}{2}^{\circ}$. The longitudinal series—named the Assam Valley Longitudinal—was commenced in 1853-54, and was pushed on during successive seasons with steadily increasing difficulty and expense until 1858-59, when the officer in charge of the operations took counsel with the district Civil Authorities as to the best means of further extending the chain in the difficult and thinly inhabited tract which it had approached. The result was that he found himself constrained to apply for a considerable increase to the sum which had been assigned him for the annual expense of the party, without which he thought it would be almost useless to take the field. The finances of India, had at this time, 1859, by no means recovered from the strain caused by the Mutiny; and the Surveyor General, who had forwarded the Executive Officer's report to Government for consideration, was in due course informed that no present increase could be sanctioned; while the transfer of the party to one of the proposed meridional chains in less difficult country was permitted. The decision of Government was not received till late in the year, when the season for field operations had commenced and the party had left recess quarters. Thus to transfer it to the first of the proposed meridians, *viz.*, that of $89\frac{1}{2}^{\circ}$, would have occasioned the loss of a considerable portion of the field season in marching from the recess quarters in Cherra Poonjee a distance of some 200 miles; besides which there remained some little work to execute on the Assam Longitudinal Series before it could be satisfactorily suspended. Its termination would then be near the intended origin of the third meridional series. These considerations induced the Surveyor General to direct that the Assam Longitudinal Series should be brought to a temporary close in the field season of 1859-60 and that a meridional series should be originated from its extremity, which would pass through the Khási Hills to Sylhet (Silhat) and crossing that district would either pass through Independent Tipperah (Tripura) or skirt along the frontier to Chittagong (Chattagaon), and thence proceed to Arracan (Arakán) and eventually to Pegu. In consideration of its importance the Series was to be double throughout, that is, it was to consist of polygons or quadrilaterals; furthermore a favourable flank side was to be selected for a branch longitudinal series to be extended *viâ* Cachar

(Kachár) to Manipur, the portion as far as Cachar to be triangulated as soon as practicable in order to unite the Revenue Surveys of Sylhet, Jaintia and Cachar.

Mr. Lane, the Officer then in charge of the Assam Longitudinal Series, being compelled

Season 1859-60.

PERSONNEL.

C. Lane, Esq., Chief Civil Assistant.
Mr. W. C. Rossenrode, Civil 2nd Assistant.
" H. Beverley, 1st Class Sub-Assistant.
" A. D'Souza, 2nd " "
" R. F. Shuter, 3rd " "

to take leave of absence, at the commencement of the field season, owing to ill health, the charge of the party devolved on Mr. Rossenrode. This officer left recess quarters at Cherra Poonjee on the 25th November 1859 and reached Gauháti, in the neighbourhood of which place operations had terminated the preceding season, on the

2nd December; Mr. Beverley had been sent in advance to continue the selection of principal stations and to mark some hills for secondary stations for the Assam Longitudinal Series.

On the 5th December Mr. Rossenrode received the Surveyor General's instructions regarding the suspension of the Assam Series and the commencement of the Eastern Frontier Series. He at once recalled Mr. Beverley and together they selected the stations forming the first hexagon. After this Mr. Rossenrode commenced the final observations while Mr. Beverley continued the approximate series. Mr. Rossenrode had completed observations at nine stations by the 14th March when Mr. Lane resumed charge of the party: the observations included those at Maiang (XLV) and Tepkilabama (XLIV) for closing the Assam Longitudinal Series. Mr. Lane carried on the final observations on the Eastern Frontier Series up till the 26th April; but owing to the early setting in of the rainy season he was only able to visit Laitbli, Dinghei (VI) and revise an angle at Mautherrichan (VII). The station of Laitbli had afterwards to be rejected as a principal station owing to unsuitability of position and Laidera (VIII) adopted instead; but this was not effected till the next season.

Secondary work was executed at 15 stations and included the determination of the position of Gauháti.

The triangulation having now approached within a short distance of Cherra Poonjee

Season 1860-61.

PERSONNEL.

C. Lane, Esq., Chief Civil Assistant.
Mr. W. C. Rossenrode, Civil 2nd Assistant.
" H. Beverley, 1st Class Sub-Assistant.
" R. F. Shuter, 3rd " "

where the party recessed during the hot season, Mr. Lane was able to take advantage of a break in the rains in September to despatch Mr. Rossenrode to select principal stations. A few weeks later Mr. Beverley was deputed to lay down the positions of Cherra Poonjee and

Sylhet by secondary triangulation, and afterwards to carry a secondary chain to Jaintiápur and Silchar.

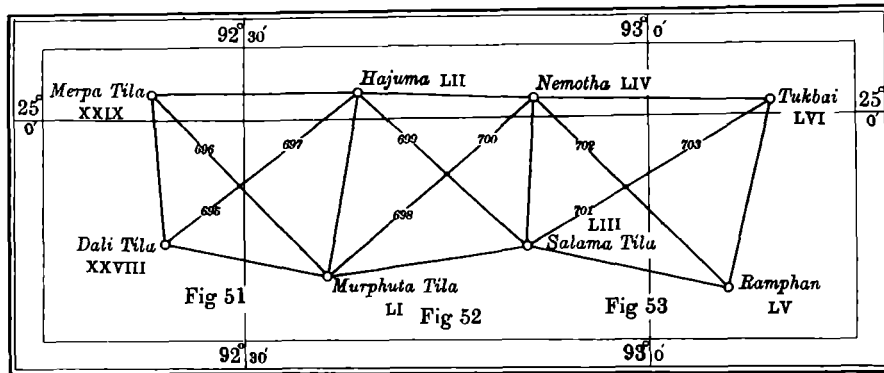
Mr. Lane himself took the field early in November and commenced final observations, Mautherrichan (VII), Maupáni (V) and Dinghei (VI) having to be again visited to fix Laidera (VIII), which was adopted as a site for a principal station in preference to Laitbli. From these four principal stations the positions of several peaks to the north were determined.

The several members of the party continued employed on the above mentioned duties until the end of the season, considerable interruption however being caused by bad weather during March and April. The severity of the weather in March may be gathered from the

circumstance that the roof of the Sylhet Mission House, a strong and substantial bungalow, was blown bodily away, and the whole of the Bandar bazár on the bank of the Surma river was utterly destroyed and some new Sepoy Lines were also blown away.

The following was the out-turn of work for the season:—Final operations were brought down to the side Taramun Tíla-Khandigaon (xiv-xv); the approximate series was carried as far as the side Salama Tíla-Nemotha, (LIII-LIV), of the Cachar Branch Series, and the Sylhet and Jaintiápur minor triangulation was completed.

The Cachar Branch, of which a diagram on the scale of 1 inch to 12 miles is here given, depends on the side Dali Tíla-Merpa Tíla, (xxviii-xxix) of the main series.



The party returned to recess quarters at Cherra Poonjee on the 5th May, the plain country having by that time become a vast expanse of water.

Sir Andrew Waugh in his instructions regarding the execution of the Eastern Frontier Series, had left it an open question whether after Cachar had been reached by a branch series, this branch should be extended to Manipur or the main series should be carried on to Chittagong. Before applying to Major (now Lieutenant General) Walker, R.E.—who on Sir Andrew Waugh's retirement had succeeded to the post of Superintendent of the Great Trigonometrical Survey—for orders on the subject, Mr. Lane consulted the Superintendent of Cachar as to the nature of the country which would have to be traversed by the triangulation in the direction of Manipur. He was informed that after leaving the inhabited part of the district, and on crossing the frontier, the whole tract was one expanse of heavy bamboo and forest jungle growing over the slopes of seven ranges of hills, from 2000 to 7000 feet high. These had to be crossed before the valley of Manipur could be reached. This tract of country was but thinly inhabited; only a few Nága and Kuki villages being scattered over it; hence no provisions for the camp would be obtainable. Major Walker, when

those facts were placed before him, decided that the main series should be continued south, but for political reasons should skirt the territory of Independent Tipperah, instead of proceeding through it.

Mr. Lane being again in ill-health and obliged to obtain leave of absence, the charge of

Season 1861-62.

PERSONNEL.

Mr. W. C. Rossenrode, Civil Assistant.
 " H. Beverley, Senior Sub-Assistant.
 " J. Ellison, 1st Class
 " R. F. Shuter, 2nd Class "

the party devolved on Mr. Rossenrode; and to strengthen his hands Mr. Ellison was transferred from Vizagapatam. Mr. Rossenrode commenced the field season by taking circum-polar observations for azimuth at Rangsanobo (XI); but was somewhat delayed by clouds, and was obliged to leave

the observations on one zero incomplete. After this the weather became very unsettled and heavy rain fell from the 5th to the 16th of November inclusive. The country being now under water the main party proceeded by boat to Taramun Tila (XIV), to obtain some vertical observations and to Abangi Tila (XVI) for final observations. Mr. Rossenrode now finding that some of the platforms on the southern flank of the Cachar Branch Series were not ready to receive the instrument, arranged to carry his observations along the northern flank and return by the southern, a proceeding attended with considerable risk, as had he failed to complete the whole of the observations his season's work would have been useless. As it proved however he did wisely; for a rebellion broke out in Jaintiápur, almost as soon as he had completed his work at the two stations of Dupi Tila (XXVII) and Merpa Tila (XXIX), both situated in that district, and it would have been risking the loss or damage of valuable Government property to have visited them later. On returning along the southern flank he was obliged to send signallers to these stations, one by name Rámdial with three men to assist him and the other Bhowáni with two men, and both parties exhibited much courage and determination in maintaining their posts until the work was completed, although the former were robbed and threatened.

Mr. Rossenrode succeeded before the end of the season in completing the Cachar Branch Series and carrying the final work as far as the side Lauraga Tila-Harargaj, (XXIV-XXV).

The Superintendent G. T. Survey had at first only contemplated that the Series should skirt Independent Tipperah, but after some correspondence with the Commissioner of Chittagong on the subject, he had hopes that the Series might be continued through Tipperah along the meridian of 92° on which it had now fallen. Mr. Ellison who joined the party on the 10th February was accordingly detached to select stations in Tipperah. He was directed to proceed first to Agartalla, the residence of the Rája and to endeavour to obtain from him an accredited agent and such other assistance as the latter could be induced to afford. He reached Agartalla on the 7th March, but was unable to obtain an interview with the Rája, owing to his being confined to his bed by sickness. Every aid was however promised by the Court officials, while at the same time many days passed without any signs of its being given. At length on the 24th March, after 17 days' delay, a man was appointed to act as agent and interpreter; and Mr. Ellison having obtained coolies started for the scene of his operations. But the season was now far advanced and several difficulties still had to be overcome, due to the unsettled state of the country and the lawless character of the tribes inhabiting it; thus

it was with great difficulty that Mr. Ellison succeeded in fixing one station, Hiara (xxx), the central station of the next polygon. He made an attempt to fix another on the eastern flank, but failed to do so, and the rainy season having by this time set in Mr. Rossenrode recalled him.

From Mr. Ellison's reconnaissance it appeared that if the Series were continued in a direct line along the meridian of 92°, it would pass through a portion of Independent Tipperah, which was wholly uninhabited* and covered with dense jungle, through which there were not even footpaths. To triangulate through such a country would be exceedingly expensive. On the other hand, to deflect the Series to the west and bring it through British territory would entail heavy expense from other causes, the country here being very thickly populated and covered with dense groves of fruit trees, the clearing of rays through which and the villages would entail heavy compensation. Mr. Beverley had had some experience of this already, having had to pay Rs. 850 for labour and compensation on one ray, Orthoki Tila-Geahpur, (xix-xxii). Mr. Rossenrode therefore recommended a compromise, and that the Series should have its eastern flank on the hills of Independent Tipperah and its western on the hills within the British boundary, this line of country being inhabited and operations likely to be both cheaper and more expeditious.

Mr. Beverley was occupied the whole season in selecting stations and preparing them for observation, shortly in advance of the main party, and all the stations were included in those visited by Mr. Rossenrode.

The party left recess quarters at Cherra Poonjee on the 21st November 1862, and, the

Season 1862-63.

PERSONNEL.

C. Lane, Esq., Chief Civil Assistant.
Mr. W. C. Rossenrode, Civil "
" H. Beverley, Senior Sub-Assistant.
" R. F. Shuter, 2nd Class "

country being still under water, proceeded by boat to Sylhet. This place was reached on the 26th, and from here Messrs. Rossenrode and Beverley were detached to carry on the approximate series in the north of Independent Tipperah. Mr. Lane now, accompanied by Mr. Shuter, started for Agartalla to visit the Rája and to gain his sanction and aid in carrying on operations through his territory. They left Sylhet by boat on the 9th December and reached Agartalla on the 22nd. Here they stayed till the 3rd January the Rája making a special request that they would witness a tiger hunt before their departure, an invitation Mr. Lane thought it bad policy to refuse.

On the 3rd January they left Agartalla and reached Lauraga Tíla (xxiv) on the 17th, where final observations were commenced. These were completed and a portion of the observations at Harargaj (xxv), made by the end of the month. In the mean time Messrs. Rossenrode and Beverley had advanced the approximate series as far as the side Sabaisara-Atamura, (xxxiv-xxxv).

During the remainder of the season the final operations proceeded very slowly. In March they were greatly retarded by bad weather and by smoke from extensive jungle fires.

* Mr. Ellison learnt that the country was uninhabited owing to the inroads of the Kachak Kukies, an independent tribe, who leave their hills and fastnesses in the interior and make frequent forays, plundering and murdering the Rája's people. The consequence was that the inhabitants had removed to the frontier or settled within British territory.

In April the weather grew worse, the storms being more frequent and severe; and by the 13th May Mr. Lane had only advanced final operations as far as the side Lambusara-Saisum, (xxxviii-xxxix), when he closed work.

Messrs. Rossenrode and Beverley advanced the approximate series as far as the side Hathimura-Sogaria, (xlvi-xlvii), continuing in the field until the 4th June. At one time it appeared as if their work would be brought to a termination by the opposition of a powerful tribe, the Jamatia, inhabiting the country to the south of Agartalla. This tribe was in a state of revolt against the Rája's authority, brought about by the exactions of his tax collectors. Mr. Rossenrode's first attempts to conciliate the Jamatias proved unsuccessful; but at length he obtained an interview with the Chief and gained permission to proceed with his work without further interruption, the Chief undertaking moreover to render him assistance.

A little secondary triangulation was executed during the season by Mr. Shuter, whenever he could be spared from his duties as observatory recorder. The party recessed at Chittagong.

The party again took the field on the 17th November 1863, arrived at Comillah (Kamilla)

Season 1863-64.

PERSONNEL.

C. Lane, Esqr., Chief Civil Assistant.
Mr. W. C. Rossenrode, " "
" H. Beverley, Civil 2nd "
" W. C. Price, 3rd Class Sub-Assistant.

on the 23rd, where three or four days were spent in necessary preparations, and then proceeded to Agartalla, which was reached on the 29th. Here some further time was occupied in despatching provisions to the principal stations of Dawa (xl), Lambusara (xxxviii), and Saisum (xxxix), and on the 10th December the party started for Barjatua (xli), where final observations were to commence. Mr. Shuter having resigned his appointment, Mr. Price had been appointed in his place and joined Mr. Lane at Agartalla to act as observatory recorder.

The 24-inch Theodolite had been sent to Calcutta in August to be fitted with a new object glass, the old one having become dull, and it was received back at Chittagong very shortly before the party left for the field. There was no time for properly adjusting it and this had to be done at Barjatua. Owing to this, the smoke caused by jungle fires, and to night fogs, observations were not completed at Barjatua till the 19th; after which the party marched to Dawa (xl), where in addition to the measurement of horizontal angles, a value of azimuth was to be obtained from circum-polar star observations. Dawa was reached on the 23rd December, and the stars selected for azimuth observations were Polaris and No. 4165 of the British Association Catalogue, at opposite elongations. The observations at Dawa were not completed till some time in January, smoke and fog still causing much delay, and the next station visited, Lambusara (xxxviii), was not quite completed by the end of this month. In February Saisum (xxxix), and Janu (xlii) were finished.

In March the weather somewhat improved and Mr. Lane was able to finish Neng (xliv), Rokhia (xliii), and Eta (xlv), and to co-operate with Mr. Rossenrode in fixing several points in and about Comillah. In April observations at Hathimura (xlvi), Sáheb-mura (xlviii) and the greater portion of those at Sogaria (xlvii), were completed, and in May the triangulation was brought to a close for the season on the side Gojalia-Tulamura,

(XLIX—L). A small amount of secondary work was effected during this month by Mr. Beverley. For the greater part of the season Messrs. Rossenrode and Beverley were employed in advancing the approximate series. As the major portion of this however fell beyond the limits of the North-East Quadrilateral no remarks need be made regarding it.

The following information regarding the portion of Independent Tipperah, through which trigonometrical operations were carried, has been extracted from reports by Mr. C. Lane.

Physical Character of the Country.—Independent Tipperah is an immense block of earth hills, covered with the densest possible reed, or “Makla” bamboo jungle, from 30 to 80 feet high and with trees from 80 to 120 feet high. The hills are intersected by innumerable water courses and a few rivers. There are four parallel ranges of hills, the first in order from the west is that on which Champamura (xxxvii), Bormura (xxxvi) and Saisum (xxxix) are situated and is about 30 miles long; the next, on which Atarmura (xxxv) is situated, is about 43 miles long; next comes the Langturai range, about 56 miles in length on which Batchia (xxxiii) is placed; and east of this again is a range about 40 miles long on which Harargaj (xxv) and Komuntah (xxxi) are situated. Further to the east are several high hills and ranges. Although the general mass of the hills is of earth, clay, slate and granite were occasionally met with in the beds of some of the streams.* No limestone was seen nor is any believed to exist.

Rivers.—The principal rivers met with were the Manu, flowing from south to north through the hills and then turning westward till it entered the Kusiyára in Sylhet: the Deo-gang coming from the east through the ranges of hills on which Harargaj and Komuntah are situated and falling into the Manu some 3 miles north of the latter station: the Khaoyái which has a remarkably strong current, flows from south to north and falls into the Barák in the Sylhet district: the Dolai flows from south to north and falls into the Manu some 3 miles N. E. of Lauraga Tíla. Thus three of the rivers rise in the Tipperah Hills, but the fourth comes from the unknown country to the east inhabited by Kochak Kukies.

Climate.—In November, December and January the temperature is but little below that on the summits of the hills in the hot season except in the valleys in the vicinity of water-courses, where it feels damp and chilly. The latter is the character of the cold weather climate at new Agartalla, the chief town of Independent Tipperah, owing to the vicinity of bogs, marshes, tanks and pools of water. The hot weather is rather trying to those on the march, except in the neighbourhood of streams or in the forest, but it is dangerous to bivouac in such places as it is apt to engender jungle fever. Of the rainy season there was no experience; but judging from the physical features, the annual rainfall must be considerable; and owing to the numerous bogs and fens, the low lying country must be nearly uninhabitable.

Trees, &c.—The trees are jaril; gúmbar of two kinds, “sil” and “ful”; rángi of two kinds; garjan, from the roots of which oil is extracted; rúdrík, or udras; anwarkali, of which handles of spears are made; nágesri, sometimes called iron-wood owing to its excessive hardness; sísu; bándálati, which attains a height of about 15 feet and a girth of about 3 feet, and is said to be impervious to the attacks of white ants, but is little used from its crooked growth; dhúp; agar, the core of which when burnt produces a scent which is highly esteemed; chamal, prized for the width of planks obtainable from it; pitraj, a useful wood, the nut of this tree produces oil for burning; bajna or bádráng, the timber is remarkable for its durability, the fruit produces an oil which when fresh is eaten like ghee; hargajja, a very durable wood; awal, a very hard wood; singari, of which the natives in the adjoining plains make ploughs; loharjori, a very hard wood; and panituri.

* In marching from Champanura to Lambusara Mr. Lane passed through a narrow gorge with perpendicular sides of granite from about 150 to 200 feet high, within which was a water-course abounding with blocks of petrified wood of the Awal tree, of various sizes up to 4 feet in length by 10 inches thick. This wood is said to petrify in about 5 years.

The tea tree was found by Mr. Rossenrode. There is another tree in this country called in Bengali "maritcha" growing to 25 or 30 feet high, the leaves of which closely resemble those of tea. The clove plant was found indigenous on the table-land between Gojalia and Tulamura.

Inhabitants.—Independent Tipperah is very thinly inhabited along the northern and western frontiers by Kukies, Tipperahs, Nawatias and some Manipurics. The country east and south-east of Haragaj and Komuntah is inhabited by Kochak Kukies and other wild and hostile tribes. The Kukies are divided into five tribes, *viz.*, Umroi, Chutlang, Halam, Baipai and Kochak: the last named are the most formidable. The Tipperahs are a stronger built race than the Kukies, but less industrious and energetic. They are divided into nine clans. The Nawatias are divided into 12 clans, having as many modifications of their dialect. The Manipurics are settled in hamlets along the skirts of the hills.

Cancers and several kinds of skin disease are very prevalent among the Kukies. The want of cleanliness, the bad water, the food, which consists of dog's and elephant's flesh, snakes, the *goh*—a large species of lizard—and poisoned fish, as well as foul water, must be fertile causes of much disease. A branch of a certain tree thrown into the water poisons fish, which are then collected and eaten. The huts of both Kukie and Tipperahs are elevated about 4 to 7 feet above the ground and underneath are kept pigs and fowls. No cattle were observed in Hill Tipperah, except in the plains of Bisalgar, Billenia and Udepur Thanas situated in valleys.

Cultivation.—The Kukies cultivate rice, cotton, kachu a species of wild yam, Indian corn, indigo, some kinds of pumpkin, sem—a kind of bean, kulang—a species of pulse, chillies, til and sesamum—a kind of oil plant. Only cotton and sesamum are exported. Of all products cotton is the most extensively grown. The mode of cultivation is primitive in the extreme. During the month of March a patch of bamboo jungle is cut down and allowed to dry which it does in some 15 or 20 days; fire is then applied, after which the stumps are removed. As soon as a good shower of rain has fallen, men women and children proceed with tools and seed to these plots which are frequently at long distances from their habitations; their chief tools are dows with which cuts are made in the ground and the seed dropped into the holes thus produced.

Many further particulars regarding Hill Tipperah are given by Captain Badgley of the Survey Department in his report on his operations of 1872-73 to the Surveyor General.

The Eastern Frontier Series, Section 23° to 26°, forms the eastern boundary of the North-East Quadrilateral, into the Simultaneous Reduction of which it entered. The errors which fell to the lot of this Series in the general reduction were:—

In Latitude	— 0"·138
„ Longitude	— 0'·611
„ Azimuth	— 5'·630
„ Side	{ Logarithm + 0·000,0096,8 giving a ratio of about 1·4 inches per mile.

The Cachar Branch Series forms a pendant to the Eastern Frontier Series and therefore did not enter the general reduction. The corrections which it has received are only such as are due to the change produced by the reduction in the side of origin.

MUSSOOREE, }
October 1882. }

W. H. COLE.

EASTERN FRONTIER SERIES—SECTION 23° to 26°.

ALPHABETICAL LIST OF PRINCIPAL STATIONS.

Abangi Tíla	XVI.	Lambusara	XXXVIII.
Atarmura	XXXV.	Landau Modo	IV.
Barjatua	XLI.	Lauraga Tíla	XXIV.
Bar Utai Tíla	XVIII.	Mama Bhagna Tíla	XXVI.
Batchia	XXXIII.	Maupáni	V.
Bisemberpur	XVII.	Mautherrichan	VII.
Bormura	XXXVI.	Merpa Tíla	XXIX.
Champamura	XXXVII.	Mokerson	I.
Churamani	XXXII.	Mopen	XII.
Dali Tíla	XXVIII.	Mopon	II.
Dawa	XL.	Mosingi	IX.
Dinghei	VI.	Mun	X.
Dupi Tíla	XXVII.	Neng	XLIV.
Eta	XLV.	Orthoki Tíla	XIX.
Geahpur	XXII.	Pakibar Tíla	XXI.
Gojalia	XLIX.	Rangsanobo	XI.
Harargaj	XXV.	Rokhia	XLIII.
Harogaon (Of the Assam Longitudinal Series).	XLII.	Sabaisara	XXXIV.
Hathimura	XLVI.	Sáhebmura	XLVIII.
Hiara	XXX.	Saisum	XXXIX.
Jamu	XLII.	Sogaria	XLVII.
Kailás Tíla	XX.	Taramun Tíla	XIV.
Khandigaon	XV.	Tepkilabama (Of the Assam Longitudinal Series).	XLIV.
Komuntah	XXXI.	Thanjináth	XIII.
Kulerai Tíla	XXIII.	Tulamura	L.
Laidera	VIII.	Umter	III.

CACHAR BRANCH SERIES.

Hajuma	LII.	Ramphan	LV.
Murphuta Tíla	LI.	Salama Tíla	LIII.
Nemotla	LIV.	Tukbai	LVI.

EASTERN FRONTIER SERIES—SECTION 23° to 26°.

NUMERICAL LIST OF PRINCIPAL STATIONS.

XLII	.	.	.	.	Harogaon.	XXV	.	.	.	.	Harargaj.
					(of the Assam Longitudinal Series).						
XLIV	.	.	.	.	Tepkilabama.	XXVI	.	.	.	.	Mama Bhagna Tíla.
					(of the Assam Longitudinal Series).						
I	.	.	.	.	Mokerson.	XXVII	.	.	.	.	Dupi Tíla.
II	.	.	.	.	Mopon.	XXVIII	.	.	.	.	Dali Tíla.
III	.	.	.	.	Umter.	XXIX	.	.	.	.	Merpa Tíla.
IV	.	.	.	.	Landau Modo.	XXX	.	.	.	.	Hiara.
V	.	.	.	.	Maupáni.	XXXI	.	.	.	.	Komuntah.
VI	.	.	.	.	Dinghei.	XXXII	.	.	.	.	Churamani.
VII	.	.	.	.	Mautherrichan.	XXXIII	.	.	.	.	Batchia.
VIII	.	.	.	.	Laidera	XXXIV	.	.	.	.	Sabaisara.
IX	.	.	.	.	Mosingi.	XXXV	.	.	.	.	Atarmura.
X	.	.	.	.	Mun.	XXXVI	.	.	.	.	Bormura.
XI	.	.	.	.	Rangsanobo.	XXXVII	.	.	.	.	Champamura.
XII	.	.	.	.	Mopen.	XXXVIII	.	.	.	.	Lambusara.
XIII	.	.	.	.	Thanjináth.	XXXIX	.	.	.	.	Saisum.
XIV	.	.	.	.	Taramun Tíla.	XL	.	.	.	.	Dawa.
XV	.	.	.	.	Khandigaon.	XLI	.	.	.	.	Barjatua.
XVI	.	.	.	.	Abangi Tíla.	XLII	.	.	.	.	Jamu.
XVII	.	.	.	.	Bisemberpur.	XLIII	.	.	.	.	Rokhia.
XVIII	.	.	.	.	Bar Utni Tíla.	XLIV	.	.	.	.	Neng.
XIX	.	.	.	.	Orthoki Tíla	XLV	.	.	.	.	Eta.
XX	.	.	.	.	Kailás Tíla.	XLVI	.	.	.	.	Hathimura.
XXI	.	.	.	.	Pakibar Tíla.	XLVII	.	.	.	.	Sogaria.
XXII	.	.	.	.	Geahpur.	XLVIII	.	.	.	.	Sáhebmura.
XXIII	.	.	.	.	Kulerai Tíla.	XLIX	.	.	.	.	Gojalia.
XXIV	.	.	.	.	Lauraga Tíla.	L	.	.	.	.	Tulamura.

CACHAR BRANCH SERIES.

LI	.	.	.	.	Murphuta Tíla.	LIV	.	.	.	.	Nemotha.
LII	.	.	.	.	Hajuma.	LV	.	.	.	.	Ramphan.
LIII	.	.	.	.	Salama Tíla.	LVI	.	.	.	.	Tukbai.

EASTERN FRONTIER SERIES—Section 23° to 26°.

PRINCIPAL TRIANGULATION. DESCRIPTION OF STATIONS.



The Principal Stations of this Series including those of the Cachar Branch are, with 4 exceptions, situated on hills. They consist of solid circular masonry pillars $3\frac{1}{2}$ feet in diameter and from 1 to 9 feet in height, carrying a mark (⊙) engraved either on the rock *in situ* or on a stone imbedded at about the ground level; in the normal of this mark one or more others engraved on stones are inserted in the pillar: in one or two instances where the rock rises sufficiently above the ground to admit of a pillar being built round it, there is no other mark than that on the rock. For the accommodation of the observatory tent platforms of stone, 14 feet square, have been constructed around the pillars and level with their surfaces at the first 13 stations and at 5 others further on; whilst the remainder had temporary wooden scaffoldings, 14 to 18 feet square, erected around them. The exceptions referred to are the stations XV, XVII, XXII and XXVI, which consist of perforated masonry pillars 11 to 21 feet in height, either circular (7 feet in diameter) or rectangular (7 to 10 feet square) at base, and circular ($3\frac{1}{2}$ feet in diameter) at top, with one mark-stone at about the ground level and another below in the foundation: these also had wooden scaffoldings, 14 to 18 feet square, erected around them. Access to the ground level mark was obtained by a passage (now closed up) specially made for the purpose.

The following descriptions have been compiled from those given by the Officers who executed the Series, supplemented as regards adjacent villages from information obtained from other original records of the Series as well as from the Revenue and Topographical Survey Maps of the country traversed. The information as to the local sub-divisions in which the several stations are situated, has been derived where practicable from the latest Annual Reports received from the civil authorities to whose charge the stations have been committed.

XLII.—(*Of the Assam Longitudinal Series*). Harogaon Hill Station, lat. $25^{\circ} 56'$, long. $91^{\circ} 28'$ —observed at in 1859 and 1860—is 1 mile E. of the Kulsi stream and is so called after a village of that name near the foot of the hill in a S.E. direction; it is also sometimes called Sagalsari or Chagalsari; thána Chhaygaon, district Kámrúp.

The pillar, which is surrounded by a platform 13 feet square, is solid and isolated, and 0.96 of a foot in height. It has a mark on the rock *in situ* and another at its surface. The hill, which is not very high and is connected with extensive low chains, may not inaptly be called rather a prominent spur of the low hills emanating from the main range of the Gáro plateau on the south. The directions and estimated distances of the circumjacent villages are:—Khotpára N.W., miles $3\frac{1}{4}$; Daryapára W., miles $4\frac{1}{4}$; Hugri (on the Kulsi stream) S.S.W., miles $4\frac{1}{4}$; Meghlabári S., miles $4\frac{1}{4}$.

XLIV.—(*Of the Assam Longitudinal Series*). Tepkilabama Hill Station, lat. $25^{\circ} 53'$, long. $91^{\circ} 37'$ —observed at in 1860—is on a high peak and about $1\frac{1}{2}$ miles N. of the Jirang Staging Bungalow on the high road between Cherra Poonjee and Gauháti; thána Shillong, district Khási and Jaintia Hills.

The pillar, which is surrounded by a platform 14 feet square, is solid and isolated, and 2 feet in height. It has a mark on the surface and another at the foundation. The directions and estimated distances of the circumjacent villages are:—Jirang or Minar E., mile $\frac{1}{4}$; Hurajirang N.W. by W., miles 2; Umshuru N., miles 2.

I. Mokerson Hill Station, lat. 25° 49', long. 91° 32'—observed at in 1860—is on the highest among a group of low hills connected with the Khási range, about a mile N. of the Khiri river; táluk Bardwár, thána Shillong, district Khási and Jaintia Hills.

The pillar, which is surrounded by a stone platform 14 feet square, is solid, 3 feet high and has a mark at the surface and another 2.46 feet below. The directions and estimated distances of the circumjacent villages are:—Shiliankiri S.W., miles 2; a hamlet of Matikar Rája E., miles 1½; Umberthi E., mile 1; Warmasau E., miles 2½.

II. Mopon Hill Station, lat. 25° 48', long. 91° 24'—observed at in 1860—is on the western of two peaks of an elevated hill, about 3 miles S. of the junction of the Siri stream with the Khiri river and ½ a mile E. of Mopon village; táluk Nongspung, thána Shillong, district Khási and Jaintia Hills.

The pillar, which is surrounded by a stone platform 14 feet square, is solid, 1.75 feet high and has a mark at the surface and another in the foundation. The directions and estimated distances of the circumjacent villages are:—Rájabala on the Siri stream N., miles 3; Sankhong E. by S., mile 1; Risim S.W., miles 2½; Hamapur N.E. by E., miles 4.

III. Umter, or Umlor Hill Station, lat. 25° 47', long. 91° 43'—observed at in 1860—is on a high commanding hill about midway between the two roads leading from Cherra Poonjee and Shillong to Gauháti; táluk Bardwár, thána Shillong, district Khási and Jaintia Hills. No villages are visible from the station.

The pillar, which is surrounded by an earthen platform 14 feet square, is solid, 3.5 feet high and has a mark at the surface and another 4 feet below (that is 6 inches below the foundation of the pillar). The directions and estimated distances of the adjacent villages are:—Umlor N.E. by N., miles 2½; Umter (on road from Cherra Poonjee to Gauháti) N.N.W., miles 3.

IV. Landau Modo Hill Station, lat. 25° 40', long. 91° 27'—observed at in 1860—is on a bold projecting spur at the extremity of the Khási range; táluk Rámraí, thána Shillong, district Khási and Jaintia Hills. The village from which the station derives its name is a little below, on the N.E. slope of the hill.

The pillar, which is surrounded by a stone platform 14 feet square, is solid, 3.5 feet high and has a mark at the surface and another 3.22 feet below on the rock *in situ*. The directions and estimated distances of the circumjacent villages are:—Sinja E.N.E., miles 2; Marbona N.W., miles 2½; Klaujiurang W. by N., miles 3½; Nongriat S.E., miles 3½.

V. Maupáni or Maukára Hill Station, lat. 25° 42', long. 91° 37'—observed at in 1860—is on a projecting rock rising 30 feet above the highest part of the hill, about 4 miles W. by N. of the Nanklau Dák Bungalow on the road from Cherra Poonjee to Gauháti; táluk Nanklau, thána Shillong, district Khási and Jaintia Hills.

The station is marked on the rock *in situ* around which a platform is built. The directions and estimated distances of the circumjacent villages are:—Maukára E., mile 1; Nanklau thána and bazar E. by S., miles 4; Mause S. by E., miles 1½.

VI. Dinghei Hill Station, lat. 25° 36', long. 91° 51'—observed at in 1860—is on the highest part of an elevated ridge which runs N.E. and S.W. for nearly 1½ miles, and about 3 miles from the left bank of the Umiám river; táluk Nanklau, thána Shillong, district Khási and Jaintia Hills.

The station is marked on a projecting rock *in situ* around which a pillar 2 feet high and a stone platform 13½ feet square have been built. The directions and estimated distances of the circumjacent villages are:—Maulim S. by W., miles 1½; Lathado N.E., miles 1½; Nongkrai S. by E., mile 1; Nongsinga W.S.W., mile 1.

VII. Mautherrichan Hill Station, lat. 25° 32', long. 91° 30'—observed at in 1860—is on one of the most elevated among the Khási hills, and commands an extensive view in every direction, including the plains of Assam; táluk Mariau, thána Shillong, district Khási and Jaintia Hills.

The pillar, which is surrounded by a stone platform 14 feet square, is solid, 3.5 feet high and has a mark at the surface and another on the rock *in situ*. The directions and estimated distances of the circumjacent villages are:—Mariau N.E. by N., miles 3; Sakersai S.W. by S., miles 2½; Uua N.W. by W., miles 3½; Morkusa W., at the foot of the hill, miles 2½.

VIII. Laidera or Mokneang Hill Station, lat. 25° 30', long. 91° 43'—observed at in 1860—is on a high hill extending some miles E. and W. and about 2½ miles W. by N. of Saiyong on road from Cherra Poonjee to Gauháti. The station is not on the highest part of the hill, the site having been selected with reference to the rays to surrounding stations; táluk Rámraí, thána Shillong, district Khási and Jaintia Hills.

The pillar, which is surrounded by a stone platform 14 feet square, is solid, 4 feet high and contains three mark-stones of which the second and third are respectively 2 and 4 feet above the one in the foundation. The directions and estimated distances of the circumjacent villages are:—Mokneang S.W., on lower part of the hill, mile ½; Langái nearly W., miles 3½; Mane N., miles 1½; Waiaug S.W., miles 2½; Nongse S, miles 3.

IX. Mosingi or Taulangwár Hill Station, lat. $25^{\circ} 21'$, long. $91^{\circ} 38'$ —observed at in 1861—is on one of the swells on the top of an immense block of hills with precipitous sides almost throughout and about 8 miles W.N.W. of the station of Cherra Poonjee. Coal and limestone abound here and iron ore is smelted in considerable quantity. The locality is well watered; táluk Máharám, thána Cherra Poonjee, district Khási and Jaintia Hills.

The pillar, which is surrounded by a stone platform 14 feet square, is solid, 8 feet high and contains three mark-stones, one at the surface, another in the foundation and a third midway between the two. The directions and estimated distances of the circumjacent villages are:—Sichila N.E., mile 1; Ramsokhab S., mile 1; Mausingi S., mile $\frac{1}{2}$. The pillar has completely fallen down.

X. Mun Hill Station, lat. $25^{\circ} 25'$, long. $91^{\circ} 53'$ —observed at in 1860 and 1861—is on the northern extremity of a high spur, with deep precipices on almost all sides and about $2\frac{1}{2}$ miles S. by W. of the Lailanghot Dák Bungalow on the road to Cherra Poonjee; the only approach is from the village of Laimosau; thána Cherra Poonjee, district Khási and Jaintia Hills.

The pillar, which is surrounded by a stone platform 15 feet square, is solid, 9 feet high and contains four mark-stones of which the second, third and fourth are respectively 3, 6 and 9 feet above the one in the foundation. The directions and estimated distances of the circumjacent villages are:—Laimosau N.E., miles 2; Ramkheug S., miles $1\frac{1}{2}$; Suair W. by N., miles 2.

XI. Rangsano Hill Station, lat. $25^{\circ} 15'$, long. $91^{\circ} 46'$ —observed at in 1861—is on what is called the Coal Mine hill, immediately S. of the Civil and Military Station of Cherra Poonjee and about $1\frac{1}{2}$ miles S.W. of the Station Church; táluk and thána Cherra Poonjee, district Khási and Jaintia Hills. A great portion of this hill has been deeply excavated for coal, and a spring jets out at a short distance from the station to the west through a bed of coal.

The pillar, which is surrounded by a stone platform 14 feet square, is solid, 1.08 feet high and has a mark at the surface and another on a projecting rock *in situ*. The directions and estimated distances of the adjacent places are:—Mausmai S.E., mile 1; Maumlo W.S.W., mile 1.

XII. Mopen Hill Station, lat. $25^{\circ} 14'$, long. $91^{\circ} 29'$ —observed at in 1861—is on a spur running nearly N.W. and S.E. and about 400 yards S.E. and considerably below the highest point of the hill; táluk Bhowal, thána Cherra Poonjee, district Khási and Jaintia Hills.

The pillar, which is surrounded by a stone platform 14 feet square, is solid, 2 feet high and has a mark-stone at the surface and another in the foundation. Simui Puraugaon Nangkoba village is at the foot of the first descent from the station.

XIII. Thanjináth Hill Station, lat. $25^{\circ} 18'$, long. $91^{\circ} 56'$ —observed at in 1861—is on a square mass of hills facing the plains of Sylhet and 180 feet N.W. of Thanjináth village; táluk Khairim, thána Shillong, district Khási and Jaintia Hills.

The pillar, which is surrounded by a stone platform 14 feet square, is solid, 3 feet high and has two mark-stones imbedded within. The directions and estimated distances of the circumjacent villages are:—Laithiptang W.N.W., mile $\frac{3}{4}$; Maukronod W.S.W., mile 1; Kastan S.E., mile 1; Phlanglongslan N. by W., miles $1\frac{1}{2}$.

XIV. Taramun Tíla Hill Station, lat. $25^{\circ} 3'$, long. $91^{\circ} 42'$ —observed at in 1861—is on the highest of a group of low hills nearly a mile N.W. by N. of the bazar and town of Chhátak on the left bank of the Surma river; thána and pargana Chhátak, district Sylhet.

The pillar, which is surrounded by a wooden platform 15 feet square, is solid, 4 feet high and has a mark-stone at the surface, another in the foundation and a third midway between the two. The directions and estimated distances of the circumjacent villages are:—Kuchbáripára E.N.E., mile $\frac{3}{4}$; Rasúlganj thána S.E., mile 1; Tengargaon S., miles $1\frac{1}{2}$; Changbir N.W., miles $3\frac{1}{4}$.

XV. Khandigaon Tower Station, lat. $25^{\circ} 5'$, long. $91^{\circ} 55'$ —observed at in 1861—is close to the village so called; thána Goyáinghát, pargana Paiangul, district Sylhet.

The station consists of a perforated circular pillar 15.08 feet high, 7 feet in diameter at base, $3\frac{1}{2}$ feet at top, surrounded by a wooden platform 14 feet square. No information is forthcoming as to the mark-stones imbedded, but it is presumed that one or more must have been inserted in a manner similar to that at station XXII. The directions and estimated distances of the circumjacent villages are:—Pakarkhál N.E., mile $\frac{1}{2}$; Kamargaon S.W., miles $1\frac{1}{2}$; Lamni N. by W., miles $3\frac{1}{2}$; Durgaon N.E., miles 3.

XVI. Abangi Tíla Hill Station, lat. $24^{\circ} 56'$, long. $91^{\circ} 54'$ —observed at in 1861—is on a low hill about $3\frac{1}{2}$ miles N. of the town of Sylhet; thána Párkul, pargana Uttarkatch, district Sylhet. Maulakhora village, through which the road to the station passes, is at the foot of the hill.

The pillar, which is surrounded by a stone platform 14 feet square, is solid, 6 feet high and contains 3 mark-stones, one at the foundation, the second 3 feet above it and the third at the surface of the pillar. The directions and estimated distances of the circumjacent places are:—Ambarkhana bazar S. by E., miles $2\frac{1}{2}$; Tokar bazar S.W., miles 3; Sukhbáshpára village W., miles $2\frac{1}{2}$.

XVII. Bisemberpur or Nágra Kálápur Tower Station, lat. 24° 55', long. 91° 43'—observed at in 1862—is on the northern bank of the Nágra khál, about 4½ miles W. of Láma Kázi bazar on the Surma river and close to the village of Bisemberpur; thána Párkul, pargana Chatianagar, district Sylhet.

The station consists of a perforated pillar 11 feet high, 7 feet square at base and 3½ feet in diameter at top, surrounded by a wooden platform 14 feet square. No information is forthcoming as to the mark-stones imbedded, but it is presumed that one or more must have been inserted in a manner similar to that at station XXII. The directions and estimated distances of the circumjacent villages are:—Rádhánagar E. by N., mile 1; Gopálpurpara N.W., mile ½; Bagunar hát (market) S. by W., miles 1½.

XVIII. Bar Utni or Baishtam Tíla Hill Station, lat. 24° 58', long. 92° 2'—observed at in 1861—is on the most elevated among a group of low hills called the Chiknagul hills, in a wild and uninhabited locality, and derives its name from its sides being precipitous; thána Goyáinghát, pargana Harbika, district Sylhet.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 6.5 feet high and has a mark-stone at the surface, another in the foundation and a third midway between the two. The directions and estimated distances of the circumjacent villages are:—Fatehpur bazar N., miles 2; Shámpur N.E., miles 4; Chiknagul S. by E., miles 2; Barnagar N.W., miles 2½.

XIX. Orthoki Tíla Hill Station, lat. 24° 49', long. 91° 52'—observed at in 1862—is on a low hill about 1 mile S. of the large village of Lála bazar and 4 miles E. by N. of Rasúlganj kachahri (court house); thána Párkul, pargana Samkher, district Sylhet.

The pillar, which is surrounded by a stone platform 14 feet square, is solid, 3 feet high and has a mark-stone at the surface and another in the foundation. The directions and estimated distances of the circumjacent villages are:—Jalálpur S.E., miles 2½; Faridpur S., mile 1; Shirázpur W. by N., miles 1½; Surigaon N.E. by N., miles 2.

XX. Kailás Tíla Hill Station, lat. 24° 48', long. 92° 4'—observed at in 1862—is on the summit of a low hill and at the side of a place of worship now in decay, on which account the hill is held sacred by all the inhabitants; thána Párkul, pargana Dhákádakshin, district Sylhet.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 6 feet high and contains four mark-stones, of which the second, third and fourth are respectively 2, 4 and 6 feet above the one in the foundation. The directions and estimated distances of the circumjacent places are:—Bhair bazar N.E., miles 1½; Balauri village S.S.E., mile ¾; Madhuganj hát S.W. by S. miles 1½; Párkul bazar W., mile 1; Mohanpur on the Khusiýára river N.W. by N., miles 2½.

XXI. Pakibar Tíla or Káli Pakudar Hill Station, lat. 24° 40', long. 91° 58'—observed at in 1862—is on the western of a range of low hills, about 2 miles E.N.E. of Nayabazar on the Khusiýára river and 3 miles S.S.W. of Fenchuganj hát and Munsif's kachahri; thána Rájnagar, pargana Indamnagar, district Sylhet.

The pillar, which is surrounded by a stone platform 14 feet square, is solid, 2 feet high and contains three mark-stones, of which the second and third are respectively 1 foot and 1.75 feet below the one at the surface of the pillar. The directions and estimated distances of the circumjacent villages are:—Rájkishan hát S.W., miles 2½; Faridpur N., mile 1; Mirzápur W., mile ¼.

XXII. Geahpur Tower Station, lat. 24° 39', long. 91° 46'—observed at in 1862—is at the southern extremity of the village so called and about 3 miles E.N.E. of the large village of Bráhmangaon on the Bibisona river; thána Tezpur, pargana Muktárpur, district Sylhet.

The station consists of a perforated pillar 21 feet high, 9¾ feet square at base and 3½ feet in diameter at top, surrounded by a wooden platform 14 feet square. It has a mark-stone at the surface of the foundation and another 2½ feet above it in the floor of the passage. The directions and estimated distances of the circumjacent villages are:—Bahádurpur bazar S.S.W., miles 3½; Shádipur W., miles 2½; Aurangpur hát N.W., miles 1½; Rámkishanpur N., mile ¼.

XXIII. Kulerai or Tobatianga Tíla Hill Station, lat. 24° 39', long. 92° 17'—observed at in 1862—is on one of the most elevated among a group of low hills in a very wild and uninhabited tract of country, 4 miles E.S.E. of Ubaganj hát; thána Hingájiya, pargana Pátháriya, district Sylhet.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 2 feet high and has a mark-stone at the surface and another in the foundation. The directions and estimated distances of the circumjacent places are:—Gaurinagar, a very large village, W. by S., miles 2; Kulabnagar N.W. by N., miles 2½; Bonagi bazar on the Lungu stream E. by S., miles 4½.

XXIV. Lauraga Tíla Hill Station, lat. 24° 26', long. 91° 49'—observed at in 1862 and 1863—is on the north-west of a range of tílas (hills); mauza Gamra, thána Nawakháli, pargana Chowalis, district Sylhet.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 2 feet high and has a mark-stone at the surface and another in the foundation. The directions and estimated distances of the circumjacent villages are:—Matakaffan N.E., miles 2; Nitasar and Jaganuátlpur, on the S.W. face of the hill, mile 1; Gamra W., mile 1.

XXV. Harargaj or Murti Larpur Hill Station, lat. $24^{\circ} 25'$, long. $92^{\circ} 7'$ —observed at in 1862 and 1863—is on the frontier between Independent Tipperah and British Territory and about 12 miles S.E. of Hingájiya thána; thána Hingájiyá, pargana Kaniháti, district Sylhet.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 2 feet high and has a mark-stone at the surface and another in the foundation. The directions and estimated distances of the adjacent villages are:—Nonágam on one of the low ridges W., miles 2; Nalbári W., miles 8.

XXVI. Mama Bhagna Tila Tower Station, lat. $24^{\circ} 51'$, long. $92^{\circ} 12'$ —observed at in 1862—is on the southern of two low hills termed Fakír Tilas, about $\frac{1}{2}$ a mile S. of the junction of the Mara Kusiýára stream with the Puran Kusiýára river and the same distance S.E. of Bairági bazar on the latter; thána Látu, pargana Pan-chakhand, district Sylhet.

The station consists of a perforated circular pillar 12 feet high, 7 feet in diameter at base and $3\frac{1}{2}$ feet at top, surrounded by a wooden platform 14 feet square. No information is forthcoming as to the mark-stones imbedded, but it is presumed that one or more must have been inserted in a manner similar to that at station XXII. The directions and estimated distances of the circumjacent villages are:—Churreah N.E., miles $4\frac{1}{2}$; Khasa S., mile 1; Ghorua N.W., miles $1\frac{1}{2}$.

XXVII. Dupi or Gopál Tila Hill Station, lat. $25^{\circ} 6'$, long. $92^{\circ} 11'$ —observed at in 1861—is on a low range of hills, about $2\frac{3}{4}$ miles S. by E. of the town of Jaintiápur; thána and pargana Jaintiápur, district Sylhet. The hill derives its name from Rámeswar Mat, a temple, built on the eastern extremity of the range and distant about 1 mile from the station.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 2 feet high and has a mark-stone at the surface, another in the foundation and a third midway between the two. The directions and estimated distances of the circumjacent villages are:—Paunchauti on the Line stream W. by S., miles $2\frac{1}{2}$; Kamrangikáli N.E., miles $1\frac{3}{4}$; Barugati S.S.W., miles 2; Ráni S.W., miles $2\frac{1}{2}$; Dupi W. by S., mile 1.

XXVIII. Dali Tila Hill Station, lat. $24^{\circ} 51'$, long. $92^{\circ} 24'$ —observed at in 1862—is on a low isolated hill and about $\frac{2}{3}$ of a mile S.S.W. of the junction of the Notia stream with the Boglia river; thána Látu, pargana Kusiýára Kal, district Sylhet.

The pillar, which is surrounded by a paka brick platform 14 feet square, is solid, 3.33 feet high and contains 3 mark-stones, of which the second and third are 1.00 and 3.33 feet respectively above the one in the foundation. The directions and estimated distances of the circumjacent places are:—Gotur bazar S.S.W., miles 2; Sundarganj hát W., miles $2\frac{1}{2}$; Karimganj hát N. by E., mile $\frac{1}{2}$; Buíar hát N., miles $2\frac{1}{2}$.

XXIX. Merpa Tila Hill Station, lat. $25^{\circ} 2'$, long. $92^{\circ} 23'$ —observed at in 1861—is on one of the low hills in the Molágul valley and about 2 miles south of Bartaguna on the Luka or Luba river; thána and pargana Molágul, district Sylhet. The river Surma flows south at $1\frac{1}{2}$ miles distance from the station.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 2 feet high and has a mark-stone at the surface and another in the foundation. The directions and estimated distances of the circumjacent villages are:—Molágul bazar N.N.W., miles 2; Bhalukmára N., miles $1\frac{1}{2}$; Sonakhel N.E. by E. mile 1; and a thána (police station) on Jhurijarah hill W., miles 2.

XXX. Hiara or Hiára Hill Station, lat. $24^{\circ} 16'$, long. $91^{\circ} 59'$ —observed at in 1863—is on the eastern of two contiguous peaks called Hiára-Piára and nearly half a mile E. of Piára; thána and sub-division Kailás Sahar, territory of the Rája of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 3 feet high and has a mark-stone at the surface and another at the ground level. The azimuths and distances of the present sites (1863) of the circumjacent villages are:—Rangbang-rájabári $192^{\circ} 16'$, miles 1.878; Dalinpuibári $281^{\circ} 26'$, miles 2.707; Kuparbári $134^{\circ} 45'$, miles 2.64.

XXXI. Komuntah or Khamnáta Hill Station, lat. $24^{\circ} 8'$, long. $92^{\circ} 8'$ —observed at in 1863—is on a great range which extends with a few breaks a distance of about 40 miles; thána and sub-division Kailás Sahar, territory of the Rája of Hill Tipperah. The Deogang river crosses the range about 3 miles N. of the station.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 3 feet high and has a mark-stone at the surface, another at the ground level and a third midway between the two. The village of Jankuibári is N.W., about 12 miles.

XXXII. Churamani Hill Station, lat. $24^{\circ} 15'$, long. $91^{\circ} 47'$ —observed at in 1863—is on the western border of the hill country of Tipperah, overlooking an extensive valley to the west; thána Nawakháli, pargana Balishera, district Sylhet.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 5 feet high and has a mark-stone at the surface, another at the ground level and a third midway between the two. The azimuths and distances of the circumjacent places in the populated valley are:—Sibalbári $124^{\circ} 17'$, miles 3.335; Jilarpur temple $123^{\circ} 9'$, miles 3.328; Gházipur temple $92^{\circ} 2'$, miles 5.897.

XXXIII. Batchia or Báchia Hill Station, lat. 24° 5', long. 91° 57'—observed at in 1863—is on a great range about 56 miles in length; thána Kamalpur, sub-division Kailás Sahar, territory of the Rájá of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 2·5 feet high and has a mark-stone at the surface, another at the ground level and a third midway between the two. The directions and estimated distances of the adjacent villages are:—Khajálábári N., miles 12; Dholábári (near the source of the Dholái river) N.W., miles 7.

XXXIV. Sabaisara or Chhábaichara Hill Station, lat. 24° 9', long. 91° 39'—observed at in 1863—is about a mile within the western border of a block of hills; thána Kamalpur, sub-division Kailás Sahar, territory of the Rájá of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 5·5 feet high and has a mark-stone at the surface, another at the ground level and a third midway between the two. The directions and estimated distances of the adjacent villages are:—Latiabári, in a small gorge, N.N.W., miles 2; Haribári S., mile 1.

XXXV. Atamura or Athámura Hill Station, lat. 24° 0', long. 91° 48'—observed at in 1863—is in lands of the village of the same name, on a great range of hills about 43 miles in length; thána Kamalpur, sub-division Kailás Sahar, territory of the Rájá of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 2 feet high and has a mark-stone at the surface, another at the ground level and a third midway between the two. The directions and estimated distances of the following villages are:—Jitraibári N.W. by W., miles 8; Donaliabári N.W., miles 6; Sálíkábári W., miles 8.

XXXVI. Bormura or Gunmura Hill Station, lat. 23° 58', long. 91° 34'—observed at in 1863—is on a great range running N.N.W. and S.S.E.; thána and sub-division Agartala, territory of the Rájá of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 5·5 feet high and has a mark-stone at the surface, another at the ground level and a third midway between the two. The directions and estimated distances of the following villages are:—Mangalpur W.N.W., miles 11; Mantola hát N.W., miles 13.

XXXVII. Champamura or Chámpamura Hill Station, lat. 24° 5', long. 91° 31'—observed at in 1863—is on a great range running N.N.W. and S.S.E.; thána and sub-division Agartala, territory of the Rájá of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 4·5 feet high and has a mark-stone at the surface, another at the ground level and a third midway between the two. The directions and estimated distances of the circumjacent villages are:—Bejura W.N.W., miles 10; Mantola hát W. by S., miles 8½; Mangalpur S.W., miles 9.

XXXVIII. Lambusara or Lembhumura Hill Station, lat. 23° 54', long. 91° 22'—observed at in 1863 and 1864—is about 2 miles N. of Durga Chaudhari's pára (section of village); thána and sub-division Agartala, territory of the Rájá of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 4·75 feet high and has a mark-stone at the surface, another at the ground level and a third midway between the two. The directions and estimated distances of the circumjacent villages are:—Mangalpur N. by E., miles 8; Brahmanbári W. by N., miles 14; Sundarban S.W., miles 5; Noagang W.S.W., miles 5; and a Revenue Survey staff is 93·51 feet at an azimuth of 34° 56'.

XXXIX. Saisum or Chháichhum Hill Station, lat. 23° 50', long. 91° 36'—observed at in 1863 and 1864—is on a great range and about 8 miles S. of Dárhulabári village; thána and sub-division Agartala, territory of the Rájá of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 6 feet high and has a mark-stone at the surface, another at the ground level and a third midway between the two. The directions and estimated distances of the circumjacent villages are:—Hawábári W.S.W., miles 2½; Kupni-Raktiabári W., miles 4; Basirám S.S.W., miles 9; and a Revenue Survey staff is 43·79 feet at an azimuth of 278° 49'.

XL. Dawa or Daniamura Hill Station, lat. 23° 45', long. 91° 23'—observed at in 1863 and 1864—is on an extensive table-land; thána Bisalgarh, sub-division Agartala, territory of the Rájá of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 7·75 feet high and contains four mark-stones, one at the surface, another flush with the ground level and two intermediately, 3 and 6 feet respectively above the ground level mark. The directions and estimated distances of the circumjacent villages are:—Madhabpur W.N.W., miles 7; Nagarpára W.S.W., miles 5; Chandarnagar S.S.W., miles 6; Basirám E., miles 8.

XLI. Barjatua or Kctániamura Hill Station, lat. 23° 45', long. 91° 14'—observed at in 1863—is on

the western border of the territory of the Rája of Hill Tipperah and about 4 miles E. of the road from Commillah to Kasba; thána Bisalgarh, sub-division Agartala.

The pillar, which is surrounded by a wooden platform 16 feet square, is solid, 4.5 feet high and has a mark-stone at the surface, another at the ground level and a third midway between the two. The directions and estimated distances of the circumjacent villages are:—Agartala N.N.E., miles 8; Nagarpára E., miles 4½; Kumalpur (on road from Commillah) S.W., miles 5; Kasba W., miles 3.

XLII. Jamu or Jámmura Hill Station, lat. 23° 40', long. 91° 32'—observed at in 1864—is on a low spur running about N. and S.; thána Bisalgarh, sub-division Agartala, territory of the Rája of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 16 feet square, is solid, 6.5 feet high and has a mark-stone at the surface, another in the foundation and two intermediately, 2 and 4 feet respectively above the mark in the foundation. The directions and estimated distances of the circumjacent places are:—Agartala N.W., miles 18; Bisalgarh W., miles 13; Udepur S.W., miles 12; Basirám N. by W., miles 6.

XLIII. Rokhia or Okhiamura Hill Station, lat. 23° 36', long. 91° 17'—observed at in 1864—is in lands of the village Okhiamura and about 6 miles E. of the road from Commillah to Kasba; thána Baksanagar, sub-division Udepur, territory of the Rája of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 16 feet square, is solid, 6 feet high and has a mark-stone at the surface, another in the foundation and two intermediate ones 2 feet apart. The directions and estimated distances of the circumjacent villages are:—Baksanagar N.W., miles 4; Káipengpára S., miles 2; Náráyanpur N.W., miles 6; Singnagar N., miles 4.

XLIV. Neng or Lembhumura Hill Station, lat. 23° 35', long. 91° 25'—observed at in 1864—is on the northern bank of the Kásiganj river and 2½ miles N. of Udepur village; thána Sonámura, sub-division Udepur, territory of the Rája of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 3.88 feet high and has a mark-stone at the surface, another at the level of the top of the hill and a third 2 feet above the latter. The bearings and the estimated distances of the circumjacent villages are:—Rámsurapára W.N.W., miles 7; Káipengpára W. by S., miles 8; Kobimuhámad N.W., miles 5.

XLV. Eta or Itamura Hill Station, lat. 23° 26', long. 91° 23'—observed at in 1864—is about 10 miles E.S.E. of the town of Commillah and 8 miles E. of the high road from Commillah to Chittagong; thána Sonámura, sub-division Udepur, territory of the Rája of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 16 feet square, is solid, 4 feet high and has a mark-stone at the surface, another in the foundation and a third 2 feet above the latter. The directions and estimated distances of the circumjacent villages are:—Toikhilábári (on the Gumti river) N., miles 5; Saudágarpára S.E. by S., miles 4; Dhanmura S. by E., miles 2.

XLVI. Hathimura or Hátimura Hill Station, lat. 23° 29', long. 91° 36'—observed at in 1864—is on a low hill; thána and sub-division Udepur, territory of the Rája of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 4.95 feet high and has a mark-stone at the surface of the hill, another 2.98 feet above it and the third at the surface of the pillar. The directions and estimated distances of the circumjacent villages are:—Chápiakhán N., miles 1½; Golmebári S., miles 2; and Udepur city W., miles 4½.

XLVII. Sogaria or Chhagharia Hill Station, lat. 23° 18', long. 91° 33'—observed at in 1864 and 1867—is on the highest swell of a group of low hills under which flows a little stream practicable for rafts and small canoes during the rains; thána Bilania, sub-division Udepur, territory of the Rája of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 16 feet square, is solid, 3 feet high and has a mark-stone at the surface, another in the foundation and a third midway between the two. The directions and estimated distances of the circumjacent villages are:—Rongrumbári N.E., miles 3; Tankirámbari S., miles 1½; Padosing-Nawatiabári W., miles 3. When visited in 1867 for closing the East Calcutta Longitudinal Series no alteration in the construction of the pillar appears to have been made.

XLVIII. Sáhebmura or Tui-ka-Barmah Hill Station, lat. 23° 22', long. 91° 41'—observed at in 1864—is on one of the high and extensive spurs S. of the Gumti river; thána and sub-division Udepur, territory of the Rája of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 16 feet square, is solid, 7.5 feet high and has a mark-stone at the surface, another in the foundation and two intermediate ones, 2 and 4 feet respectively above the latter. The directions and estimated distances of the circumjacent villages are:—Kudrumbári W., miles 2; Aisingbári S.W., miles 3; Bhagirathbári N.W., miles 8.

XLIX. Gojalia or Gojáliamura Hill Station, lat. 23° 9', long. 91° 36'—observed at in 1864 and 1867—is on the highest swell of a group of hills, about 4 miles inland of the western border of the territory; thána Bilania, sub-division Udepur, territory of the Rája of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 18 feet square, is solid, 9 feet high and has a mark-stone at the surface, another in the foundation and two others intermediately, 4 and 7 feet respectively above the latter. The directions and estimated distances of the circumjacent villages are :—Aliabári N.N.W., miles 2; Khankrulbári E.S.E., miles 4; Báni Chaudhari's old bári W., miles 2. When visited in 1867 for closing the East Calcutta Longitudinal Series no alteration was made in the construction of the pillar.

L. Tulamura Hill Station, lat. 23° 12', long. 91° 48'—observed at in 1864—is on one of the highest points of a great range on the eastern border of the immense block of hills which command an extensive view of the Fenny and the country E. and W. of this river; thána Bilania, sub-division Udepur, territory of the Rája of Hill Tipperah.

The pillar, which is surrounded by a wooden platform 16 feet square, is solid, 4·5 feet high and has a mark-stone at the surface, another in the foundation and a third 3 feet above the latter.

CACHAR BRANCH SERIES.

LI. Murphuta Tíla Hill Station, lat. 24° 49', long. 92° 36'—observed at in 1862—is situated on the low range of hills which separates the Háilákúndi valley from the Chatalabíl valley, about 4 miles S. by W. of the bazar and fort of Badarpur on the Barák river; tahsíl and thána Háilákúndi, pargana Sarishpur, district Cachar.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 2·33 feet high and has a mark-stone at the surface and another in the foundation. The directions and estimated distances of the circumjacent villages are :—Dhálidar N.E., miles 2; Chandipur S.E., miles 3½; Joinapur hát N.W., miles 3½; Halguria and Sunárbári W., miles 2½.

LII. Hajuma Hill Station, lat. 25° 2', long. 92° 38'—observed at in 1861—is on the southern of two of the most elevated spurs, about 6 miles N.E. of Kalani bazar, from which it is approached by a very circuitous road along watercourses and over low hills; tahsíl and thána Kátigára, district Cachar.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 2½ feet high and has a mark-stone at the surface and another in the foundation. The directions and estimated distances of the circumjacent villages are :—Pokwasora S.E., miles 2; Bolsora S.W., miles 2; Sungduar on the Larang river S., miles 2.

LIII. Salama Tíla Hill Station, lat. 24° 51', long. 92° 51'—observed at in 1861-62—is on a low isolated hill on the north or right bank of the Barák river and 2 miles N. of the station of Silchar; tahsíl and thána Sadar, pargana Barakpur, district Cachar.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 2 feet high and has a mark-stone at the surface and another below. The directions and estimated distances of the circumjacent villages are :—Dudpatli N.W., miles 1½; Bahádurpur E., miles 1½; Partaipára S.E., mile ½; Terapur hát W., miles 2½.

LIV. Nemotha or Nemotha Tíla Hill Station, lat. 25° 1', long. 92° 52'—observed at 1862—is on the highest part of an elevated range which extends for several miles in a nearly east and west direction and about 3 miles E. by S. of Daulaigam village on the Jatinga river; tahsíl Kátigára, thána Sadar, pargana Barkala, district Cachar.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 2·00 feet high and has a mark-stone at the surface and another in the foundation. The directions and estimated distances of the circumjacent villages are :—Shungbem S.S.W., miles 2½; Dumchara W. by S., miles 4; Phileug N.N.E., miles 2½.

LV. Ramphan Hill Station, lat. 24° 48', long. 93° 6'—observed at in 1862—is on a long range running S.W. and N.E., and about ½ of a mile N. of the high road from Silchar to Manipur which passes over the hill; tahsíl and thána Lakhipur, pargana Daiáng, district Cachar.

The pillar, which is surrounded by a stone platform 14 feet square, is solid, 3½ feet high and has two mark-stones, one flush with the surface of the hill and the other 2 feet above it. The directions and estimated distances of the circumjacent villages are :—Lubak bazar on the Chiri stream N.W., miles 2½; Lakhipur W. by S., miles 4; Noagram (on the high road) W.S.W., miles 2½.

LVI. Tukbai Hill Station, lat. 25° 1', long. 93° 9'—observed at in 1862—is situated on a high hill of the first or southern range in northern Cachar and about 7 miles S.W. of the Baladhan outpost; the country in the neighbourhood is very wild and sparsely inhabited; tahsíl and thána Lakhipur, district Cachar.

The pillar, which is surrounded by a wooden platform 14 feet square, is solid, 2 feet high and has a mark-stone at the surface and another 2 feet below. The directions and estimated distances of the circumjacent villages are :—Maulang on the Jinam stream E.S.E., miles 5½; Numiugban S.W., mile ½; Pomkhái S.E. by E., miles 2½; Mantrirami or Deoband S. by W., miles 3½.

EASTERN FRONTIER SERIES—SECTION 23° to 26°.

PRINCIPAL TRIANGULATION. ADDENDUM TO DESCRIPTION OF STATIONS.

NOTE.—Consequent on modern alterations of district and other boundaries, the sites occupied by the stations are in some instances now included in civil divisions of territory which differ from the district, pargana, or village, recorded in the preceding descriptions of stations: a complete list of all the stations of the Series including a suitably modified statement of the altered subdivisions in question is accordingly given in the following table, and is derived chiefly from the annual reports, up to 1882, made by the Civil Officials to whose care the stations have been committed. The statement also gives present condition of certain of the stations; where no entry regarding present condition is made against a station it is to be assumed that the station when last reported on by the district Official was in good order.

The spelling of names is in accordance with that given in the lists of more important places published under the orders of Government whenever such names occur in the lists.

No. of Station	Local name	District	Pargana, &c.	Village in which the Station lies	Remarks on the Condition of the Station
XLII	Chagalchari	Kámrúp	Thá. Chhaygaon	Harogaon	... ..
XLIV	Tepkilabama	Khási and Jaintia Hills	Thá. Shillong, Táluka Nongopang	Tepkilabama	... ..
I	Makerson	"	Thá. Shillong, Táluka Nongkhlaú	Makerson	... ..
II	Mopon	"	Thá. Shillong, Táluka Nongopang	Mopon	... ..
III	Umlor	"	Thá. Shillong, Táluka Nongkhlaú and Jírang	Umlor	... ..
IV	Landau Modo	"	Thá. Shillong, Táluka Rámbrái	Landau Modo	... ..
V	Maukára	"	Thá. Shillong, Táluka Nongkhlaú and Jírang	Maukára	... ..
VI	Dinghei	"	Ditto.	Dinghei	... ..

NOTE.—Stations XLII and XLIV appertain to the Assam Longitudinal Series. Thá. stands for thána.

No. of Station	Local name	District	Pargana, &c.	Village in which the Station lies	Remarks on the Condition of the Station
VII	Mautherichan	Khási and Jaintia Hills	Thá. Shillong, Táluka Mariau	Mariau	... ..
VIII	Mokneang	"	Thá. Shillong, Táluka Rámbrái	Mokneang	... ..
IX	Taulangwár	"	Thá. Cherra Poonjee, Táluka Maháram	Taulangwár	... ..
X	Mun	"	Thá. Cherra Poonjee, Táluka Laitlingkot	Kaisummaurah Punji	... ..
XI	Lardarang	"	Thá. and Táluka Cherra Poonjee	Cherra Poonjee	... ..
XII	Mopen	"	Thá. Cherra Poonjee, Táluka Bhawal	Kentur Suiáng	... ..
XIII	Thanjináth	"	Thá. Shillong, Táluka Khairim	Thanjináth	... ..
XIV	Taramun	Sylhet	P. and Thá. Chhátak	Rájnagar	... ..
XV	Khandigaon	"	P. Piyáin, Thá. Goyáinghát	Khandigaon	... ..
XVI	Abhanghi	"	P. Uttarkach, Thá. Sylhet	Angaruali	... ..
XVII	Nágra Kálápur	"	P. Chatianagar, Thá. Chhátak	Rádhánagar	... ..
XVIII	Baishtam Tíla	"	P. Araika, Thá. Goyáinghát	Pachbag	... ..
XIX	Hartaki	"	P. Chaukair, Thá. Sylhet	Kuzkalu	... ..
XX	Kailásh Tíla	"	P. Dhákádakshin, Thá. Golábganj	Naliauri	... ..
XXI	Káli Pakibar	"	P. Indanagar, Thá. Rájnagar	Káli Pakibar	... ..
XXII	Jiapur	"	P. Mukhtiárpur, Thá. Báláganj	Jiapur	... ..
XXIII	Tabathanga Tíla	"	P. Pátháriya, Thá. Hingájiya	Gaurnagar	... ..
XXIV	Lauraga Tíla	"	P. Chowalish, Thá. Nawakháli	Gumra	... ..
XXV	Murti Larpur	"	P. Kaniháti, Thá. Hingájiya	Chandpur	... ..
XXVI	Mama Bhagna Tíla	"	P. Panchakhand, Thá. Jaldúp	Kashir	... ..
XXVII	Gopál Tíla	"	P. and Thá. Jaintiápur	Tenakhel	... ..

No. of Station	Local name	District	Pargana, &c.	Village in which the Station lies	Remarks on the Condition of the Station
XXVIII	Dali Tíla	Sylhet	P. Kushvarkod, Thá. Karínganj	Banmali	... ..
XXIX	Marpa	"	P. Molágul, Thá. Kanairghát	Barapára	... ..
XXX	Híára	Hill Tipperah	Thá. Kailásh Shabar	Híára	... ..
XXXI	Khamnáta	"	Thá. Kailásh Shabar	Khamnáta	... ..
XXXII	Churámáni	Sylhet	P. Bálisera, Thá. Nawakháli	Bálisera Hill	... ..
XXXIII	Báchia	Hill Tipperah	Thá. Kamálpur	Báchia	... ..
XXXIV	Sabaisara	"	Ditto.	Sabaisararpár	... ..
XXXV	Atarmura	"	Ditto.	Atarmura	... ..
XXXVI	Gunmura	"	Thá. Agartala	Gunmura	" Broken off at the top about 1½ feet" as reported in 1878.
XXXVII	Champamura	"	Ditto.	Champamura	" Broken off at the top about 2 feet" as reported in 1878.
XXXVIII	Lambumura	"	Ditto.	Lambumura	" Broken off at the top about 1 foot" as reported in 1878.
XXXIX	Saisum	"	Ditto.	Saisummura	... ..
XL	Dawarmura	"	Thá. Bisalgarh	Dawarmura	" Broken off at the top about 1 foot" as reported in 1878.
XLI	Ketániamura	"	Ditto.	Ketániamura	... ..
XLII	Jámura	"	Ditto.	Kalaibári	Pillar in ruins as reported in 1878.
XLIII	Okhiamura	"	Thá. Baksanagar	...	Ditto.
XLIV	Lembhumura	"	Thá. Sonamura	...	Ditto.
XLV	Itamura	"	Ditto.	Murasingh Daffurbári	Ditto.
XLVI	Hátimura	"	Thá. Udepur	Hátimura	Ditto.
XLVII	Sogariamura	"	Thá. Bilinia	Sogariamura	Ditto.
XLVIII	Champamura or Sáhebmura	"	Thá. Udepur	Champamura or Sáhebmura	... ..
XLIX	Gazariamura	"	Thá. Bilinia	Gazariamura	Pillar in ruins as reported in 1878.
L	Tulamura	"	Ditto.	Tulamura	Ditto.

NOTE.—P. stands for pargana, Thá. for thána, and Tah. for tahsil.

CACHAR BRANCH SERIES.

No. of Station	Local name	District	Pargana, &c.	Village in which the Station lies	Remarks on the Condition of the Station
LI	Durbín Tíla	Cachar	P. Sarishpur, Thá. and Tab. Háilákáandi	Akhalia	... ..
LII	Gumbaj	„	P. Ichchbámati, Thá. and Tab. Kátigára	Natwanpur	... ..
LIII	Salama Tíla	„	P. Barakpur, Thá. Silchar, Tab. Sadar	Dudpatli	... ..
LIV	Nemotha Tíla	„	P. Barkala, Thá. and Tab. Sadar	Nemotha Tíla Barkala	... ..
LV	...	„	P. Daióng, Thá. and Tab. Lakhipur	Bala Dhan	... ..
LVI	Mahádeo Tíla	„	Hángnum, North Cachar Hills	Mahádeo Tíla	... ..

NOTE.—P. stands for pargana, Thá. for thána, and Tab. for tahsíl.

December, 1882.

J. B. N. HENNESSEY,
In charge of Computing Office.

EASTERN FRONTIER SERIES—SECTION 23° to 26°.

PRINCIPAL TRIANGULATION. TRIANGLES.

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle	Distance		
				Log. feet	Feet	Miles
1	Harogaon, XLII	'17	° ' "	4'7159329	51991'6	9'847
	Tepkilabama, XLIV	'17	65 11 53'14	4'6908426	49073'0	9'294
	Mokerson, I	'16	55 50 31'47	4'6757245	47394'1	8'976
2	Tepkilabama, XLIV	'24	61 11 53'68	4'7918202	61918'5	11'727
	Mokerson, I	'24	71 25 35'95	4'8259415	66979'4	12'686
	Umter, III	'24	47 22 30'37	4'7159329	51991'6	9'847
3	Mokerson, I	'17	45 14 31'80	4'6488352	44548'7	8'437
	Umter, III	'18	54 1 19'83	4'7056021	50769'4	9'615
	Maupáni, V	'18	80 44 8'37	4'7918202	61918'5	11'727
4	Umter, III	'26	82 15 48'41	4'9142950	82090'9	15'548
	Maupáni, V	'26	65 12 24'02	4'8762699	75209'0	14'244
	Dinghei, VI	'26	32 31 46'67	4'6488352	44548'7	8'437
5	Maupáni, V	'34	42 1 12'04	4'7602044	57583'0	10'906
	Dinghei, VI	'34	65 22 14'40	4'8931899	78197'0	14'810
	Laidera, VIII	'34	72 36 33'56	4'9142950	82090'9	15'548

NOTES.—1. The values of the sides are given in the same line with the opposite angle.

2. Stations Harogaon, XLII, and Tepkilabama, XLIV appertain to the Assam Longitudinal Series.

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle	Distance		
				Log. feet	Feet	Miles
6	Dinghei, VI	"	° ' "			
	Laidera, VIII	'27	56 47 1'49	4'7993937	63007'7	11'933
	Mun, X	'28	73 20 47'62	4'8582620	72154'3	13'666
7	Laidera, VIII	'27	49 52 10'89	4'7602944	57583'0	10'906
	Mun, X	'32	83 35 54'21	4'9288727	84893'2	16'078
	Mosingi, IX	'32	48 52 35'70	4'8085539	64350'8	12'188
8	Mosingi, IX	'31	47 31 30'09	4'7993937	63007'7	11'933
	Harogaon, XLII	'17	51 6 30'31	4'6738203	47186'8	8'937
	Mokerson, I	'18	74 50 58'23	4'7672900	58518'1	11'083
9	Mopon, II	'18	54 2 31'46	4'6908426	49073'0	9'294
	Mokerson, I	'18	52 25 31'96	4'6849801	48415'0	9'170
	Mopon, II	'18	76 59 58'52	4'7746702	59521'0	11'273
10	Landau Modo, IV	'17	50 34 29'52	4'6738203	47186'8	8'937
	Mokerson, I	'21	60 12 49'45	4'7469368	55838'9	10'576
	Landau Modo, IV	'20	52 6 2'40	4'7056021	50769'4	9'615
11	Maupáni, V	'21	67 41 8'15	4'7746702	59521'0	11'273
	Landau Modo, IV	'22	81 28 58'80	4'8430439	60660'7	13'195
	Maupáni, V	'22	46 5 2'23	4'7054077	50746'7	9'611
12	Mautherrichan, VII	'22	52 25 58'97	4'7469368	55838'9	10'576
	Maupáni, V	'37	58 16 2'71	4'8595772	72373'1	13'707
	Mautherrichan, VII	'37	66 46 24'53	4'8931899	78197'0	14'810
13	Laidera, VIII	'36	54 57 32'76	4'8430439	60660'7	13'195
	Mautherrichan, VII	'35	47 55 20'08	4'8085539	64350'8	12'188
	Laidera, VIII	'36	75 29 10'19	4'9239264	83931'8	15'896
14	Mosingi, IX	'36	56 35 29'73	4'8595772	72373'1	13'707
	Mun, X	'29	53 1 35'01	4'8318233	67892'7	12'858
	Rangsanobo, XI	'29	39 35 7'35	4'7336184	54152'5	10'256
15	Rangsanobo, XI	'29	87 23 17'64	4'9288727	84893'2	16'078
	Mun, X	'22	59 59 38'12	4'7811899	60421'3	11'443
	Rangsanobo, XI	'22	43 20 12'69	4'6801912	47884'1	9'069
16	Thanjínáth, XIII	'23	76 40 9'19	4'8318233	67892'7	12'858
	Rangsanobo, XI	'35	63 54 58'93	4'8918914	77963'5	14'766
	Thanjínáth, XIII	'36	71 58 17'75	4'9166773	82542'4	15'633
17	Khandigaon, XV	'35	44 6 43'32	4'7811899	60421'3	11'443
	Rangsanobo, XI	'42	55 2 14'44	4'8736562	74757'7	14'159
	Khandigaon, XV	'42	60 9 27'29	4'8983117	79124'6	14'986
18	Taramun Tila, XIV	'43	64 48 18'27	4'9166773	82542'4	15'633
	Mosingi, IX	'27	104 56 40'53	4'9777836	95013'1	17'995
	Rangsanobo, XI	'27	41 38 32'87	4'8152096	65344'6	12'376
19	Mopen, XII	'27	33 24 46'60	4'7336184	54152'5	10'256
	Rangsanobo, XI	'56	68 40 41'32	4'9960800	99101'5	18'769
	Mopen, XII	'55	48 3 13'00	4'8983117	79124'6	14'986
20	Taramun Tila, XIV	'55	63 16 5'68	4'9777836	95013'1	17'995
	Taramun Tila, XIV	'19	39 33 14'04	4'7111319	51420'0	9'739
	Khandigaon, XV	'29	72 39 9'60	4'8869089	77074'2	14'597
20	Abangi Tila, XVI	'29	67 47 36'36	4'8736562	74757'7	14'159

NOTE.—Station Harogaon, XLII appertains to the Assam Longitudinal Series.

PRINCIPAL TRIANGULATION. TRIANGLES.

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle			Distance		
						Log. feet	Feet	Miles
21	Khandigaon, XV	17	49	23	33'91	4'6515017	44823'1	8'489
	Abangi Tila, XVI	17	70	2	27'86	4'7442507	55494'6	10'510
	Bar Utni Tila, XVIII	17	60	33	58'23	4'7111319	51420'0	9'739
22	Abangi Tila, XVI	22	55	27	3'56	4'8024460	63452'1	12'017
	Bar Utni Tila, XVIII	23	88	58	11'52	4'8866376	77026'1	14'588
	Kailās Tila, XX	22	35	34	44'92	4'6515017	44823'1	8'489
23	Abangi Tila, XVI	25	63	47	15'06	4'8450527	69992'7	13'256
	Kailās Tila, XX	24	35	20	52'97	4'6545165	45135'3	8'548
	Orthoki Tila, XIX	25	80	51	51'97	4'8866376	77026'1	14'588
24	Orthoki Tila, XIX	29	49	48	47'48	4'7698888	58869'3	11'149
	Kailās Tila, XX	29	64	54	58'91	4'8438065	69792'1	13'218
	Pakibar Tila, XXI	30	65	16	13'61	4'8450527	69992'7	13'256
25	Kailās Tila, XX	40	86	37	11'74	5'0004184	100096'4	18'958
	Pakibar Tila, XXI	39	57	25	42'16	4'9268574	84500'1	16'004
	Kulerai Tila, XXIII	39	35	57	6'10	4'7698888	58869'3	11'149
26	Pakibar Tila, XXI	71	60	49	17'74	5'0133839	103129'7	19'532
	Kulerai Tila, XXIII	72	61	14	44'48	5'0151633	103553'2	19'012
	Harugaj, XXV	71	57	55	57'78	5'0004184	100096'4	18'958
27	Pakibar Tila, XXI	68	61	33	55'72	5'0061549	101427'3	19'210
	Harugaj, XXV	67	54	33	54'41	4'9730250	93977'7	17'799
	Lauraga Tila, XXIV	68	63	52	9'87	5'0151633	103553'2	19'612
28	Taramun Tila, XIV	25	56	27	15'10	4'8101209	64583'4	12'232
	Abangi Tila, XVI	25	39	28	57'04	4'6925941	49271'3	9'332
	Bisemberpur, XVII	25	84	3	47'86	4'8869089	77074'2	14'597
29	Abangi Tila, XVI	21	63	26	38'73	4'7782595	60015'0	11'366
	Bisemberpur, XVII	20	42	16	39'39	4'6545165	45135'3	8'548
	Orthoki Tila, XIX	21	74	16	41'88	4'8101209	64583'4	12'232
30	Orthoki Tila, XIX	33	56	59	16'99	4'8282033	67329'2	12'752
	Pakibar Tila, XXI	33	62	38	32'70	4'8531599	71311'6	13'506
	Geahpur, XXII	33	60	22	10'31	4'8438065	69792'1	13'218
31	Pakibar Tila, XXI	39	52	16	15'27	4'8749123	74974'3	14'200
	Geahpur, XXII	40	82	28	21'75	4'9730250	93977'7	17'799
	Lauraga Tila, XXIV	39	45	15	22'98	4'8282033	67329'2	12'752
32	Bar Utni Tila, XVIII	23	41	53	31'66	4'6855671	48480'5	9'182
	Kailās Tila, XX	24	77	11	18'57	4'8500173	70797'4	13'409
	Mama Bhagna Tila, XXVI	24	60	55	9'77	4'8024460	63452'1	12'017
33	Kailās Tila, XX	28	60	20	51'22	4'8676852	73737'0	13'965
	Mama Bhagna Tila, XXVI	28	84	48	22'07	4'9268574	84500'1	16'004
	Kulerai Tila, XXIII	28	54	50	46'71	4'6855671	48480'5	9'182
34	Bar Utni Tila, XVIII	37	81	20	3'14	4'9543384	90019'9	17'049
	Mama Bhagna Tila, XXVI	37	47	38	5'46	4'8278902	67280'7	12'743
	Dupi Tila, XXVII	37	51	1	51'40	4'8500173	70797'4	13'409
35	Mama Bhagna Tila, XXVI	46	47	48	48'74	4'8604380	72516'7	13'734
	Dupi Tila, XXVII	47	65	17	18'43	4'9489299	88005'8	16'838
	Merpa Tila, XXIX	47	66	53	52'83	4'9543384	90019'9	17'049

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle				Distance		
							Log. feet	Feet	Miles
36	Mama Bhagna Tila, XXVI	'32	44	49	42'04	4'7975312	62738'1	11'882	
	Merpa Tila, XXIX	'33	47	41	42'66	4'8183332	65816'3	12'465	
	Dali Tila, XXVIII	'33	87	28	35'30	4'9489299	88905'8	16'838	
37	Mama Bhagna Tila, XXVI	'37	73	59	49'88	4'9254173	84220'4	15'951	
	Dali Tila, XXVIII	'37	57	18	32'41	4'8676852	73737'0	13'965	
	Kulerai Tila, XXIII	'36	48	41	37'71	4'8183332	65816'3	12'465	
38	Lauraga Tila, XXIV	'45	42	35	22'27	4'8400819	69196'2	13'105	
	Harargaj, XXV	'45	54	40	45'26	4'9213111	83427'9	15'801	
	Hiara, XXX	'45	82	43	52'47	5'0061549	101427'3	19'210	
39	Lauraga Tila, XXIV	'35	49	23	38'99	4'8173926	65673'9	12'438	
	Hiara, XXX	'36	55	55	48'74	4'8552505	71655'7	13'571	
	Churamani, XXXII	'36	74	40	32'27	4'9213111	83427'9	15'801	
40	Hiara, XXX	'34	72	4	9'30	4'8964696	78789'7	14'922	
	Churamani, XXXII	'34	55	27	34'10	4'8338755	68214'3	12'919	
	Batehia, XXXIII	'33	52	28	16'60	4'8173926	65673'9	12'438	
41	Harargaj, XXV	'36	42	32	52'68	4'8215071	66299'0	12'557	
	Hiara, XXX	'37	92	33	40'97	4'9009932	97947'5	18'551	
	Komuntah, XXXI	'36	44	53	26'35	4'8400819	69196'2	13'105	
42	Hiara, XXX	'30	56	42	26'70	4'8055308	63904'4	12'103	
	Komuntah, XXXI	'30	63	9	27'65	4'8338755	68214'3	12'919	
	Batehia, XXXIII	'30	60	8	5'65	4'8215071	66299'0	12'557	
43	Churamani, XXXII	'34	38	59	47'54	4'7478020	55950'2	10'597	
	Batehia, XXXIII	'34	78	36	36'50	4'9403243	87161'4	16'508	
	Atarmura, XXXV	'34	62	23	35'96	4'8964696	78789'7	14'922	
44	Churamani, XXXII	'32	54	34	28'30	4'8531484	71309'7	13'506	
	Atarmura, XXXV	'32	40	32	40'70	4'7550002	56885'3	10'774	
	Sabaisara, XXXIV	'32	84	52	51'00	4'9403243	87161'4	16'508	
45	Batehia, XXXIII	'31	44	1	14'98	4'8531484	71309'7	13'506	
	Atarmura, XXXV	'31	102	56	17'01	5'0000458	100010'6	18'941	
	Sabaisara, XXXIV	'30	33	2	28'01	4'7478020	55950'2	10'597	
46	Sabaisara, XXXIV	'38	66	12	2'88	4'8957024	78650'7	14'896	
	Atarmura, XXXV	'37	57	44	42'30	4'8615049	72695'1	13'768	
	Bormura, XXXVI	'37	56	3	14'82	4'8531484	71309'7	13'506	
47	Atarmura, XXXV	'32	34	22	47'18	4'7156330	51955'7	9'840	
	Bormura, XXXVI	'33	86	52	54'27	4'9631905	91873'6	17'400	
	Saisum, XXXIX	'32	58	44	18'55	4'8957024	78650'7	14'896	
48	Bormura, XXXVI	'30	86	19	52'32	4'9385165	86709'4	16'439	
	Saisum, XXXIX	'30	56	59	19'62	4'8629436	72936'3	13'814	
	Lambusara, XXXVIII	'30	36	40	48'06	4'7156330	51955'7	9'840	
49	Sabaisara, XXXIV	'17	36	48	48'07	4'6463489	44294'4	8'389	
	Bormura, XXXVI	'17	42	44	9'41	4'7003967	50164'5	9'501	
	Champapura, XXXVII	'18	100	27	2'52	4'8615049	72695'1	13'768	
50	Bormura, XXXVI	'26	87	59	47'75	4'0242736	83968'9	15'909	
	Champapura, XXXVII	'25	60	12	1'76	4'8629436	72936'3	13'814	
	Lambusara, XXXVIII	'25	31	48	10'49	4'6463489	44294'4	8'389	

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle			Distance		
						Log. feet	Feet	Miles
51	Lambusara, XXXVIII	34	64	11	1'83	4'9035981	80093'7	15'169
	Saisum, XXXIX	34	38	30	31'38	4'7434937	55398'0	10'492
	Dawa, XL	34	77	18	26'79	4'9385165	86799'4	16'439
52	Saisum, XXXIX	29	49	44	11'16	4'7905017	61730'8	11'691
	Dawa, XL	29	48	20	39'89	4'7813418	60442'4	11'447
	Jamu, XLII	29	81	55	8'95	4'9035981	80093'7	15'169
53	Dawa, XL	24	49	46	18'69	4'7246483	53045'5	10'046
	Jamu, XLII	24	67	32	40'44	4'8076064	64210'5	12'161
	Neng, XLIV	24	62	41	0'87	4'7905017	61730'8	11'691
54	Jamu, XLII	27	66	57	4'09	4'8359331	68538'3	12'981
	Neng, XLIV	27	67	38	13'50	4'8381087	68882'5	13'046
	Hathimura, XLVI	26	45	24	42'41	4'7246483	53045'5	10'046
55	Neng, XLIV	29	70	5	52'47	4'8596110	72378'7	13'708
	Hathimura, XLVI	28	46	58	50'04	4'7503459	56278'9	10'659
	Eta, XLV	29	62	55	17'49	4'8359331	68538'3	12'981
56	Lambusara, XXXVIII	20	40	32	42'47	4'6675046	46505'5	8'808
	Dawa, XL	21	88	42	33'50	4'8544498	71523'7	13'546
	Barjatua, XLI	20	50	44	44'03	4'7434937	55398'0	10'492
57	Dawa, XL	20	54	17	35'74	4'7468084	55822'4	10'572
	Barjatua, XLI	21	83	8	12'92	4'8341213	68252'9	12'927
	Rokhia, XLIII	20	42	34	11'34	4'6675046	46505'5	8'808
58	Dawa, XL	23	41	34	23'88	4'6735877	47161'5	8'932
	Rokhia, XLIII	23	64	37	1'45	4'8076064	64210'5	12'161
	Neng, XLIV	23	73	48	34'67	4'8341213	68252'9	12'927
59	Rokhia, XLIII	21	52	32	7'30	4'7503459	56278'9	10'659
	Neng, XLIV	21	85	46	17'25	4'8494898	70711'5	13'392
	Eta, XLV	21	41	41	35'45	4'6735877	47161'5	8'932
60	Eta, XLV	36	58	41	42'47	4'8552078	71648'6	13'570
	Hathimura, XLVI	36	61	38	9'53	4'8679957	73789'7	13'975
	Sogaria, XLVII	36	59	40	8'00	4'8596110	72378'7	13'708
61	Hathimura, XLVI	20	43	26	29'87	4'6927431	49288'2	9'335
	Sogaria, XLVII	21	48	15	6'98	4'7281830	53479'0	10'129
	Sähebmura, XLVIII	21	88	18	23'15	4'8552078	71648'6	13'570
62	Eta, XLV	27	27	47	52'30	4'6927431	49288'2	9'335
	Sogaria, XLVII	28	107	55	15'27	5'0024284	100560'7	19'046
	Sähebmura, XLVIII	27	44	16	52'43	4'8679957	73789'7	13'975
63	Sogaria, XLVII	21	105	38	56'87	4'9179331	82781'5	15'678
	Sähebmura, XLVIII	20	39	22	4'90	4'7366318	54529'5	10'328
	Gojalia, XLIX	20	34	58	58'23	4'6927431	49288'2	9'335
64	Sähebmura, XLVIII	38	52	6	15'98	4'8429597	69656'2	13'192
	Gojalia, XLIX	39	58	12	20'62	4'8752012	75024'2	14'209
	Tulamura, L	39	69	41	23'40	4'9179331	82781'2	15'678
65	Sogaria, XLVII	30	49	58	39'82	4'8429597	69656'2	13'192
	Gojalia, XLIX	30	93	11	19'14	4'9581745	90818'5	17'200
	Tulamura, L	30	36	50	1'04	4'7366318	54529'5	10'328

CACHAR BRANCH SERIES.

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle			Distance		
						Log. feet	Feet	Miles
66	Dali Tila, XXVIII	"	o					
	Merpa Tila, XXIX	.33	106	29	43'06	5'0212594	105017'0	19'890
	Murphuta Tila, LI	.32	38	33	26'95	4'8342086	68266'7	12'929
67	Dali Tila, XXVIII	.32	34	56	49'99	4'7975312	62738'1	11'882
	Merpa Tila, XXIX	.42	56	49	56'43	4'9274999	84625'2	16'028
	Hajuma, LII	.42	84	48	34'06	5'0029518	100682'0	19'069
68	Merpa Tila, XXIX	.41	38	21	29'51	4'7975312	62738'1	11'882
	Murphuta Tila, LI	.50	46	15	6'71	4'8854016	76807'2	14'547
	Hajuma, LII	.51	52	44	31'08	4'9274999	84625'2	16'028
69	Murphuta Tila, LI	.51	81	0	22'21	5'0212594	105017'0	19'890
	Hajuma, LII	.48	72	44	38'97	4'9763529	94700'6	17'936
	Salama Tila, LIII	.48	56	29	30'92	4'9174203	82683'8	15'660
70	Murphuta Tila, LI	.48	50	45	50'11	4'8854016	76807'2	14'547
	Hajuma, LII	.44	40	22	44'04	4'8631245	72966'7	13'819
	Nemotha, LIV	.44	96	37	33'11	5'0487466	111878'5	21'189
71	Hajuma, LII	.44	42	59	42'85	4'8854016	76807'2	14'547
	Salama Tila, LIII	.35	40	8	1'80	4'7856451	61044'3	11'561
	Nemotha, LIV	.35	50	23	44'46	4'8631245	72966'7	13'819
72	Salama Tila, LIII	.35	89	28	13'74	4'9763529	94700'6	17'936
	Nemotha, LIV	.40	99	16	34'91	5'0465624	111317'2	21'083
	Ramphan, LV	.40	47	57	27'40	4'9230635	83765'2	15'865
73	Salama Tila, LIII	.39	32	45	57'69	4'7856451	61044'3	11'561
	Nemotha, LIV	.46	55	58	46'50	4'9831535	96195'2	18'219
	Tukbai, LVI	.47	92	17	12'53	5'0643377	115967'9	21'964
74	Nemotha, LIV	.46	31	44	0'97	4'7856451	61044'3	11'561
	Ramphan, LV	.59	44	19	44'61	4'9005335	79530'5	15'063
	Tukbai, LVI	.59	57	41	36'02	4'9831535	96195'2	18'219
		.59	77	58	39'37	5'0465624	111317'2	21'083

January 1880.

J. B. N. HENNESSEY,
In charge of Computing Office.

EASTERN FRONTIER SERIES—SECTION 23° TO 26°.

SECONDARY TRIANGULATION. TRIANGLES.

PRINCIPAL-AUXILIARY STATIONS AND INTERSECTED POINTS.

Differences between the common sides of two triangles to stations and intersected points, are shown by the small figures in the column for "Distance in Feet" between the data of the two triangles, the carrier of which in order has supplied the greater value: where the difference is small it has usually been apportioned between the triangles, but where it is large no adjustment has been made, as one or other of the two values must be erroneous.

No. of Triangle	Station	Corrected Plane Angle	Distance			No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
75	Tepkilabama, XLIV	79 13 5	4° 973629	94 109	17.824	80	Laidera, VIII	0 1 48	4° 638110	43462	8.231	Inch 24
	Mainang, XLV	30 51 0	5° 012492	102018	19.492		Mun, X	65 55 48	4° 779664	60209	11.403	"
	Larai		4° 798194	62834	11.900		Shillong		4° 799394	63008	11.933	"
76	Tepkilabama, XLIV	37 19 53	4° 941819	87462	16.565	81	Dinghei, VI	101 57 37	4° 838677	68973	13.063	"
	Sapedbenang	45 31 40	5° 012492	105918	19.492		Shillong	50 25 27	4° 735141	54343	10.292	12
	Larai		5° 155661	143107	27.104		Sapedbenang		4° 514293	32681	6.190	"
77	Mokerson, I	68 28 12	4° 678474	47695	9.033	82	Mopon, II	76 51 52	4° 813189	65041	12.318	24
	Mopon, II	44 33 30	4° 555997	35975	6.813		Landau Modo, IV	56 40 31	4° 746687	55807	10.599	"
	Mauda Hill Mark		4° 673820	47187	8.937		Maujuth Hill Mark (heliotrope)		4° 684980	48415	9.170	"
78	Mopon, II	32 26 29	4° 429043	26856	5.086	83	Dinghei, VI	109 59 4	4° 971662	93683	17.743	"
	Landau Modo, IV	72 18 16	4° 678474	47095	9.033		Sapedbenang		4° 777909	59967	11.357	"
	Mauda Hill Mark		4° 684980	48415	9.170		Nunklo	33 2 3	4° 735141	54343	10.292	7
79	Dinghei, VI	78 22 15	4° 779664	60209	11.403	84	Landau Modo, IV	63 4 6	4° 659558	45660	8.648	24
	Laidera, VIII	32 7 0	4° 514293	32681	6.100		Mautherrichan, VII	19 10 52	4° 220002	10827	3.487	"
	Shillong		4° 706294	57583	10.966		Sniang Hill Mark (heliotrope)		4° 705408	50747	9.611	"

NOTES.—1. Names followed by Roman numerals are those of Principal Stations. Stations Tepkilabama, XLIV, and Mainang, XLV appertain to the Assam Longitudinal Series.
 2. The values of the side are given in the same line with the opposite angle. * Base deduced by two sides and included angle.

No. of Triangle	Station	Corrected Plane Angle			Distance			Theodolite	No. of Triangle	Station	Corrected Plane Angle			Distance			Theodolite
		°	'	"	Log. feet	Feet	Miles				Log. feet	Feet	Miles	°	'	"	
85	Dinghei, VI	70	1	47	4 494601	31232	5 915	Inch	98	Ranganob, XI	58	0	43	4 713521	51704	9 792	Inch
	Shilong	30	24	13	4 225700	16817	3 185	24		Thanjimath, XIII	24	21	57	4 400512	23150	4 703	"
	Lungpathau Hill Mark (hel.)				4 514593	31681	6 190	12		Larungau				4 781190	60421	11 443	"
86	Maupani, V	40	56	54	4 731001	53827	10 195	24	Mun, X	68	18	53	4 713321	51704	9 792	"	
	Dinghei, VI	47	15	12	4 780419	65314	11 423	"	Thanjimath, XIII	52	18	12	4 643718	44027	8 338	"	
	Laitbli	91	47	54	4 914295	82091	15 548	"	Larungau				4 680191	47884	9 009	"	
87	Maupani, V	59	20	21	4 811931	64853	12 283	"	Ranganob, XI	7	54	25	3 939292	8695	1 647	"	
	Mauntherrichan, VII	53	7	47	4 780419	60314	11 423	"	Thanjimath, XIII	99	10	32	4 795192	62401	11 818	"	
	Laitbli	67	31	52	4 845044	69670	13 195	"	Kaundrodnglying				4 781190	60421	11 443	"	
88	Dinghei, VI	23	17	10	4 328316	21297	4 033	"	Mun, X	64	46	6	4 795192	62401	11 818	12	
	Laitbli	69	3	17	4 701674	50312	9 539	"	Ranganob, XI	35	25	48	4 021949	39090	7 574	24	
	Laidom				4 731001	53827	10 195	"	Kaundrodnglying	79	48	6	4 831823	67893	12 858	12	
89	Landau Modo, IV	36	35	21	4 545566	35121	6 632	"	Dingrango Hill Mark (heliotope)				4 376492	23795	4 597	"	
	Maupani, V	72	1	24	4 748530	56044	10 614	"	Larungau	74	23	19	4 719982	52479	9 959	"	
	Kollong Rock				4 746937	55839	10 576	"	Palangborsing	79	43	4	4 729276	53614	10 154	"	
90	Landau Modo, IV	44	53	28	4 613510	41069	7 778	"	Thanjimath, XIII				4 376492	23795	4 597	"	
	Mauntherrichan, VII	74	24	0	4 748530	56044	10 614	"	Larungau	99	21	33	4 780329	60329	11 426	"	
	Kollong Rock				4 795408	50747	9 611	"	Palangborsing	57	44	16	4 713521	51704	9 792	"	
91	Laitbli	22	44	13	4 153755	14248	2 668	"	Larungau	27	33	37	4 061379	11518	2 181	"	
	Laidom	12	33	10	3 903742	8012	1 517	7	Palangborsing	79	31	35	4 388800	24479	4 636	"	
	Mairang Bungalow				4 328316	21297	4 033	"	Maukchap	72	34	48	4 376492	23795	4 597	7	
92	Mauntherrichan, VII	56	50	7	4 791295	25820	4 890	"	Thanjimath, XIII	27	49	34	4 388800	24479	4 636	24	
	Laidera, VIII	102	48	22	4 859577	72373	13 707	24	Larungau	71	47	56	4 997386	49818	9 435	12	
	Mairang				4 11965	62129	11 767	"	Maukchap	57	44	16	4 713521	51704	9 792	"	
93	Mauntherrichan, VII	13	49	42	4 503175	31825	6 033	"	Palangborsing	96	41	6	4 261321	18252	3 457	7	
	Mun, X	73	36	40	5 100737	127801	24 216	"	Maukchap	44	30	15	4 109978	12882	2 440	"	
	Molim Temple				5 124318	13343	25 216	"	Cherra Poonjee Cenotaph No. 1	74	53	47	4 765777	58315	11 044	12	
94	Mauntherrichan, VII	34	39	38	4 530891	42746	8 096	"	Thanjimath, XIII	12	18	51	4 109978	12882	2 440	24	
	Laidera, VIII	33	21	44	4 630078	43559	8 250	"	Palangborsing	74	53	47	4 765777	58315	11 044	12	
	Larjuarkhan Hill Mark (hel.)				4 859577	72373	13 707	"	Cherra Poonjee Cenotaph No. 1				4 780329	60329	11 426	"	
95	Mauntherrichan, VII	61	38	38	4 912063	81670	15 468	"	Palangborsing	94	12	34	4 178751	15092	2 858	7	
	Laitbli	70	59	44	4 933389	86176	16 321	"	Maukchap	36	13	38	3 951503	8043	1 694	"	
	Dingrango Hill Mark (heliotope)				4 811931	64853	12 283	"	Cherra Poonjee Cenotaph No. 2				4 061379	11518	2 181	"	
96	Laitbli	60	37	42	4 884274	76668	14 509	"	Thanjimath, XIII	13	20	19	4 178751	15092	2 858	24	
	Dingrango Hill Mark (heliotope)				4 828635	67396	12 764	"	Maukchap	117	3	40	4 765337	58259	11 033	7	
	Suar	68	45	34	4 912063	81670	15 468	12	Cherra Poonjee Cenotaph No. 2				4 061379	11518	2 181	"	
97	Dinghei, VI	68	42	48	4 828635	67396	12 764	"	Thanjimath, XIII	12	16	39	4 140901	1382	2 620	24	
	Laitbli	46	20	39	4 840874	79323	13 129	24	Maukchap	117	44	23	4 760220	57573	10 904	7	
	Suar				4 731001	53827	10 195	12	Cherra Poonjee Cenotaph No. 3				4 061379	11518	2 181	"	

* Base deduced by two sides and included angle.

SECONDARY TRIANGULATION. TRIANGLES.

No. of Triangle	Station	Corrected Plane Angle	Distance			No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
111	Palangborsing Maurkhap Cherra Poonjee Cenotaph No. 3	h.s.	88 7 21	4 140991	13832	124	Dupi Tila, XXVII Dupi Tila Jaintiapur Hill Mark (heliotrope)	80 7 4	4 212502	16312	Inch 24 24	
			35 32 55	3 905604	8046				4 218960	16556		3 136
				4 061379	11518				3 483742	3046		0 577
112	Thanjinath, XIII Laringau Cherra Poonjee Church	h.s.	21 49 4	4 308440	20344	125	Dupi Tila, XXVII Dupi Tila Jaintiapur Palace	75 2 38	4 137408	13722	24 12	
			87 21 10	4 737835	54681				4 151938	14186		2 087
				4 713521	51704				3 483742	3046		0 577
113	Laringau Maurkhap Cherra Poonjee Church	h.s.	15 33 14	3 864483	7320	126	Bar Urni Tila, XXVIII Merpa Tila, XXIX Dupi Tila Temple	36 41 27	4 800362	7769	24	
			48 11 3	4 308440	20344				4 893937	63670		12 059
				4 388800	24479				5 074791	118793		22 499
114	Laringau Palangborsing Cherra Poonjee Monument	h.s.	10 6 54	3 856998	6871	127	Bar Urni Tila, XXVIII Dupi Tila, XXVII Lengura Masjid	49 59 9	4 713184	51663	24	
			27 20 52	4 254595	17972				4 671924	46981		8 898
				4 376492	23795				4 827890	67281		12 743
115	Laringau Palangborsing Cherra Poonjee Bungalow	h.s.	25 6 6	4 007746	10180	128	Dai Tila, XXVIII Merpa Tila, XXIX Moligul Thana (heliotrope)	10 18 32	4 062530	11549	24	
			72 19 23	4 359143	22864				4 869093	64431		12 203
				4 376492	23795				4 797531	62738		11 882
116	Laringau Palangborsing Maupahiang	h.s.	92 13 33	5 071162	117804	129	Merpa Tila, XXIX Moligul Thana (heliotrope) Nagarkhana No. 1	76 11 42	4 058432	11440	24	
			76 7 47	5 058638	114456				4 700194	5014		0 950
				4 376492	23795				4 062530	11549		12
117	Ranganobo, XI Laringau Langper	h.s.	135 18 25	4 554912	35885	130	Merpa Tila, XXIX Nagarkhana No. 1 Nagarkhana No. 2	90 3 8	3 050502	1123	24	
				4 125295	13544				3 710913	5139		0 973
				4 400533	25150				3 700194	5014		0 950
118	Ranganobo, XI Moneu, XII Fakir Tila	s.	68 57 29	4 999318	99845	131	Nagarkhana No. 1 Nagarkhana No. 2 Moligul Masjid	87 47 12	3 574474	3754	24	
			48 24 2	4 993087	79999				3 559363	3625		0 687
			62 38 29	4 977784	95013				3 050502	1123		0 213
119	Ranganobo, XI Fakir Tila Laikensau Temple	s.	39 42 27	4 808483	64340	132	Merpa Tila, XXIX Nagarkhana No. 1 Lakhiprasad Masjid	54 27 38	4 141672	13837	24	
			12 53 13	4 351431	22461				4 208370	16157		3 060
				4 993087	79999				3 700194	5014		0 950
120	Taramau Tila, XIV Khandigaon, XV Mahadeo Temple	s.	55 2 45	4 816758	65578	133	Palangborsing Maupahiang Tutisikar Tila	61 7 4	5 110482	131669	24	
			55 49 56	4 808665	66201				5 142178	138732		26 275
				4 873656	74758				5 071162	117804		22 311
121	Ranganobo, XI Abaung Tila, XVI Chhatak Monument	s.	35 23 31	4 867200	73655	134	Orthoki Tila, XIX Fakir Tila, XXI Tilaghari Temple	102 23 0	4 944851	88075	24	
			40 36 12	4 917857	82767				4 610684	40802		7 728
				5 091292	123393				4 843806	69792		13 218
122	Dupi Tila, XXVII Merpa Tila, XXIX Baraghati Tila Mark (heliotrope)	h.s.	87 23 53	4 860557	75537	135	Thanjinath, XIII Palangborsing Sylhet Church	74 13 38	5 156160	143274	24	
			5 31 41	3 844780	6995				5 108448	147383		27 913
				4 860438	75547				4 780329	60359		11 426
123	Dupi Tila, XXVII Baraghati Tila Mark (heliotrope) Dupi Tila	s.	76 46 45	3 842155	6953	136	Thanjinath, XIII Maurkhap Sylhet Church	69 18 15	5 139536	137801	24	
				3 483742	3046				5 168448	147383		27 913
				3 844780	6995				4 697386	49818		9 435

Range of No.	Station	Corrected Plane Angle	Distance			No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
137	Dali Tila, XXVIII	133 28 56	4 016483	82595	15 626	Jamu, XLII	41 15 33	4 669658	46737	8 852	Inch	
	Murphuta Tila, LI	9 37 18	4 578977	19005	3 600	Hathimura, XLVI	35 8 17	4 610347	46789	7 755	24	
	Liufani Tila Treo	4 854209	68267	12 929		Deotamura, Revenue Survey s.		4 838109	68882	13 046	"	
138	Dali Tila, XXVIII	10 36 5	3 979279	7573	1 434	Eta, XLV	27 17 39	4 853061	71295	13 593	"	
	Hufani Tila Treo	4 077850	11963	2 266		Sähebmura, XLVIII	112 24 21	5 157576	143739	27 223	"	
	Dhuantheni Tila	152 30 12	4 278877	19005	3 600	Jari Hill Mark (heliotrope)		5 002428	100561	19 046	"	
139	Dali Tila, XXVIII	148 25 9	4 184856	15395	2 899	Eta, XLV	55 5 32	5 072546	118181	22 383	"	
	Dhuantheni Tila	7 25 0	3 576026	5772	0 714	Sogaria, XLVII	94 6 29	5 157576	143739	27 223	"	
	Karimgauj Hat (heliotrope)	4 077550	11963	2 266		Jari Hill Mark (heliotrope)		4 867996	73790	13 975	"	
140	Dali Tila, XXVIII	59 4 19	4 015550	10365	1 963	Rokhia, XLIII	75 12 26	4 901058	79627	15 081	12	
	Dhuantheni Tila	22 52 21	3 671751	4606	0 889	Eta, XLV	45 37 57	4 769923	58874	11 150	24	
	Batikor Hill Mark	4 077850	11963	2 266		Fakirmura	59 9 37	4 849490	70711	13 392	12	
141	Dali Tila, XXVIII	44 8 29	3 968226	9290	1 760	Rokhia, XLIII	7 6 39	3 915752	8237	1 560	"	
	Dhuantheni Tila	72 6 58	4 103639	12695	2 404	Fakermura	55 7 6	4 737060	54583	10 338	"	
	Junia Hill Mark	4 077850	11963	2 266		Mayna Mati	117 46 15	4 769923	58874	11 150	"	
142	Geahpur, XXII	56 45 15	4 819300	65963	12 493	Rokhia, XLIII	28 24 44	4 415308	26032	4 930	"	
	Laurega Tila, XXIV	51 20 4	4 289468	61584	11 664	Mayna Mati	65 29 52	4 697088	49784	9 429	"	
	Mirgala Tila Mark (heliotrope)	4 874912	74974	14 200		Comillah Mark (heliotrope)		4 737060	54583	10 338	"	
143	Churamani, XXXII	94 20 34	4 976577	94750	17 945	Rokhia, XLIII	53 54 21	4 761277	57713	10 931	"	
	Atarmura, XXXV	19 7 36	4 493246	31135	5 897	Eta, XLV	44 11 20	4 697088	49784	9 429	24	
	Gajipur Temple	4 940224	87161	16 598		Comillah Mark (heliotrope)		4 849490	70711	13 392	"	
144	Churamani, XXXII	71 16 59	4 474589	20826	5 649	Rokhia, XLIII	19 50 43	4 293683	19664	3 724	12	
	Gajipur Temple	81 22 28	4 160291	14464	2 739	Mayna Mati	50 35 52	4 650883	44759	8 477	"	
	Kartik Tila	4 493246	31135	5 897		Gomati River Temple		4 737060	54583	10 338	"	
145	Churamani, XXXII	101 23 52	4 398704	25044	4 743	Fakirmura	88 4 45	4 293683	19664	3 724	"	
	Kartik Tila	43 15 50	4 244870	17574	3 328	Mayna Mati	67 10 23	4 258507	18135	3 435	"	
	Jilarpur Temple	4 160291	14464	2 739		Gomati River Temple		3 915752	8237	1 560	"	
146	Batchia, XXXIII	102 55 10	4 957634	99706	17 179	Rokhia, XLIII	5 15 37	4 023031	10545	1 997	"	
	Atarmura, XXXV	40 7 24	4 777949	59972	11 358	Mayna Mati	23 4 17	4 653906	45972	8 536	"	
	Adampur Mark (heliotrope)	4 747802	55950	10 597		Panchratan Temple		4 737060	54583	10 338	"	
147	Batchia, XXXIII	98 28 6	4 914530	82135	15 556	Fakirmura	49 6 31	4 023031	10545	1 997	"	
	Atarmura, XXXV	39 10 23	4 719778	54454	9 934	Mayna Mati	94 41 58	4 143075	13902	2 633	"	
	Kamalpura Mark (heliotrope)	4 747802	55950	10 597		Panchratan Temple		3 915752	8237	1 560	"	
148	Atarmura, XXXV	33 41 50	5 164150	145932	27 659	Fakirmura	95 44 16	4 132541	13369	2 570	"	
	Sasum, XXXIX	125 51 33	5 328741	213177	40 374	Mayna Mati	47 6 22	3 999599	9991	1 892	"	
	Singarbir Temple	4 963190	91874	17 400		Durgapur Temple		3 915752	8237	1 560	"	
149	Atarmura, XXXV	23 47 37	4 970751	93487	17 706	Rokhia, XLIII	41 14 34	4 564510	36687	6 948	"	
	Sasum, XXXIX	132 50 53	5 230167	169890	32 176	Mayna Mati	59 59 21	4 682942	48188	9 127	"	
	Agartala House	4 963190	91874	17 400		Sataratan Temple (heliotrope)		4 737060	54583	10 338	"	

SECONDARY TRIANGULATION. TRIANGLES.

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used	No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used											
			Log. feet	Feet	Miles					Log. feet	Feet	Miles												
163	Rokhia, XLIII Fakirmura Sataratan Temple (heliotrope)	34 7 55 54 55 26 4 769923	4 519023 4 682942 4 769923	33039 48188 58874	6 257 9 127 11 150	Inch 12 "	Dinghei, VI Mun, X Somullon	0 1 11 40 41 48 27 20 3	4 705286 4 552984 4 85262	50732 35726 72154	9 668 6 766 13 666	Inch 24 "												
													164	Hathimura, XLVI Sogaria, XLVII Nihalbari Hill Mark	27 50 28 17 27 52 4 855268	4 672756 4 486705 4 855268	47971 30249 71049	8 915 5 749 13 570	24 "	Mun, X Somullon Rablang	46 25 3 98 47 35	4 466723 4 570388 4 705286	29500 37187 50732	5 547 7 043 9 668
166	Eta, XLV Sogaria, XLVII Kalidasbari	42 43 16 41 48 31 4 867990	50290 49417 73790	9 525 9 359 13 915	h.s. "	38 5 14 78 4 53 63 51 53	4 300099 4 500770 4 463393	19957 31679 29067	3 780 6 000 5 505															
										167	Sogaria, XLVII Gojaha, XLIX Kalidasbari	104 37 16 35 53 59 39 28 45	89288 50290 54530	15 717 9 525 10 328	h.s. "	37 15 42 106 29 29 36 14 49	4 511069 4 710743 4 500770	32439 51374 31679	6 144 9 730 6 000					
168	Sogaria, XLVII Kalidasbari Tulerai	26 0 2 92 49 35 61 10 23	4 400790 57334 50290	10 859 9 525	h.s. "	37 15 42 106 29 29 36 14 49	4 511069 4 710743 4 500770	32439 51374 31679	6 144 9 730 6 000															
										169	Kalidasbari Tulerai Bhalukjeri	30 48 34 32 21 10 116 50 16	14445 15092 25165	2 736 2 858 4 766	h.s. "	109 21 34 49 47 46	4 370035 4 802513 4 710743	23935 63402 51374	4 533 12 019 9 730					
170	Kalidasbari Bhalukjeri Fuljeri	48 25 20 43 6 9 88 28 31	11294 10316 15092	2 139 1 954 2 858	h.s. "	58 18 32 94 45 26 26 56 2	4 652848 4 721475 4 379035	44962 52659 23935	8 516 9 973 4 533															
										171	Tulerai Bhalukjeri Fuljeri	43 51 37 73 44 7 62 24 16	11294 15047 14445	2 139 2 963 2 736	h.s. "	33 42 50 78 40 40 67 36 30	4 431223 4 678358 4 652848	26901 47682 44962	5 112 9 031 8 516					
172	Tulerai Bhalukjeri Kalikor Hill	127 46 47 30 0 10 4 159712	30193 19102 14445	5 718 3 618 2 736	h.s. "	49 49 15 67 13 12 62 57 33	4 61746 4 603365 4 678358	40902 49359 47682	7 747 9 348 9 031															
										173	Bhalukjeri Kalikor Hill Durga Thakur's Tank	30 2 32 126 56 48	18914 14768 30193	3 582 2 797 5 718	h.s. s.	42 36 31 44 51 5 92 32 24	4 442753 4 400529 4 61746	47717 28875 40902	5 250 5 409 7 747					
174	Bhalukjeri Kalikor Hill Badri	17 23 59 118 8 49	10240 23981 30193	1 959 4 542 5 718	h.s. s.	49 41 8 97 29 19	4 590927 4 704904 4 442753	36988 50695 47717	7 384 9 001 5 250															
										175	Kalikor Hill Durga Thakur's Tank Badri	21 44 59 136 48 29	10102 10240 18914	1 913 1 959 3 582	h.s. "									

JAINTIAPUR
SECONDARY SERIES.

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used	No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used						
			Log. feet	Feet	Miles					Log. feet	Feet	Miles							
187	Mausiar	h.s.	34 52 14	4 354698	22531	Inch	200	Maulang Selim	h.s.	28 25 30	4 337485	21751	Inch						
	Mausiar	"	90 5 35	4 597511	39583	"		"	"	"	51 17 57	4 552200	35602	"					
	Thakuni	"	55 2 11	4 511069	32439	"		"	"	"	4 652848	44962	8 516	"					
188	Mausiar	h.s.	65 59 30	4 682313	48119	"	201	Jongaiar	h.s.	55 18 51	4 571532	37285	"						
	Selim	"	25 26 37	4 354698	22631	"		"	"	83 5 6	4 653339	45013	"						
	Thakuni	"	88 33 53	4 721475	52059	"		"	"	41 30 3	4 478637	30105	"						
189	Selim	h.s.	69 39 42	4 696878	49760	"	202	Thampianai	h.s.	50 8 52	4 742587	55282	"						
	Thakuni	"	45 16 51	4 576438	37708	"		"	"	98 40 10	4 852405	71188	"						
	Sonoriang	"	65 3 27	4 682313	48119	"		"	"	4 571532	37285	7 062	"						
190	Selim	h.s.	33 48 13	4 333907	21573	"	203	Mausiar	h.s.	94 37 36	4 639770	43628	"						
	Sonoriang	"	69 40 17	4 506632	36361	"		"	"	52 13 26	4 539040	34597	"						
	Jongaiar	"	76 31 30	4 576438	37708	"		"	"	4 379035	23935	4 533	"						
191	Selim	h.s.	55 10 36	4 478637	30105	"	204	Mausiar	h.s.	73 12 11	4 454704	28491	"						
	Jongaiar	"	42 17 53	4 302345	24680	"		"	"	53 15 30	4 377457	23848	"						
	Thampianai	"	82 31 31	4 560632	36361	"		"	"	4 379035	23935	4 533	"						
192	Selim	h.s.	70 18 10	4 474349	29809	"	205	Maulang	h.s.	65 30 31	4 653359	45015	"						
	Skumletap	"	51 12 50	4 302345	24680	"		"	"	20 43 17	4 243094	17502	"						
	Thampianai	"	4 431223	26991	5 112	"		"	"	4 693365	49359	9 348	"						
193	Thakuni	h.s.	50 38 43	4 687816	48732	"	206	Maulang	h.s.	109 45 53	4 304488	20160	"						
	Sonoriang	"	77 12 44	4 788596	61461	"		"	"	3 756303	5706	1 081	"						
	Nangingai Hill Mark	"	4 696878	49760	9 424	"		"	"	4 243094	17502	3 315	"						
194	Selim	h.s.	36 2 16	4 416839	26112	"	207	Maulang	h.s.	34 0 26	4 456137	28585	"						
	Sonoriang	"	22 7 47	4 223227	16720	"		"	"	40 57 25	4 255062	33501	"						
	Mautiar Hill Mark	"	4 576438	37708	7 142	"		"	"	4 693365	49359	9 348	"						
195	Sonoriang	h.s.	34 9 20	4 185608	15332	"	208	Mapahniang	h.s.	46 3 5	4 414075	25946	"						
	Mautiar Hill Mark	"	4 416599	26098	4 943	"		"	"	83 40 29	4 554114	35819	"						
	Yao	"	72 58 25	4 416839	26112	"		"	"	4 442753	27717	5 250	"						
196	Maulang	h.s.	6 0 10	4 237669	17285	"	209	Maupahniang	h.s.	45 57 51	4 417668	26162	"						
	Selim	"	9 46 56	4 448437	28083	"		"	"	84 25 33	4 558938	36219	"						
	Umoi Bungalow	"	4 652848	44962	8 516	"		"	"	4 442753	27717	5 250	"						
197	Selim	h.s.	39 7 36	4 273477	18771	"	CACHAR SECONDARY SERIES.						210	Salama Tila, LIII	h.s.	95 24 55	4 811376	64770	12 267
	Skumletap	"	26 1 20	4 115609	13050	"								Nemotha, LIV	"	17 15 24	4 284011	19231	3 642
	Sonoriang Hill Mark	"	4 431223	26991	5 112	"								Jagdol Tila Mark (heliotrope)	"	4 785645	61044	11 561	
198	Skumletap	h.s.	25 11 30	4 179239	15109	"	210	Salama Tila, LIII	h.s.	95 24 55	4 811376	64770	12 267						
	Thampianai	"	31 55 27	4 273477	18771	"		Nemotha, LIV	"	17 15 24	4 284011	19231	3 642						
	Sonoriang Hill Mark	"	4 474349	29809	5 646	"		Jagdol Tila Mark (heliotrope)	"	4 785645	61044	11 561							
199	Selim	h.s.	27 22 43	4 100673	12609	"	210	Salama Tila, LIII	h.s.	95 24 55	4 811376	64770	12 267						
	Skumletap	"	52 29 47	4 337485	21751	"		Nemotha, LIV	"	17 15 24	4 284011	19231	3 642						
	Dingleng Hill Mark	"	4 431223	26991	5 112	"		Jagdol Tila Mark (heliotrope)	"	4 785645	61044	11 561							

No. of Triangle	Station	Corrected Plane Angle ° ' "	Distance			Theodolite used	No. of Triangle	Station	Corrected Plane Angle ° ' "	Distance			Theodolite used
			Log. feet	Feet	Miles					Log. feet	Feet	Miles	
211	Nemtha, LIV Tukbai, LVI Cachar Mark (heliotope)	93 2 38 34 55 50	5° 08' 57"	121859	23.079	Inch 24 "	214	Ramphan, LV Tukbai, LVI Lakhipur Thana (heliotope)	115 41 49 10 27 28	4° 94' 82.03	88757	16.810	Inch 12 2 1/2
			4° 8' 43.09	69873	13.234					4° 25' 33.33	17879	3.386	
			4° 9' 83.153	90195	18.219					4° 9' 00.534	79530	15.065	
212	Salama Tila, LIII Nemtha, LIV Changur Tila Mark (heliotope)	151 21 32 13 22 26	5° 04' 57.86	111119	21.045	"	215	Salama Tila, LIII Tukbai, LVI Kalanaga Hill Peak	40 12 17 92 35 45	5° 06' 87.16	102027	19.323	"
			4° 72' 93.44	57622	10.156					5° 10' 83.60	157892	29.904	
			4° 78' 56.45	61044	11.561					5° 04' 33.38	115968	21.964	
213	Nemtha, LIV Tukbai, LVI Lakhipur Thana (heliotope)	52 47 49 67 31 12	4° 94' 82.03	88757	16.810	"	216	Ramphan, LV Tukbai, LVI Kalanaga Hill Peak	82 58 0 46 21 6	5° 00' 87.16	102027	19.323	Inch 12 2 1/2
			5° 01' 26.97	102967	19.501					4° 87' 14.89	74386	14.088	
			4° 9' 83.153	90195	18.219					4° 9' 00.534	79530	15.065	

January 1880.

J. B. N. HENNESSEY,
In charge of Computing Office.

EASTERN FRONTIER SERIES—SECTION 23° to 26°.

AZIMUTHS OF SURROUNDING STATIONS AND POINTS, AT PRINCIPAL, PRINCIPAL-AUXILIARY, AND SECONDARY STATIONS.

The following table contains, in the first column, the name of each Principal, Principal-Auxiliary, or Secondary Station, at which azimuths of surrounding Points have been measured; immediately followed by those azimuths. The second column contains the number of the triangle which gives the distance between the Station and the Point.

Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance
ABANGI TILA, XVI	23	BADRI s.	174	BATCHIA, XXXIII	146
Orthoki Tila, XIX	28	Bhālukjēri	174	Ādampur Mark (heliotrope)	163 4 19
Bisembērpur, XVII	121	Kāikōr Hill	56	Hiara, XXX	191 14 2 57
Chhātāk Monument	20		56	Komuntāh, XXXI	251 22 8 51
Taramun Tila, XIV	20	BARAṬTVA, XLI	57		
Khandigaon, XV	21	Lambusara, XXXVIII	21	BHARUKĒRI h.s.	
Bar Utrī Tila, XVIII	23	Dava, XL	21	Badri	s. 16 50 42
Kālias Tila, XX	47	Rokhia, XLIII	21	Durga, Thākūr's Tank	h.s. 29 20 15
	149		21	Kālidāsbari	h.s. 212 36 17
ATAMPUR, XXXV	148	BAR UTŚI TILA, XVI	21	Fuljēri	" 255 42 26
Saisum, XXXIX	148	Abangi Tila, XVI	21	Tulerai	" 329 26 33
Agartala House	46	Khandigaon, XV	21	Kāikōr Hill	" 359 26 43
Singarbīr Temple	44	Lengura Masjid	21		
Bornura, XXXVI	143	Dupi Tila Temple	21	BISEMBERPUR, XVII	
Sabaisara, XXXIV	43	Dupi Tila, XXVII	21	Taramun Tila, XIV	176 17 31 43
Gājipur Temple	146	Mama Bhagna Tila, XXVI	21	Abangi Tila, XVI	260 21 19 54
Churamani, XXXII	147	Kālias Tila, XX	21	Orthoki Tila, XIX	302 37 59 14
Ādampur Mark (heliotrope)	43		21		
Kamālpur Mark (heliotrope)	147	BARUTSI, XXXIII	43	BORNURA, XXXVI	
Batchia, XXXIII	43	Atarnura, XXXV	43	Lambusara, XXXVIII	72 31 43 86
	175	Sabaisara, XXXIV	45	Champamura, XXXVII	160 31 31 87
		Churamani, XXXII	40	Sabaisara, XXXIV	203 15 41 45
BADRI s.		Kamālpur Mark (heliotrope)	147	Atarnura, XXXV	259 18 56 64
Durga Thākūr's Tank				Saisum, XXXIX	346 11 51 24

AZIMUTHS OF STATIONS AND INTERSECTED POINTS.

Name of station with azimuths of surrounding points	No. of triangles & distance	Name of station with azimuths of surrounding points	No. of triangles & distance	Name of station with azimuths of surrounding points	No. of triangles & distance
CHAMPAMURA, XXXVII Lambusara, XXXVIII Sabalasara, XXXIV Bormura, XXXVI	50 49 49	DINGHEI, VI Suair Laidera, VIII Laitbli Laidom Maupáni, V Nunklo Umter, III	97 5 86 88 4 83 4	FAKIMURA h.s. Panchratan Temple Rokhia, XLIII Gomati River Temple Durgapur Temple Sakratan Temple (heliotrope) Eka, XLV	160 153 158 161 163 153
CUPRAMANI, XXXII Kártik Tila Sabalasara, XXXIV Gajipur Temple Jaiapur Temple Lauraga Tila, XXIV Hara, XXX Batehia, XXXIII Atarmura, XXXV	144 44 143 145 39 39 40 43	DUPI TILA, XXVII Barghátí Tila Mark (heliotrope) Bar Útí Tila, XVIII Lengura Masjid Dupi Tila Maupahnang Jaintipur Palace Jaintipur Hill Mark (heliotrope) Nongkem Merpa Tila, XXIX Mama Bhagna Tila, XXVI	81 85 176 79 6 122 84 127 123 186 125 124 186 85 34	FAKIR TILA s. Mopen, XII Lakhsau Temple Rangsanobo, XI FULBARI h.s. Tulerá Bhálukjeri Káldásbári	118 119 118 171 170 170
DALI TILA, XXVIII. Batikor Hill Mark Junia Hill Mark Junia Tila, XXIII Kulerai Tila, Tree Hufúni Tila Dhuatheni Tila Mama Bhagna Tila, XXVI Molégul Thana (heliotrope) Merpa Tila, XXX Karinganji Hát (heliotrope) Hajuma, LI Murphuta Tila, LI	140 141 37 137 138 36 128 36 67 66	DUPPI TILA s. Jaintipur Palace Jaintipur Hill Mark (heliotrope) Dupi Tila, XXVII Barghátí Tila Mark (heliotrope)	125 124 123 123	GAHARA, XLIX Káldásbári Sogaria, XLVII Sáhebmura, XLVIII Tulamuru, L	167 63 68 64
DAWA, XL Rokhia, XLIII Barjéta, XLI Lambusara, XXXVIII Saisum, XXXIX Jamu, XLII Neng, XLIV	57 56 51 51 52 53	DURGA THAKUR'S TANK s. Bhálukjeri Kálíkor Hill Badri	173 173 175	HARUMA, LII Murphuta Tila, LI Dali Tila, XXVIII Merpa Tila, XXIX Nemotba, LIV Salama Tila, LIII	68 67 67 70 69
DEOTAMURA, REVENUE SURVEY s. Hathimura, XLVI Jamu, XLII	150 150	EKA, XLV Fakimura Comillah Mark (heliotrope) Rokhia, XLIII Neng, XLIV Hathimura, XLVI Jari Hill Mark (heliotrope) Sáhebmura, XLVIII Sogaria, XLVII Káldásbári	153 156 59 55 55 151 62 60 166	HARANGAI, XXV Hara, XXX Lauraga Tila, XXIV Pakbar Tila, XXI Kulerai Tila, XXIII Komuntuh, XXXI HAROGAOK, XLII*	38 27 26 26 41
DICAPRENI TILA s. Hufáni Tila Tree Karinganji Hát (heliotrope) Dali Tila, XXVIII Batikor Hill Mark Junia Hill Mark	138 139 138 140 141	FAKIR MURA h.s. Mayna Mati	154	Mopen, II Tepkilabana, XLIV* Mokerson, I	8 1 1

* Of the Assam Longitudinal Series.

Name of station with azimuths of surrounding points	No. of triangle girth distance	Name of station with azimuths of surrounding points	No. of triangle girth distance	Name of station with azimuths of surrounding points	No. of triangle girth distance
SALAMA TILA, LIII Murphuts Tila, LI Jagdol Tila Mark (heliotrope)	81 58 25.31 90 43 6 210	SOGARIA, XLVII Hathimura, XLVI Nilahábari Hill Mark	190 39 54.46 207 58 46 164	TRAMPANAI h.s. Skumletap Sonariang Hill Mark	67 41 41 99 37 8 188
Hajuma, LII Nemotba, LIV Tukbai, LVI Káinaga Hill Peak	132 44 15.90 183 8 0.71 71 239 6 47.68	Jari Hill Mark (heliotrope) Tulaumura, L Gojala, XLIX	224 57 15 238 46 1.65 294 26 18.60 344 24 58.72	" " 208 42 12 " 291 47 18 " 341 56 10	191 201 202
Rampuan, LV Changur Tila Mark (heliotrope)	279 19 5 282 24 30.02 212	SONULLON h.s. Mun, X Dinghei, VI Maunlengdep Rablung	18 56 48 130 54 57 h.s. 273 46 20 " 332 31 45	THANINATH, XIII Sylhet Church Khandigaon, XV Maurkhap Ranganoboo, XI Palangboarsing Cherra Poonjee Church Cherra Poonjee Cenotaph No. 3 Cherra Poonjee Cenotaph No. 2 Cherra Poonjee Cenotaph No. 1 Laringau Mun, X Kandronghying	3 51 33 4 39 7.33 7 3 9.48 76 37 25.43 78 5 11 79 10 18 85 26 27 86 30 7 90 24 2 100 59 22 153 17 34.84 175 47 57
SAPEDBENANG h.s. Shillong Dinghei, VI Nunkho Larai	20 28 3 48 4 29 81 83 171 36 12	SONORANG h.s. Selim Mautiar Hill Mark Yáo Thakuni Nangjinghi Hill Mark Jongsaiar	37 12 6 59 19 53 93 29 13 102 15 33 179 28 17 327 31 49	THARAUANG h.s. Sonarája Hill Mark (heliotrope) Thampianai Jongsaiar	13 9 49 h.s. 111 49 59 " 153 26 2
SELM h.s. Skumletap Dinglung Hill Mark Umot Bungalow Maulang Mausiar Thakuni Mautiar Hill Mark Sonariang Jongsaiar Thampianai Sonariang Hill Mark.	16 27 18 43 50 1 85 21 2 95 7 58 122 4 0 147 30 37 181 8 3 194 217 10 19 350 58 32 366 9 8 337 19 42	SUAR h.s. Dingruogo Hill Mark (heliotrope) Laitbhi Dinghei, VI	66 25 47 h.s. 135 11 21 181 32 0	189 194 195 189 193 190	
SHILLONG h.s. Mun, X Laidera, VIII Dinghei, VI Langpathau Hill Mark (hel.) Sapedbenang	7 39 31 80 29 55 79 150 0 40 85 200 26 7	TARAMUN TILA, XIV Mopen, XII Ranganoboo, XI Maládeo Temple Khandigaon, XV Abaug Tila, XVI Bisemberpur, XVII	132 12 22.20 195 28 28.43 205 14 2 260 16 47.12 299 50 1.45 356 17 16.80	TURBAI, LVI Rampuan, LV Lakhipur Thana (heliotrope) Cachar Mark (heliotrope) Salama Tila, LIII Nemotba, LIV Káinaga Hill Peak	12 59 45.31 22 27 13 56 2 35 59 14 23.84 90 58 25.27 326 38 39
SKUMLETAP h.s. Nongkem Maupaniang Maulang Dinglung Hill Mark Selim Sonariang Hill Mark Thampianai	19 0 29 61 37 0 184 128 50 12 143 56 55 199 190 26 42 222 28 2 247 39 32	TEPKILADAMA, XLIV* Mokerson, I Harogaon, XLII* Masiang, XLV* Larai Umter, III THAKUNI h.s. Mausiar Mausalar Nangjinghi Hill Mark Sonariang Selim	31 1 15.64 89 58 51.20 204 39 40.07 h.s. 268 35 29 329 49 21.72	TULAMURA, L Gojala, XLIX Sogaria, XLVII Sáhebaura, XLVIII	77 42 7.04 114 32 8.38 147 23 30.83
SOGARIA, XLVII Tulerai Káidásbari Eka, XLV Thlips Tila Hill Mark	63 2 13 89 2 15 166 60 158 51 36	TULERAI h.s. Kálikor Hill Bháktjeri Káidásbari Fuljeri Sogaria, XLVII	56 2 29 111 4 40 231 33 2 282 11 45 327 28 36	TULERAI h.s. Kálikor Hill Bháktjeri Káidásbari Fuljeri Sogaria, XLVII	21 40 17 149 27 4 181 48 14 193 18 41 242 58 37
168 169 168 171 168	187 187 193 180 188	187 187 193 180 188	187 187 193 180 188	172 169 168 171 168	

* Of the Assam Longitudinal Series.

Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance
TUTSIKAR TILA S. Palangborsing Maupahiang	° ' " h. s. 157 35 20 " 209 9 48	YAO h. s. Sonoriang Mautiar Hill Mark	° ' " 48 28 11 79 102 39 31 80 149 53 2 40 326 12 23 13	UMTER, III Maupani, V Mokerson, I Tepkilabama, XLIV* Dinghei, VI	° ' " h. s. 273 27 11 346 25 36

* Of the Assam Longitudinal Series.

February 1880.

J. B. N. HENNESSEY,
In charge of Computing Office.

EASTERN FRONTIER SERIES—SECTION 23° TO 26°.

CO-ORDINATES AND DESCRIPTIONS OF ALL STATIONS AND POINTS.

The following table gives the co-ordinates of all the stations and other fixed points, arranged in alphabetical order, also the descriptions of the secondary and intersected (or unvisited) points, and references to the preceding pages where the descriptions of the principal stations are given. In certain instances numbers are added which have reference to the given data of the triangles by which the station or point has been fixed; when these numbers are omitted it is to be understood that no triangles are given.

NOTE.— λ stands for Latitude North; L for Longitude East of Greenwich; H for Height of station in feet above mean sea level, determined trigonometrically, and refers to the upper mark-stone or to the upper surface of the pillar on which the theodolite stood; h for Height of station tower or pillar. For visited stations and for other points of superior accuracy the values of λ and L are given to two places of decimals; for well determined objects to one place, and for the remaining points to the nearest second. Principal stations are distinguished by the Roman numerals I, II, &c., secondary stations by the letters h.s. and s. The names in italics are those of the territories, states or districts in which the stations or points are situated.

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Abangi Tila, XVI. <i>(Vide page 5—<i>π</i>.)</i> λ 24 56 23.89 L 91 54 4.54 H 257 h 6 No. 20	Badri s. <i>(Tipperah)</i> It is 17 feet E. of the bungalow to E. of the high road from Comillah to Chittagong, near the eighty-first mile post, and about 21 miles from Comillah. λ 23 11 43.21 L 91 21 40.51 Nos. 174, 175	Batchia, XXXIII. <i>(Vide page 8—<i>π</i>.)</i> λ 24 5 0.23 L 91 56 41.17 H 1244 h 2 Nos. 40, 42
Ádampur Mark (heliotrope). <i>(Sylhet)</i> On a branch of the Dhalái stream, about 1 mile N. of Lánámud bazar. λ 24 14 28.64 L 91 53 32.48 No. 146	Baragháti Tila Mark (heliotrope). <i>(Sylhet)</i> On a detached hill, about midway between the Hari river and Digha Bil. λ 25 4 37.48 L 92 10 21.74 No. 122	Batikor Hill Mark. <i>(Sylhet)</i> About $\frac{1}{2}$ of a mile N. of the Púrán Kusi-yára river. λ 24 50 39.97 L 92 24 3.15 No. 140
Ágartala House, <i>(Hill Tipperah)</i> New. Turret of staircase at N. end of Rájá's two storied house. λ 23 50 13.4 L 91 19 31.3 No. 149	Barjatua, XLI. <i>(Vide page 8—<i>π</i>.)</i> λ 23 44 34.10 L 91 14 25.44 H 161 h 4 No. 56	Bhálukjeri h.s. <i>(Hill Tipperah)</i> On a detached hill, about 2 miles E. of the high road from Comillah to Chittagong. λ 23 15 30.64 L 91 22 55.00 No. 169
Atarmura, XXXV. <i>(Vide page 8—<i>π</i>.)</i> λ 24 0 24.09 L 91 47 57.74 H 1428 h 2 No. 43	Bar Utni Tila, XVIII. <i>(Vide page 6—<i>π</i>.)</i> λ 24 57 57.86 L 92 2 0.59 H 267 h 7 No. 21	Bisemberpur, XVII. <i>(Vide page 6—<i>π</i>.)</i> λ 24 54 37.14 L 91 42 32.71 H 41 h 11 No. 28

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Bormura, XXXVI. (<i>Vide page 8—π.</i>) λ 23 58 0' 25 L 91 34 4' 13 H 573 h 5 No. 46	Cherra Poonjee, Cenotaph No. 3. (<i>Khási and Jaintia Hills</i>) Steeple or Khási Cenotaph on hill top, S. of Chorra village. λ 25 16 52' 8 L 91 46 3' 1 Nos. 110, 111	Dhuatheni Tila s. (<i>Sylhet</i>) About $\frac{1}{2}$ a mile W. and S. of the Mati Khál and $\frac{1}{2}$ of a mile N.E. of Majgrám village. λ 24 50 36' 93 L 92 22 10' 66 No. 138
Cachar Mark (heliotrope). (<i>Cachar</i>) On the foundation of church. λ 24 49 40' 95 L 92 50 48' 87 No. 211	Cherra Poonjee Church, (<i>Khási and Jaintia Hills</i>) Steeple. λ 25 15 56' 4 L 91 46 43' 3 Nos. 112, 113	Dinghei, VI. (<i>Vide page 4—π.</i>) λ 25 36 29' 19 L 91 50 38' 37 H 6067 h 3 No. 4
Cachar Tomb. (<i>Cachar</i>) λ 24 49 36' 4 L 92 50 36' 2	Cherra Poonjee Monument. (<i>Khási and Jaintia Hills</i>) Mr. Scott's Monument. λ 25 16 20' 6 L 91 46 40' 6 No. 114	Dingleng Hill Mark. (<i>Khási and Jaintia Hills</i>) About $\frac{1}{2}$ of a mile E. of Amlikthor and the same distance N.E. of Thangbuli village. λ 25 18 16' 77 L 92 12 11' 32 Nos. 199, 200
Champamura, XXXVII. (<i>Vide page 8—π.</i>) λ 24 4 53' 98 L 91 31 24' 76 H 504 h 5 No. 49	Chhátak Monument. (<i>Sylhet</i>) λ 25 2 2' 8 L 91 42 15' 5 No. 121	Dingrango Hill Mark (heliotrope). (<i>Khási and Jaintia Hills</i>) Close to and N.W. of Rámsokan village and about $\frac{1}{2}$ of a mile S.W. of Mosingi H.S. This point was originally intended for a principal station and a tower 20 feet high was built. λ 25 19 58' 74 L 91 37 32' 71 H 5754 h 20 No. 95
Changur Tíla Mark (heliotrope). (<i>Cachar</i>) Near temple. λ 24 43 8' 22 L 92 55 14' 57 No. 212	Churamani, XXXII. (<i>Vide page 7—π.</i>) λ 24 14 46' 96 L 91 47 19' 94 H 287 h 4 No. 39	Domsalámat Tree. (<i>Khási and Jaintia Hills</i>) λ 25 19 14 L 91 26 21
Chatharchura Hill Peak. (<i>Sylhet-Cachar-Lushai Hills</i>) λ 24 15 16 L 92 28 32	Comillah Mark (heliotrope). (<i>Tipperah</i>) λ 23 27 54' 19 L 91 13 18' 91 Nos. 155, 156	Dupi Tíla, XXVII. (<i>Vide page 7—π.</i>) λ 25 5 43' 83 L 92 10 43' 68 H 301 h 2 No. 34
Cherra Poonjee, Bungalow. (<i>Khási and Jaintia Hills</i>) 8. chimney of Emma Ville Bungalow. λ 25 15 30' 1 L 91 47 36' 1 No. 115	Dali Tíla, XXVIII. (<i>Vide page 7—π.</i>) λ 24 51 26' 21 L 92 24 8' 80 H 157 h 3 No. 36	Dupi Tíla s. (<i>Sylhet</i>) Or Base Station No. 1. λ 25 5 45' 60 L 92 10 10' 60 No. 123
Cherra Poonjee, Cenotaph No. 1. (<i>Khási and Jaintia Hills</i>) Steeple or Khási Cenotaph on road to Gaubáti, and farthest from Cherra village. λ 25 17 42' 1 L 91 45 52' 9 No. 106, 107	Dawa, XL. (<i>Vide page 8—π.</i>) λ 23 45 17' 63 L 91 22 43' 81 H 205 h 8 No. 51	Dupi Tíla Temple. (<i>Sylhet</i>) Also called Rámeshwar Math. λ 25 5 45' 7 L 92 9 45' 0 No. 126
Cherra Poonjee, Cenotaph No. 2. (<i>Khási and Jaintia Hills</i>) Steeple or Khási Cenotaph on hill top, N. of Cherra village. λ 25 17 2' 9 L 91 45 54' 8 Nos. 108, 109	Deotámura, Revenue Survey s. (<i>Hill Tipperah</i>) Northern, bottom of crooked staff on a long range of hills. λ 23 36 39' 21 L 91 38 31' 54 No. 160	Durgápur Temple, (<i>Tipperah</i>) Southern. λ 23 28 36' 1 L 91 11 11' 7 No. 161

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Durga Thákur's Tank s. (<i>Tipperah</i>) On embankment at the N.E. corner of a tank, 0.1 of a mile S.E. of the Moonisif's kachabri of Chauddagaon, S.W. of Lakhipur village, and E. of the high road from Comillah to Chittagong; pargana Chauddagaon.</p> <p>o ' "</p> <p>λ 23 13 23.25 L 91 21 37.06 No. 173</p>	<p>Gomati River Temple. (<i>Tipperah</i>) On N. bank.</p> <p>o ' "</p> <p>λ 23 29 9.2 L 91 12 33.8 Nos. 157, 158</p>	<p>Hufáni Tíla Tree. (<i>Sylhet</i>)</p> <p>o ' "</p> <p>λ 24 49 38 L 92 21 20 No. 137</p>
<p>Eta, XLV. (<i>Vide page 9—w.</i>)</p> <p>λ 23 25 43.13 L 91 23 22.25 H 341 h 4 Nos. 55, 59</p>	<p>Hajuma, LII. (<i>Vide page 10—w.</i>)</p> <p>λ 25 1 43.86 L 92 38 27.81 H 2505 h 2 Nos. 67, 68</p>	<p>Jagdol Tíla Mark (heliotrope). (<i>Cachar</i>)</p> <p>λ 24 51 10.07 L 92 47 35.31 No. 210</p>
<p>Fakírmura h.s. (<i>Tipperah</i>) On the road from Comillah to Dáud-káudi, about 4½ miles from Comillah.</p> <p>λ 23 28 24.36 L 91 9 25.09 No. 153</p>	<p>Hararga, XXV. (<i>Vide page 7—w.</i>)</p> <p>λ 24 24 32.49 L 92 7 25.58 H 1105 h 2 No. 26</p>	<p>Jagged Hill, (<i>Manipur Hills</i>) With swell in centre.</p> <p>λ 24 52 50 L 93 30 56</p>
<p>Fakír Tíla s. (<i>Sylhet</i>) On the E. extremity of a hill near junction of the Bharara Gáng with the Surma river.</p> <p>λ 25 2 34.86 L 91 41 59.62 No. 118</p>	<p>Harogaon, XLII*. (<i>Vide page 3—w.</i>)</p> <p>λ 25 56 21.78 L 91 28 13.73 H 1340 h 3 No. 1</p>	<p>Jaiar Hill Tree. (<i>Khási and Jaintia Hills</i>)</p> <p>λ 25 14 25 L 91 52 44</p>
<p>Fuljeri h.s. (<i>Hill Tipperah</i>) On a long range of hills, about 3½ miles S.W. of Mungaur village.</p> <p>λ 23 15 58.26 L 91 24 52.38 Nos. 170, 171</p>	<p>Harogaon, XLII*. (<i>Vide page 3—w.</i>)</p> <p>λ 25 56 21.78 L 91 28 13.73 H 1340 h 3 No. 1</p>	<p>Jaintiápur Hill Mark (heliotrope). (<i>Sylhet</i>) On a detached hill on S. bank of the Maishuáru Bil.</p> <p>λ 25 8 26.78 L 92 10 23.23 No. 124</p>
<p>Gájipur Temple. (<i>Sylhet</i>) Long white temple.</p> <p>λ 24 14 57.8 L 91 41 43.7 No. 143</p>	<p>Hathimura, XLVI. (<i>Vide page 9—w.</i>)</p> <p>λ 23 29 23.24 L 91 35 42.14 H 331 h 5 No. 54</p>	<p>Jaintiápur Palace. (<i>Sylhet</i>) Flag near Rája's palace.</p> <p>λ 25 8 1.5 L 92 10 12.7 No. 125</p>
<p>Geahpur, XXII. (<i>Vide page 6—w.</i>)</p> <p>λ 24 38 34.01 L 91 46 19.05 H 54 h 21 No. 30</p>	<p>Hiara, XXX. (<i>Vide page 7—w.</i>)</p> <p>λ 24 16 3.10 L 91 59 4.79 H 517 h 2 No. 38</p>	<p>Jaintiápur Temple. (<i>Sylhet</i>) Pinnacle of higher dome of white temple.</p> <p>λ 25 8 8.4 L 92 10 0.5 No. 208</p>
<p>Gojalia, XLIX. (<i>Vide page 9—w.</i>)</p> <p>λ 23 9 4.76 L 91 35 58.65 H 466 h 9 No. 63</p>	<p>Hill Peak No. 1. (<i>Lushai Hills</i>)</p> <p>λ 23 51 54 L 92 47 2</p>	<p>Jaintiápur Thána (heliotrope). (<i>Sylhet</i>) Marked by a pillar.</p> <p>λ 25 8 5.09 L 92 10 3.00 No. 209</p>
	<p>Hill Peak No. 2. (<i>Hill Tipperah</i>)</p> <p>λ 23 48 47 L 92 12 3</p>	<p>Jamu, XLII. (<i>Vide page 9—w.</i>)</p> <p>λ 23 40 21.09 L 91 32 24.84 H 335 h 6 No. 52</p>

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Jari Hill Mark (heliotrope). (<i>Hill Tipperah</i>) On a distant, high hill E. of Mathimura H.S. It is a station of the Revenue Survey.</p> <p style="text-align: center;">o ' "</p> <p>λ 23 31 33·24 L 91 48 18·97 H 1355 h <i>Not forthcoming</i></p> <p style="text-align: center;">Nos. 151, 152</p>	<p>Kálikor Hill, (<i>Hill Tipperah</i>) Pole on Tula tree stem.</p> <p style="text-align: center;">o ' "</p> <p>λ 23 10 31 L 91 22 58 No. 172</p>	<p>Khineau Hill. (<i>Kháasi and Jaintia Hills</i>) Centre of scaffolding.</p> <p style="text-align: center;">o ' "</p> <p>λ 25 25 58 L 92 0 33 No. 203</p>
<p>Jeong Hill Tree. (<i>Kháasi and Jaintia Hills</i>)</p> <p>λ 25 55 17 L 91 38 8</p>	<p>Kamálpur Mark (heliotrope). (<i>Hill Tipperah</i>)</p> <p>λ 24 13 4·13 L 91 53 14·58 No. 147</p>	<p>Kolangtam Hill Tree. (<i>Cachan</i>) Centre of three trees.</p> <p>λ 25 6 11 L 92 34 11</p>
<p>Jilarpur Temple, (<i>Sylhet</i>) Northernmost, in village.</p> <p>λ 24 16 22·2 L 91 44 40·9 No. 145</p>	<p>Kampániganj Tree, (<i>Sylhet</i>) Centre of top.</p> <p>λ 25 4 7 L 91 48 13</p>	<p>Kollong Rock, (<i>Kháasi and Jaintia Hills</i>) Centre.</p> <p>λ 25 36 11·29 L 91 36 3·44 H 5805 No. 89, 90</p>
<p>Jongsjar h.s. (<i>Kháasi and Jaintia Hills</i>) About 2½ miles S. of Wapung and nearly the same distance W. of Jel-hieh village.</p> <p>λ 25 22 49·51 L 92 21 10·35 No. 190</p>	<p>Kámránga Hill Tree, (<i>Kháasi and Jaintia Hills</i>) Eastern.</p> <p>λ 25 50 29 L 91 29 53</p>	<p>Komuntah, XXXI. (<i>Vide page 7—<i>w</i>.</i>)</p> <p>λ 24 8 22·11 L 92 7 34·99 H 903 h 2 No. 41</p>
<p>Junia Hill Mark. (<i>Sylhet</i>) About a mile S.W. of Gotur bazar.</p> <p>λ 24 49 29·03 L 92 23 18·75 No. 141</p>	<p>Kandrodinghying h.s. (<i>Kháasi and Jaintia Hills</i>) About a mile W. of Shadsangi village. It is marked by a platform 8 feet square, enclosing an isolated pillar of masonry 3 feet in diameter.</p> <p>λ 25 19 4·36 L 91 56 21·44 H 4792 h 2 Nos. 109, 101</p>	<p>Kulerai Tila, XXIII. (<i>Vide page 6—<i>w</i>.</i>)</p> <p>λ 24 39 23·96 L 92 16 31·31 H 684 h 2 Nos. 25, 33, 37</p>
<p>Kailás Tila, XX. (<i>Vide page 6—<i>w</i>.</i>)</p> <p>λ 24 47 41·13 L 92 4 13·88 H 213 h 6 No. 22</p>	<p>Karínganj Hát (heliotrope). (<i>Sylhet</i>) On S. bank of the Boglia river.</p> <p>λ 24 51 57·25 L 92 24 31·62 No. 139</p>	<p>Laidera, VIII. (<i>Vide page 4—<i>w</i>.</i>)</p> <p>λ 25 30 9·99 L 91 42 48·61 H 6178 h 5 Nos. 5, 12</p>
<p>Kailesar Thána. (<i>Hill Tipperah</i>) Rájá's thána.</p> <p>λ 24 19 7·8 L 92 2 51·5</p>	<p>Kártik Tila s. (<i>Sylhet</i>) On Jhallus hill.</p> <p>λ 24 12 32·96 L 91 46 24·57 No. 144</p>	<p>Laidom h.s. (<i>Kháasi and Jaintia Hills</i>) About ¼ a mile E. of Mati, and close to and N. of Domba village.</p> <p>λ 25 36 26·85 L 91 41 28·69 No. 88</p>
<p>Kálnága Hill Peak, (<i>Manipur Hills</i>) Highest part.</p> <p>λ 24 46 51·8 L 93 19 14·9 Nos. 215, 216</p>	<p>Khandigaon, XV. (<i>Vide page 5—<i>w</i>.</i>)</p> <p>λ 25 4 48·66 L 91 55 19·60 H 50 h 15 No. 16</p>	<p>Laikensau Temple. (<i>Kháasi and Jaintia Hills</i>) On hill.</p> <p>λ 25 13 11·7 L 91 42 27·8 No. 119</p>
<p>Kálidásbári h.s. (<i>Hill Tipperah</i>) This is also a station of the Revenue Survey. It is about 1½ miles S.E. of Kálidáspára and 3 miles W. of Mungaur village.</p> <p>λ 23 17 36·63 L 91 24 22·25 H 257 h <i>Not forthcoming</i></p> <p style="text-align: center;">Nos. 166, 167</p>	<p>Khebujiing Hill Peak, (<i>Manipur Hills</i>) Distant, among the Manipur hills.</p> <p>λ 24 55 8 L 93 32 43</p>	

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.																										
Lailangkot h.s. <i>(Khási and Jaintia Hills)</i> In village, about $\frac{1}{2}$ of a mile W. of Mauyong. <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 26 17.31</td></tr> <tr><td>L</td><td>91 52 49.46</td></tr> </table>	λ	25 26 17.31	L	91 52 49.46	Langpathau Hill Mark (heliotrope). <i>(Khási and Jaintia Hills)</i> About $\frac{1}{4}$ a mile E. of village of the same name. <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 36 58.20</td></tr> <tr><td>L</td><td>91 53 39.30</td></tr> <tr><td colspan="2" style="text-align: center;">No. 85</td></tr> </table>	λ	25 36 58.20	L	91 53 39.30	No. 85		Maiang, XLV*. <i>(Kámráp)</i> Known also as Budamoin, is on a rather flat-topped hill at the N.W. extremity of the low range of hills extending northward from the Khási plateau, about 6 miles S.E. of the famed temple on Kámáksha hill, between which and this hill is a very extensive jhil, 2 miles W. of Dhasdal, where a hat is held, 2 miles S. of Sakradal, and 4 miles E. of road from Gauháti to Cherra Poonjee; mauza Ráni, tháun Gauháti. It is marked by a solid, isolated pillar built around a rock <i>in situ</i> , on which the usual mark of a circle and dot is engraved, surrounded by a platform 1.77 feet high. <table style="margin-left: 20px;"> <tr><td>λ</td><td>26 5 47.72</td></tr> <tr><td>L</td><td>91 41 40.58</td></tr> <tr><td>H</td><td>1040</td></tr> <tr><td>h</td><td>2</td></tr> <tr><td colspan="2" style="text-align: center;">No. 75</td></tr> </table>	λ	26 5 47.72	L	91 41 40.58	H	1040	h	2	No. 75							
λ	25 26 17.31																											
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No. 75																												
Laitbli h.s. <i>(Khási and Jaintia Hills)</i> About $\frac{1}{4}$ a mile N.E. of Maulong, $\frac{1}{4}$ miles E. of Sanshinong and $\frac{1}{4}$ miles W. of Nongbri village. It is marked by a platform. <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 32 56.13</td></tr> <tr><td>L</td><td>91 41 39.42</td></tr> <tr><td>H</td><td>5946</td></tr> <tr><td>h</td><td>2</td></tr> <tr><td colspan="2" style="text-align: center;">Nos. 86, 87</td></tr> </table>	λ	25 32 56.13	L	91 41 39.42	H	5946	h	2	Nos. 86, 87		Langper h.s. <i>(Khási and Jaintia Hills)</i> About $\frac{1}{4}$ a mile N. of Maupukaih, 1 mile S.W. of Liam, and close to and E. of road from Tharia Ghát to Cherra Poonjee. <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 13 20.95</td></tr> <tr><td>L</td><td>91 46 52.10</td></tr> <tr><td colspan="2" style="text-align: center;">No. 117</td></tr> </table>	λ	25 13 20.95	L	91 46 52.10	No. 117												
λ	25 32 56.13																											
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Lakhiprasád Masjid. <i>(Sylhet)</i> <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 2 39.5</td></tr> <tr><td>L</td><td>92 20 22.3</td></tr> <tr><td colspan="2" style="text-align: center;">No. 132</td></tr> </table>	λ	25 2 39.5	L	92 20 22.3	No. 132		Larai h.s. <i>(Khási and Jaintia Hills)</i> About 1 mile S. of Nonglando, the same distance N.E. of Nongkhra village and $\frac{1}{2}$ of a mile E. of road from Shillong to Gauháti. <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 56 46.03</td></tr> <tr><td>L</td><td>91 55 40.24</td></tr> <tr><td colspan="2" style="text-align: center;">Nos. 76, 76</td></tr> </table>	λ	25 56 46.03	L	91 55 40.24	Nos. 76, 76		Mairang Bungalow, <i>(Khási and Jaintia Hills)</i> Centre of chimney. <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 34 7.8</td></tr> <tr><td>L</td><td>91 41 1.9</td></tr> <tr><td colspan="2" style="text-align: center;">No. 91</td></tr> </table>	λ	25 34 7.8	L	91 41 1.9	No. 91									
λ	25 2 39.5																											
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Lakhipur Thána (heliotrope). <i>(Cachar)</i> <table style="margin-left: 20px;"> <tr><td>λ</td><td>24 47 29.61</td></tr> <tr><td>L</td><td>93 2 42.77</td></tr> <tr><td colspan="2" style="text-align: center;">Nos. 213, 214</td></tr> </table>	λ	24 47 29.61	L	93 2 42.77	Nos. 213, 214		Laringau h.s. <i>(Khási and Jaintia Hills)</i> About $\frac{1}{4}$ of a mile S.E. of village so called and a little over a mile N. of Laimosiang. It is marked by a platform. <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 19 15.81</td></tr> <tr><td>L</td><td>91 47 15.18</td></tr> <tr><td>H</td><td>5454</td></tr> <tr><td>h</td><td>2</td></tr> <tr><td colspan="2" style="text-align: center;">Nos. 98, 99</td></tr> </table>	λ	25 19 15.81	L	91 47 15.18	H	5454	h	2	Nos. 98, 99		Mairang h.s. <i>(Khási and Jaintia Hills)</i> Close to and W. of the bungalow and about $\frac{1}{4}$ a mile N. of Pundem Unnong village. <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 34 6.41</td></tr> <tr><td>L</td><td>91 41 1.01</td></tr> <tr><td>H</td><td>5657</td></tr> <tr><td>h</td><td>Not forthcoming</td></tr> <tr><td colspan="2" style="text-align: center;">No. 92</td></tr> </table>	λ	25 34 6.41	L	91 41 1.01	H	5657	h	Not forthcoming	No. 92	
λ	24 47 29.61																											
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Lambusara, XXXVIII. <i>(Vide page 8—w.)</i> <table style="margin-left: 20px;"> <tr><td>λ</td><td>23 54 22.78</td></tr> <tr><td>L</td><td>91 21 34.32</td></tr> <tr><td>H</td><td>190</td></tr> <tr><td>h</td><td>5</td></tr> <tr><td colspan="2" style="text-align: center;">Nos. 48, 50</td></tr> </table>	λ	23 54 22.78	L	91 21 34.32	H	190	h	5	Nos. 48, 50		Larjmarkham Hill Mark (heliotrope). <i>(Khási and Jaintia Hills)</i> About 1 mile S.W. of Manrad village. <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 27 26.91</td></tr> <tr><td>L</td><td>91 35 38.08</td></tr> <tr><td colspan="2" style="text-align: center;">No. 94</td></tr> </table>	λ	25 27 26.91	L	91 35 38.08	No. 94		Mama Bhagna Tila, XXVI. <i>(Vide page 7—w.)</i> <table style="margin-left: 20px;"> <tr><td>λ</td><td>24 50 55.93</td></tr> <tr><td>L</td><td>92 12 14.93</td></tr> <tr><td>H</td><td>93</td></tr> <tr><td>h</td><td>12</td></tr> <tr><td colspan="2" style="text-align: center;">No. 33</td></tr> </table>	λ	24 50 55.93	L	92 12 14.93	H	93	h	12	No. 33	
λ	23 54 22.78																											
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Landau Linshing Hill Mark. <i>(Khási and Jaintia Hills)</i> About 1 mile E. of Indria and $\frac{1}{4}$ miles N. of village of the same name. <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 24 21.87</td></tr> <tr><td>L</td><td>92 2 39.25</td></tr> <tr><td colspan="2" style="text-align: center;">No. 204</td></tr> </table>	λ	25 24 21.87	L	92 2 39.25	No. 204		Láur Hill Tree. <i>(Khási and Jaintia Hills)</i> Centre of 3 trees on the highest part of the hill. <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 12 44</td></tr> <tr><td>L</td><td>91 16 18</td></tr> </table>	λ	25 12 44	L	91 16 18	Manirámánáth Temple. <i>(Tipperah)</i> About 6 miles N.W. by W. of the town of Comillah. <table style="margin-left: 20px;"> <tr><td>λ</td><td>23 29 10.3</td></tr> <tr><td>L</td><td>91 9 8.6</td></tr> </table>	λ	23 29 10.3	L	91 9 8.6												
λ	25 24 21.87																											
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λ	23 29 10.3																											
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Landau Modo, IV. <i>(Vide page 4—w.)</i> <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 40 19.47</td></tr> <tr><td>L</td><td>91 26 55.59</td></tr> <tr><td>H</td><td>5163</td></tr> <tr><td>h</td><td>4</td></tr> <tr><td colspan="2" style="text-align: center;">No. 9</td></tr> </table>	λ	25 40 19.47	L	91 26 55.59	H	5163	h	4	No. 9		Lauraga Tila, XXIV. <i>(Vide page 6—w.)</i> <table style="margin-left: 20px;"> <tr><td>λ</td><td>24 26 28.95</td></tr> <tr><td>L</td><td>91 49 15.42</td></tr> <tr><td>H</td><td>196</td></tr> <tr><td>h</td><td>2</td></tr> <tr><td colspan="2" style="text-align: center;">Nos. 27, 31</td></tr> </table>	λ	24 26 28.95	L	91 49 15.42	H	196	h	2	Nos. 27, 31		Mauda Hill Mark. <i>(Khási and Jaintia Hills)</i> At junction of two ranges of hills, about 1 mile N.E. of the Risinja river. <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 43 11.98</td></tr> <tr><td>L</td><td>91 30 39.11</td></tr> <tr><td colspan="2" style="text-align: center;">Nos. 77, 78</td></tr> </table>	λ	25 43 11.98	L	91 30 39.11	Nos. 77, 78	
λ	25 40 19.47																											
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Nos. 77, 78																												
Langhít Hill Tree. <i>(Khási and Jaintia Hills)</i> <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 50 42</td></tr> <tr><td>L</td><td>91 34 55</td></tr> </table>	λ	25 50 42	L	91 34 55	Lengura Masjid. <i>(Sylhet)</i> Near thána. <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 5 41.9</td></tr> <tr><td>L</td><td>92 1 21.6</td></tr> <tr><td colspan="2" style="text-align: center;">No. 127</td></tr> </table>	λ	25 5 41.9	L	92 1 21.6	No. 127		Maujuth Hill Mark (heliotrope). <i>(Khási and Jaintia Hills)</i> About $\frac{1}{4}$ of a mile N.E. of Mokong and 1 mile S.E. of Umjilang village. <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 42 17.32</td></tr> <tr><td>L</td><td>91 15 16.50</td></tr> <tr><td colspan="2" style="text-align: center;">No. 82</td></tr> </table>	λ	25 42 17.32	L	91 15 16.50	No. 82											
λ	25 50 42																											
L	91 34 55																											
λ	25 5 41.9																											
L	92 1 21.6																											
No. 127																												
λ	25 42 17.32																											
L	91 15 16.50																											
No. 82																												
Langnai s. <i>(Khási and Jaintia Hills)</i> On a low hill between the deserted village of Langnai on W. face and another small village of the same name on E. face. It is marked by a stone, with the usual circle and dot, embedded in the ground. <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 20 52.34</td></tr> <tr><td>L</td><td>92 7 31.71</td></tr> <tr><td colspan="2" style="text-align: center;">No. 206</td></tr> </table>	λ	25 20 52.34	L	92 7 31.71	No. 206		Mahúdeo Temple, <i>(Khási and Jaintia Hills)</i> Guard, on hill. <table style="margin-left: 20px;"> <tr><td>λ</td><td>25 12 37.4</td></tr> <tr><td>L</td><td>91 47 5.4</td></tr> <tr><td colspan="2" style="text-align: center;">No. 120</td></tr> </table>	λ	25 12 37.4	L	91 47 5.4	No. 120																
λ	25 20 52.34																											
L	92 7 31.71																											
No. 206																												
λ	25 12 37.4																											
L	91 47 5.4																											
No. 120																												

* Of the Assam Longitudinal Series.

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Maulang h.s. <i>(Kháisi and Jaintia Hills)</i> About 1½ miles N.E. of Mausea and the same distance S.W. of Sanknai village. It is marked by a platform.	Mausiar h.s. <i>(Kháisi and Jaintia Hills)</i> About 1 mile S.W. of Thandrusáo and the same distance N.W. of Pomsiao village. It is marked by a platform.	Molágul Masjid. <i>(Sythet)</i>
λ 25 21 31·85 L 92 6 47·23 No. 181	λ 25 25 28·94 L 92 6 48·68 No. 180	λ 25 3 7·2 L 92 22 40·8 No. 181
Maupahnang h.s. <i>(Kháisi and Jaintia Hills)</i> About 1 mile due N. of Nongtsiang village. It is marked by a platform.	Mautherrichan, VII. <i>(Vide page 4—w.)</i>	Molágul Thána (heliotrope). <i>(Sythet)</i> On Jurijarah Tíla, about midway between the Surma river and Khukhokuri Bil.
λ 25 13 23·04 L 92 7 0·29 Nos. 116, 184	λ 25 32 22·97 L 91 29 52·19 H 6288 h 4 No. 11	λ 25 1 41·40 L 92 21 2·12 No. 128
Maupahnang Hill Tree. <i>(Kháisi and Jaintia Hills)</i>	Mautiar Hill Mark. <i>(Kháisi and Jaintia Hills)</i> About 1 mile W. of the Jung Kerthem river.	Molim Temple. <i>(Kháisi and Jaintia Hills)</i> Kháisi white temple.
λ 25 13 24 L 92 7 1	λ 25 23 37·82 L 92 14 59·10 No. 194	λ 25 29 56·9 L 91 52 58·8 No. 93
Maupáni, V. <i>(Vide page 4—w.)</i>	Mayna Mati h.s. <i>(Tipperah)</i> About ½ mile W. of the Gomati river and 5 miles N.W. of Comillah.	Mopen, XII. <i>(Vide page 5—w.)</i>
λ 25 41 55·82 L 91 36 56·71 H 4612 h 26 Nos. 3, 10	λ 23 29 44·02 L 91 9 5·88 No. 154	λ 25 13 43·16 L 91 28 38·56 H 2581 h 3 No. 18
Maupat Hill Tree. <i>(Kháisi and Jaintia Hills)</i>	Merpa Tíla, XXIX. <i>(Vide page 7—w.)</i>	Mopon, II. <i>(Vide page 4—w.)</i>
λ 25 36 28 L 91 57 50	λ 25 1 45·23 L 92 23 7·63 H 263 h 2 No. 35	λ 25 47 41·72 L 91 23 30·77 H 2290 h 2 No. 8
Maurkhap h.s. <i>(Kháisi and Jaintia Hills)</i> About 1½ miles E. of road from Tharia Ghát to Cherra Poonjee.	Mirgala Tíla Mark (heliotrope). <i>(Sythet)</i>	Mosingi, IX. <i>(Vide page 6—w.)</i>
λ 25 15 15·26 L 91 47 48·96 Nos. 104, 105	λ 24 31 16·42 L 91 38 34·09 No. 142	λ 25 20 33·35 L 91 37 49·37 H 5802 h 9 Nos. 7, 18
Maurhengdep h.s. <i>(Kháisi and Jaintia Hills)</i> On W. extremity of a long hill running E. and W. and isolated by a deep ravine on all sides from the surrounding hills of the Kháisi plateau. The villages of Longing, Sorankham and Nontrao are to the west of the hill, about ½ of a mile, across a ravine. It is marked by an isolated pillar 3 feet in diameter which is surrounded by a platform 8 feet square and 1 foot high, having in its centre the usual circle and dot inscribed on a stone extending from the surface of the hill to that of the pillar.	Moffong Bungalow, <i>(Kháisi and Jaintia Hills)</i> Chimney.	Mun, X. <i>(Vide page 6—w.)</i>
λ 25 32 17·87 L 92 0 59·62 No. 178	λ 25 27 9·1 L 91 48 5·5	λ 25 24 42·14 L 91 52 33·65 H 6212 h 8 No. 6
Mausalur h.s. <i>(Kháisi and Jaintia Hills)</i> On a flat-topped hill, about ¼ a mile N. of the Umlu river. It is marked by a platform.	Mokerson, I. <i>(Vide page 4—w.)</i>	Murphuta Tíla, LI. <i>(Vide page 10—w.)</i>
λ 25 29 55·07 L 92 3 30·29 No. 179	λ 25 49 0·77 L 91 31 59·72 H 1655 h 2 No. 1	λ 24 49 12·61 L 92 36 15·35 H 575 h 3 No. 66
	Moknang Village (heliotrope). <i>(Kháisi and Jaintia Hills)</i>	
	λ 25 30 8·41 L 91 42 13·70 H 6092 h Not forthcoming	

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Nagarkhāna No. 1 h.s. (<i>Sylhet</i>) About 20 feet distant from Merarphink tomb.</p> <p>λ 25 2 33'05 L 92 22 52'86 No. 129</p>	<p>Noroug Hill Mark. (<i>Khāsi and Jaintia Hills</i>) Close to and W. of village of the same name.</p> <p>λ 25 20 16'14 L 92 3 55'58 No. 205</p>	<p>Rangsanobo, XI. (<i>Vide page 5—w.</i>)</p> <p>λ 25 15 19'60 L 91 45 48'04 H 4455 h 3 No. 14</p>
<p>Nagarkhāna No. 2 h.s. (<i>Sylhet</i>) Or Base station No. 2.</p> <p>λ 25 2 30'04 L 92 22 41'10 No. 130</p>	<p>Nunklo h.s. (<i>Khāsi and Jaintia Hills</i>) About 17 feet E. of Dāk Bungalow. It is marked on the rock <i>in situ</i>.</p> <p>λ 25 41 8'16 L 91 40 59'77 No. 83</p>	<p>Rokhia, XLIII. (<i>Vide page 9—w.</i>)</p> <p>λ 23 35 33'70 L 91 16 33'42 H 284 h 6 No. 57</p>
<p>Nangjinghi Hill Mark. (<i>Khāsi and Jaintia Hills</i>) On a ridge, about $\frac{1}{2}$ of a mile S. of village of the same name.</p> <p>λ 25 33 52'54 L 92 18 59'14 No. 193</p>	<p>Orthoki Tila, XIX. (<i>Vide page 6—w.</i>)</p> <p>λ 24 49 16'24 L 91 51 41'35 H 98 h 4 Nos. 23, 29</p>	<p>Subaisara, XXXIV. (<i>Vide page 8—w.</i>)</p> <p>λ 24 9 1'86 L 91 39 14'13 H 175 h 6 Nos. 44, 45</p>
<p>Nangpadeo Hill Mark. (<i>Khāsi and Jaintia Hills</i>) On an extensive ridge running N.E. and S.W., about a mile W. of village of the same name and $\frac{1}{4}$ miles S. of junction of the Um Song with the Mangut river.</p> <p>λ 25 16 52'29 L 92 3 30'49 No. 207</p>	<p>Pakibar Tila, XXI. (<i>Vide page 6—w.</i>)</p> <p>λ 24 39 31'96 L 91 58 26'18 H 194 h 3 No. 24</p>	<p>Sāhebmura, XLVIII. (<i>Vide page 9—w.</i>)</p> <p>λ 23 21 58'30 L 91 40 54'02 H 493 h 7 Nos. 61, 62</p>
<p>Nemotha, LIV. (<i>Vide page 10—w.</i>)</p> <p>λ 25 1 11'55 L 92 51 40'39 H 3627 h 2 Nos. 70, 71</p>	<p>Palangborsing h.s. (<i>Khāsi and Jaintia Hills</i>) On the Coal Mine hill, near Rangsanobo H.S.</p> <p>λ 25 15 34'69 L 91 45 45'32 Nos. 102, 103</p>	<p>Saisum, XXXIX. (<i>Vide page 8—w.</i>)</p> <p>λ 23 49 40'31 L 91 36 17'64 H 811 h 5 No. 47</p>
<p>Neng, XLIV. (<i>Vide page 9—w.</i>)</p> <p>λ 23 34 53'64 L 91 24 58'60 H 206 h 4 Nos. 63, 58</p>	<p>Panchratan Temple. (<i>Tipperah</i>) About 5 miles N.W. of the town of Comilla.</p> <p>λ 23 30 15'0 L 91 10 54'1 Nos. 159, 160</p>	<p>Sakan Hill Tree. (<i>Hill Tipperah</i>)</p> <p>λ 24 14 59 L 92 7 4</p>
<p>Nihālbāri Hill Mark. (<i>Hill Tipperah</i>) Revenue Survey station, about $\frac{1}{4}$ miles W. of Misigpura village.</p> <p>λ 23 24 37'09 L 91 37 18'78 H 380 h <i>Not forthcoming</i> No. 164</p>	<p>Rableng h.s. (<i>Khāsi and Jaintia Hills</i>) A little over a mile E. of Laimuwa village. It is marked by a platform.</p> <p>λ 25 28 20'04 L 91 58 0'77 H 6274 h 1 No. 177</p>	<p>Sakau Hill Tree. (<i>Khāsi and Jaintia Hills</i>)</p> <p>λ 25 41 19 L 91 39 35</p>
<p>Nongkem h.s. (<i>Khāsi and Jaintia Hills</i>) About $\frac{1}{4}$ of a mile E. of road from Jaintiapur to Jowai. It is marked by a platform.</p> <p>λ 25 12 5'34 L 92 11 49'79 No. 185</p>	<p>Ramphan, LV. (<i>Vide page 10—w.</i>)</p> <p>λ 24 48 8'65 L 93 5 52'03 H 671 h 3 No. 72</p>	<p>Salama Tila, LIII. (<i>Vide page 10—w.</i>)</p> <p>λ 24 51 7'72 L 92 51 4'11 H 222 h 2 No. 69</p>

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Sapedbenang h.s. (<i>Khási and Jaintia Hills</i>) On the highest part of the hill, about 2 miles W. of Umrai and 1½ miles S.W. of Maulau village.</p> <p>λ 25 42 28·99 L 91 58 0·16 No. 81</p>	<p>Somullon h.s. (<i>Khási and Jaintia Hills</i>) Also called Shillong. On E. extremity of a long ridge, about 1 mile W. of Laithor and the same distance S. of Nong Mulki village.</p> <p>λ 25 32 37·49 L 91 55 33·32 H 6426 h 2 No. 176</p>	<p>Tepkilabama, XLIV*. (<i>Vide page 3—w.</i>)</p> <p>λ 25 56 22·19 L 91 36 52·97 H 2388 h 2 No. 1</p>
<p>Sataratan Temple (heliotrope). (<i>Tipperah</i>) Comillah.</p> <p>λ 23 27 41·47 L 91 15 16·92 Nos. 162, 163</p>	<p>Sonarája Hill Mark (heliotrope). (<i>Khási and Jaintia Hills</i>)</p> <p>λ 25 7 17·47 L 92 22 32·87 No. 202</p>	<p>Thakuni h.s. (<i>Khási and Jaintia Hills</i>) About 1½ miles N.W. of Simunting village. It is marked by a platform.</p> <p>λ 25 27 34·20 L 92 10 13·45 Nos. 187, 188</p>
<p>Selim h.s. (<i>Khási and Jaintia Hills</i>) About 1½ miles N.W. of Rangat village and about midway between the rivers Um Raliang and Mantedu. It is marked by a platform.</p> <p>λ 25 20 52·23 L 92 14 55·49 No. 182</p>	<p>Sonariang Hill Mark. (<i>Khási and Jaintia Hills</i>) On site of deserted village, about 1½ miles S. of Rangat village and ¼ mile S.W. of the Lannani river.</p> <p>λ 25 18 52·95 L 92 15 50·32 Nos. 197, 198</p>	<p>Thampianai h.s. (<i>Khási and Jaintia Hills</i>) On a branch of the Kahira river, about 1 mile S. of Wasarang and 3 miles S.E. of Rangat village.</p> <p>λ 25 18 27·96 L 92 18 32·67 Nos. 191, 192</p>
<p>Shillong h.s. (<i>Khási and Jaintia Hills</i>) On W. extremity of a long ridge, about 1½ miles W. of Pomlakrai and 2½ miles E. of Nongpair village.</p> <p>λ 25 31 48·84 L 91 53 36·83 H 6441 h 1 Nos. 79, 80</p>	<p>Sonoriang h.s. (<i>Khási and Jaintia Hills</i>) About ¼ of a mile W. of the large village of Laluber, and midway between the Wa Sagbo and Mosui rivers. It is marked by a platform.</p> <p>λ 25 25 49·82 L 92 19 4·05 No. 189</p>	<p>Thanjináth, XIII. (<i>Vide page 6—w.</i>)</p> <p>λ 25 17 38·45 L 91 56 28·39 H 4440 h 3 No. 15</p>
<p>Singarbir Temple. (<i>Tipperah</i>) White, high temple in village.</p> <p>λ 23 53 26·6 L 91 10 24·8 No. 148</p>	<p>Suair h.s. (<i>Khási and Jaintia Hills</i>) About ¼ a mile W. of village of the same name and 2 miles N. of Rangtama. It is marked by a platform.</p> <p>λ 25 25 2·75 L 91 50 18·10 H 6380 h 3 Nos. 96, 97</p>	<p>Tharayuang h.s. (<i>Khási and Jaintia Hills</i>) About ¼ a mile S. E. of the Laterkap river. It is marked by a platform.</p> <p>λ 25 16 10·74 L 92 24 49·86 No. 201</p>
<p>Skumletap h.s. (<i>Khási and Jaintia Hills</i>) Or Skumtenap. About 2½ miles S.E. of Thangbuli village.</p> <p>λ 25 16 35·79 L 92 13 32·19 No. 183</p>	<p>Sylhet Church, (<i>Sylhet</i>) N.W. Spire of steeple.</p> <p>λ 24 53 21·8 L 91 54 40·7 Nos. 135, 136</p>	<p>Thubong Masjid. (<i>Sylhet</i>)</p> <p>λ 25 5 46·7 L 92 12 19·7</p>
<p>Sniang Hill Mark (heliotrope). (<i>Khási and Jaintia Hills</i>) On a ridge, about 1½ miles W. of Nongiong rock and 1½ miles E. of Nongkro village.</p> <p>λ 25 38 20·53 L 91 24 46·74 No. 84</p>	<p>Taramun Tíla, XIV. (<i>Vide page 6—w.</i>)</p> <p>λ 25 2 44·23 L 91 41 58·06 H 144 h 5 Nos. 17, 19</p>	<p>Tilaghari Temple, (<i>Sylhet</i>) Spire.</p> <p>λ 24 54 0·6 L 91 56 56·2 No. 134</p>
<p>Sogaria, XLVII. (<i>Vide page 9—w.</i>)</p> <p>λ 23 17 45·25 L 91 33 21·66 H 285 h 3 No. 60</p>	<p>Tukhai, LVI. (<i>Vide page 10—w.</i>)</p> <p>λ 25 0 56·38 L 93 9 6·15 H 3166 h 3 Nos. 73, 74</p>	<p>Tipperah Hill Peak. (<i>Hill Tipperah</i>)</p> <p>λ 24 22 45 L 92 9 38</p>

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Tulamura, L. (<i>Vide page 10—w.</i>)</p> <p>λ 23 11 32' 25 L 91 48 7' 97 H 756 h 4 Nos. 64, 65</p>	<p>Tutisikar Tīla s. (<i>Sylhet</i>) On a detached hill about $\frac{1}{4}$ of a mile N.E. of Amber Khāna bazar. It is marked by a platform.</p> <p>λ 24 54 24' 50 L 91 55 21' 53 No. 133</p>	<p>Umter, III. (<i>Vide page 4—w.</i>)</p> <p>λ 25 46 48' 51 L 91 43 1' 34 H 3367 h 6 No. 2</p>
<p>Tulerai h.s. (<i>Hill Tipperah</i>) On a long range of hills, about 3 miles E. of the high road from Comillah to Chittagong and 1 mile N.E. of Sahun village.</p> <p>λ 23 13 27' 39 L 91 24 13' 74 No. 168</p>	<p>Uarmoli Hill Tree. (<i>Khāsi and Jaintia Hills</i>) Between two rocks.</p> <p>λ 25 43 1 L 91 9 18' 48</p>	<p>Yáo h.s. (<i>Khāsi and Jaintia Hills</i>) About 100 yards S.W. of Jowai thāna.</p> <p>λ 25 26 5' 46 L 92 14 19' 86 No. 195</p>
<p>Tulīpa Tīla Hill Mark. (<i>Hill Tipperah</i>) Revenue Survey station, about 2 miles S.E. of Tīlambāri and nearly the same distance E. of Satīrámpāra village.</p> <p>λ 23 21 16' 38 L 91 31 53' 23 No. 165</p>	<p>Umoi Bungalow. (<i>Khāsi and Jaintia Hills</i>) Chimney of a deserted bungalow.</p> <p>λ 25 20 38' 3 L 92 11 47' 7 No. 196</p>	

May 1880.

J. B. N. HENNESSEY,
In charge of Computing Office.

oHill Peck N^o1

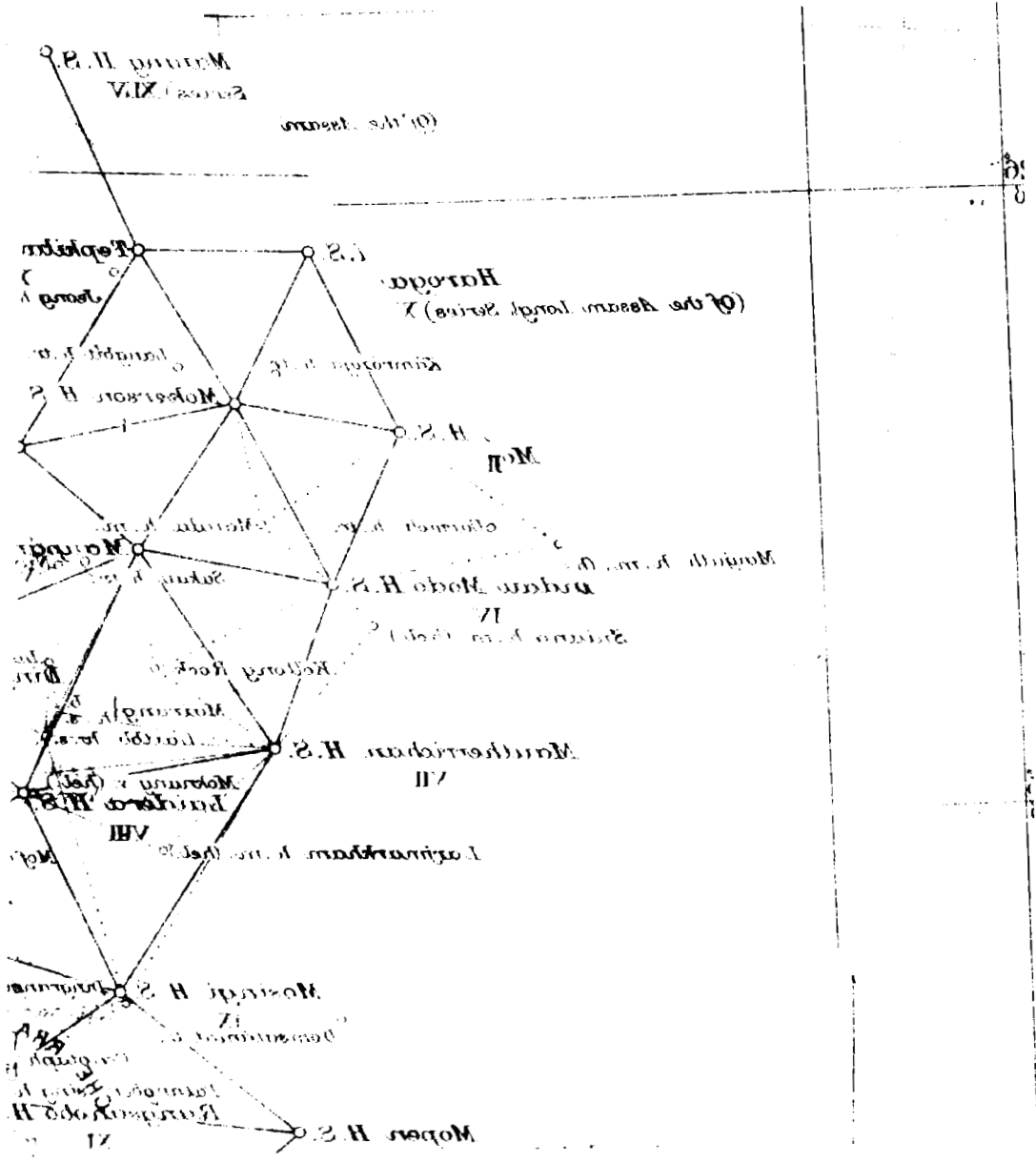
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SECTION 23° TO 26°

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SERIES W

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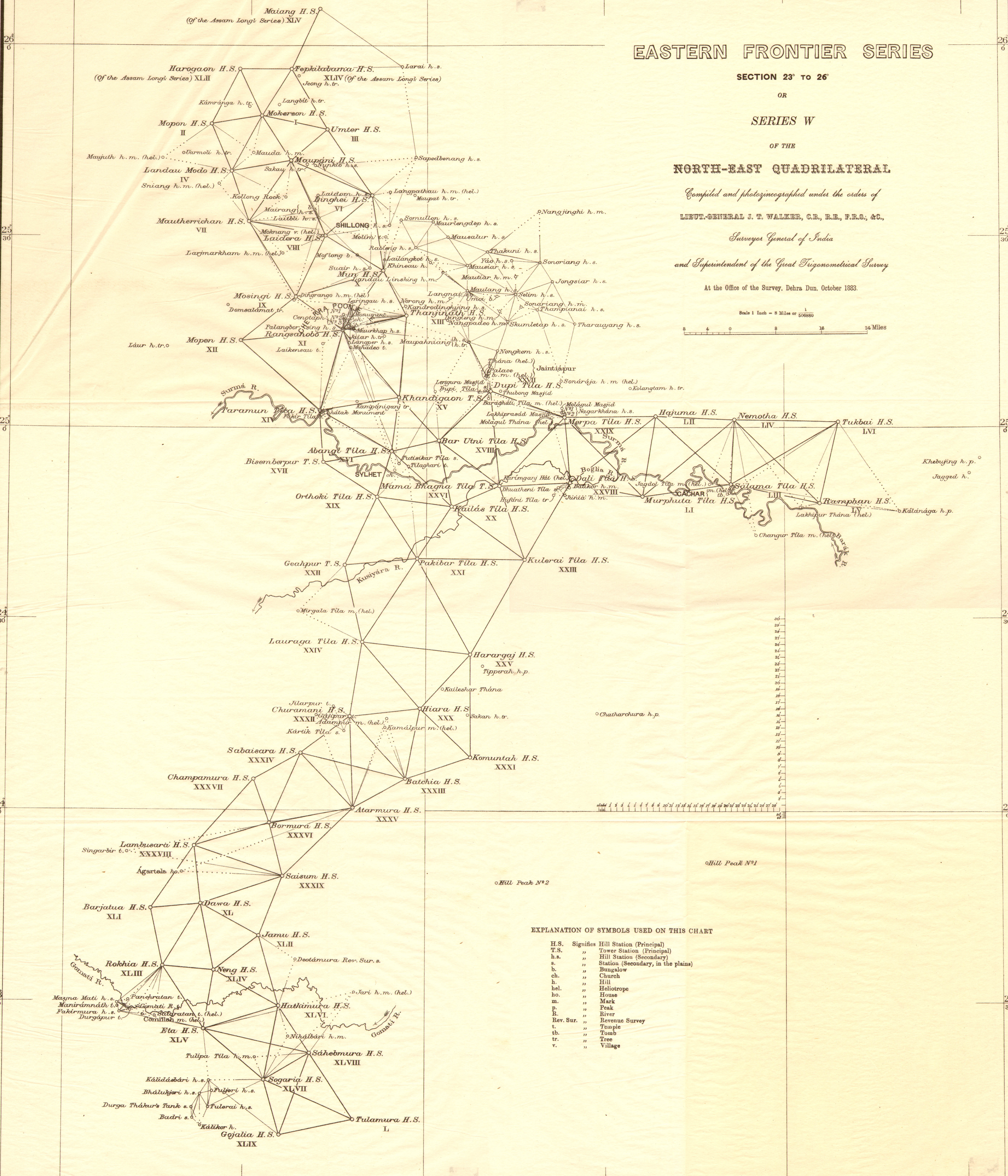
Surveyor General of India

and Superintendent of the Great Trigonometrical Survey

At the Office of the Survey, Dehra Dun, October 1883.

Scale 1 Inch = 8 Miles or 50880

0 4 8 16 24 Miles



EXPLANATION OF SYMBOLS USED ON THIS CHART

- H.S. Signifies Hill Station (Principal)
- T.S. " Tower Station (Principal)
- h.s. " Hill Station (Secondary)
- s. " Station (Secondary, in the plains)
- b. " Bungalow
- ch. " Church
- h. " Hill
- hel. " Heliotrope
- ho. " House
- m. " Mark
- p. " Peak
- R. " River
- Rev. Sur. " Revenue Survey
- t. " Temple
- tb. " Tomb
- tr. " Tree
- v. " Village

List of Published Works of the Great Trigonometrical Survey of India.

- An Account of the Measurement of an Arc of the meridian between the parallels of $18^{\circ} 3'$ and $24^{\circ} 7'$, being a continuation of the Grand Meridional Arc of India as detailed by the late Lieutenant-Colonel Lambton in the Volumes of the Asiatic Society of Calcutta. By Captain George Everest, of the Bengal Artillery, F.R.S., &c. London, 1830.
- An Account of the Measurement of two Sections of the Meridional Arc of India, bounded by the parallels of $18^{\circ} 3' 5''$; $24^{\circ} 7' 11''$; and $29^{\circ} 30' 18''$. By Lieutenant-Colonel Everest, F.R.S., &c., late Surveyor General of India, and his Assistants. London, 1847.
-

Account of the Operations of the Great Trigonometrical Survey of India.

- Volume I. The Standards of Measure and the Base-Lines, also an Introductory Account of the early Operations of the Survey, during the period of 1800-1830. By Colonel J. T. Walker, R.E., F.R.S., &c., &c., Superintendent of the Survey. Dehra Dún, 1870.
- Do. II. History and General Description of the Principal Triangulation and of its Reduction. By Colonel J. T. Walker, C.B., R.E., F.R.S., &c., &c., Surveyor General of India and Superintendent of the Survey, and his Assistants. Dehra Dún, 1879.
- Do. III. The Principal Triangulation, the Base-Line Figures, the Karáchi Longitudinal, N.W. Himalaya, and Great Indus Series of the North-West Quadrilateral. By Colonel J. T. Walker, R.E., F.R.S., &c., &c., Superintendent of the Survey, and his Assistants. Dehra Dún, 1873.
- Do. IV. The Principal Triangulation, the Great Arc (Section 24° - 30°), Rahún, Gurhággarh and Jogí-Tíla Meridional Series, and the Sutlej Series of the North-West Quadrilateral. By Colonel J. T. Walker, R.E., F.R.S., &c., &c., Superintendent of the Survey, and his Assistants. Dehra Dún, 1876.
- Do. V. Details of the Pendulum Operations by Captains J. P. Basevi, R.E., and W. J. Heaviside, R.E., and of their Reduction. Prepared under the directions of Major-General J. T. Walker, C.B., R.E., F.R.S., &c., &c., Surveyor General of India and Superintendent of the Trigonometrical Survey. Dehra Dún and Calcutta, 1879.
- Do. VI. The Principal Triangulation of the South-East Quadrilateral including the Great Arc—Section 18° to 24° , the East Coast Series, the Calcutta and the Bider Longitudinal Series, the Jabalpur and the Biláspur Meridional Series, and the Details of their Simultaneous Reduction. Prepared under the directions of Major-General J. T. Walker, C.B., R.E., F.R.S., &c., &c., Surveyor General of India and Superintendent of the Trigonometrical Survey. Dehra Dún, 1880.

List of Published Works of the Great Trigonometrical Survey of India—(Continued).

Account of the Operations of the Great Trigonometrical Survey of India—(Continued).

- Volume VII. General Description of the Principal Triangulation of the North-East Quadrilateral including the Simultaneous Reduction and the Details of Five of the Component Series, the North-East Longitudinal, the Budhon Meridional, the Rangir Meridional, the Amua Meridional, and the Karára Meridional. Prepared under the directions of Lieutenant-General J. T. Walker, C.B., R.E., F.R.S., &c., &c., Surveyor General of India and Superintendent of the Trigonometrical Survey. Dehra Dún, 1882.
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