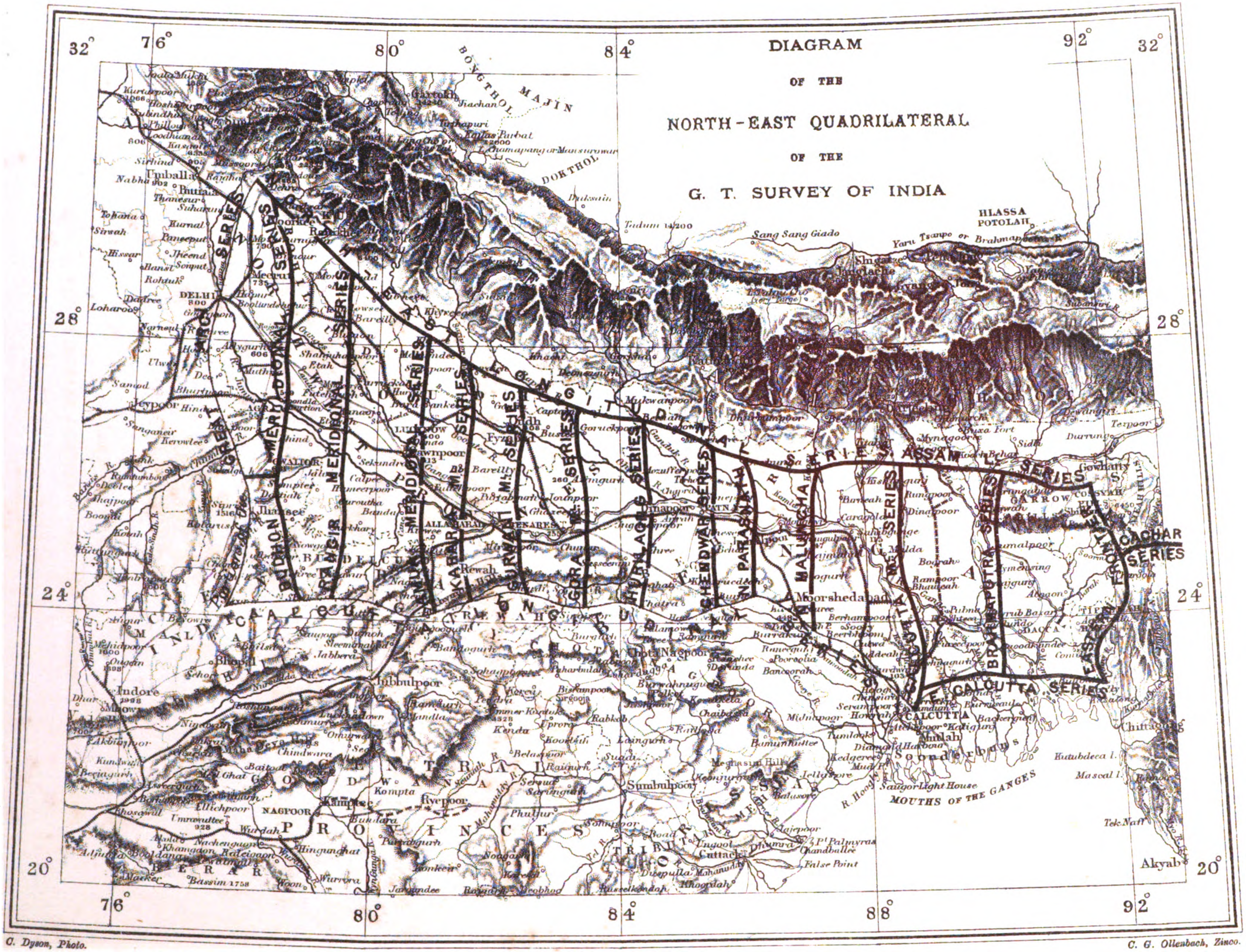

C. Dyson, Photo. C. G. Ollenbach, Zinco.

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SYNOPSIS OF THE RESULTS OF THE OPERATIONS OF

THE GREAT TRIGONOMETRICAL SURVEY OF INDIA

VOLUME XX.

DESCRIPTIONS AND CO-ORDINATES

OF THE

PRINCIPAL AND SECONDARY STATIONS AND OTHER FIXED POINTS OF

THE CALCUTTA MERIDIONAL SERIES

OR SERIES T

AND THE BRAHMAPUTRA MERIDIONAL SERIES

OR SERIES V

OF THE

NORTH-EAST QUADRILATERAL.

PREPARED BY

J. B. N. HENNESSEY, M.A., F.R.S., &c., OFFG. DEPUTY SURVEYOR GENERAL,

IN CHARGE OF TRIGONOMETRICAL SURVEYS, AND HIS ASSISTANTS,

AND PUBLISHED UNDER THE ORDERS OF

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B. V. HUGHES.

1883.

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CALCUTTA MERIDIONAL SERIES.

Page				
6—$_{T.}$	line 26 from top	*for* consists	*read* consisted
7—$_{T.}$	„ 25 „	„ 1878	„ 1872

BRAHMAPUTRA MERIDIONAL SERIES.

6—$_{V.}$	line 5 from bottom	*for* larger	*read* longer
33—$_{V.}$	description of Nagarpur House No. 1	„ N. W. angle of a paka house with a castellated turret.	„ N. W. angle of a castellated turret on a paka house.

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: these 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.

August, 1883.

W. H. COLE,
In charge of Computing Office.

PREFACE.

The Calcutta and the Brahmaputra Meridional Series are the eleventh and the twelfth meridional series from the west 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. Gurhágarh Meridional Series.
V. Rahún Meridional Series.
VI. Jogí-Tíla and Sutlej Series.
VII. North-West Himalaya Series.

} Already published.

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.

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

XIV.	Budhon Meridional Series.	Already published.
XV.	Rangír Meridional Series.	
XVI.	Amua and Karára Meridional Series.	
XVII.	Gurwáni and Gora Meridional Series.	
XVIII.	Huríláong and Chendwár Meridional Series.	
XIX.	North Párasnáth and North Malúncha Meridional Series.	

The present is the 20th Synoptical Volume and the seventh of those appertaining to the North-East Quadrilateral; and it has been made to include both the Calcutta and the Brahmaputra Meridional Series 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 18 and 24 inches in diameter read by 3 and 5 micrometer 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 general arrangement of this volume, it is necessary to point out that the several sections have been prepared and printed at different times, and that the work has extended over several years. The Introductions to each series and the Names and Descriptions of the Principal Stations 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. The Alphabetical and Numerical Lists of Principal Stations, pages $1_{-T.}$ and $2_{-T.}$ were printed prior to the year 1868, when the general programme for the final reduction of the whole of the Triangulation of India was drawn up; there was then a long pause in the printing, while the Simultaneous Reductions of the North-West, South-East and North-East Quadrilaterals were being completed; this was done by the year 1877, when 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 Calcutta Meridional Series has the subscript *T*, and that to the Brahmaputra Meridional Series the subscript *V*.

The data given in this volume are the following:—

First (pages $1_{-T.}$, $1_{-V.}$), 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 $2_{-T.}$, $2_{-V.}$), numerical lists giving the names corresponding to the numbers.

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

Fourth (pages $11_{-T.}$, $11_{-V.}$), the angles and sides of the principal triangles, numbered and arranged in order from south to north.

Fifth (pages $15_{-T.}$, $16_{-V.}$), 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 16—$_T$., 21—$_V$.), the azimuths of surrounding stations and points, at principal, principal-auxiliary, and secondary stations, the latter arranged in alphabetical order.

Seventh (pages 19—$_T$., 27—$_V$.), the co-ordinates and descriptions of all stations and points arranged in alphabetical order.

The heights of the stations of the Calcutta Meridional Series depend in the first instance on the value of the station of Sátten as finally determined by the reduction of the South-East Quadrilateral, and on the spirit-leveled value of Chinsurah of the Calcutta Longitudinal Series (of the South-East Quadrilateral), on the spirit-leveled height of Níál of this Series, and on those of Rámganj and Sonákhoda of the North-East Longitudinal Series. No spirit-leveled heights were available to the East of the Calcutta Meridional Series for employment to reduce the Trigonometrical heights: the heights of the Brahmaputra Series were therefore 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 *vid* the East Calcutta Longitudinal and the Brahmaputra Series, closed on the stations Alangjáni and Sámding of the Assam Longitudinal Series, and the left-hand branch commenced from Kanchábári and Newáni of the North-East Longitudinal Series, and following the Assam Longitudinal Series closed on the same stations. The closing errors $-2\cdot3$ and $+0\cdot2$ feet were dispersed throughout the circuit. For further particulars see Section 7 of Chapter II, Part I of Volume VII of the *Account of the Operations, &c.* The datum to which all heights have been referred is the mean sea level of Karáchi (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. Spirit-leveled values sometimes refer to the upper surface and sometimes to the basement of the pillar, whichever the leveling staff was set on; a description of the exact point referred to is given in each instance in footnotes to the pages of the Co-ordinate List commencing on page 19—$_T$.

It has not been considered necessary to publish the whole of the details of the secondary triangulation, portions having been executed originally for preliminary geographical purposes, to facilitate the construction of a first map of India, and the objects observed having in many instances been flags and temporary marks which must long since have disappeared. The sides and angles of 7 triangles for the Calcutta Meridional Series and of 98 triangles for the Brahmaputra Meridional Series, 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° 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-telegraphic 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. $5^h\ 20^m\ 59^s\cdot42 = 80°\ 14'\ 51''\cdot30$. 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″.

As regards the orthography of Indian names in the present volume. The Alphabetical and Numerical Lists of Principal Stations, for the Calcutta Meridional Series, were printed before the year 1868, in accordance with the rules introduced by Colonel Everest for use in the Survey Department. Subsequently, in 1874, several provincial lists of spellings, constructed under the immediate orders of the Government of India, were received; and thereafter

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 List for Bengal. As a general rule the pronunciations of the vowels are as follows:—*a* has a variable sound as in wom*a*n, rur*a*l, p*a*ltry; *á* as in t*a*rtan; *i* as in b*i*t; *í* as in rav*i*ne; *u* as in b*u*ll; *ú* as in r*u*ral; *o* as in n*o*te *e* as *a* in s*a*y; *au* as *ou* in cl*ou*d; *ai* as *i* in r*i*de.

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 Introduction to the Calcutta Meridional Series was written by Mr. C. Wood, and that to the Brahmaputra Meridional Series by Mr. W. H. Cole. Great pains have been taken to secure the utmost accuracy in preparing the data and passing them through the press.

MUSSOOREE,
August, 1883.

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

CALCUTTA MERIDIONAL SERIES.

CALCUTTA MERIDIONAL SERIES—(LONG. 88° 22′).

INTRODUCTION.

The Calcutta Meridional Series extends from Calcutta to the plains at the foot of the Himalayan Mountains below Darjeeling. It was initiated in 1843 under the instructions of the late Colonel Sir George Everest, Surveyor General, but it was wholly carried out in the years 1843-48 under his successor Captain—afterwards Major-General Sir—A. S. Waugh, to whom in the first instance the executive charge of the operations had been entrusted.

The Series emanated from the Calcutta Base-Line, and was at first intended to be carried up entirely as a double chain of triangles. But owing to the country through which the triangulation would have to pass being a perfectly level plain studded with lofty buildings and trees, to the opposition of the natives to the opening of lines through these obstacles, and to some reluctance on the part of the Civil authorities to afford the aid required for the successful prosecution of the work, the double series was abandoned in favour of a chain of single triangles, presenting the minimum possible number of stations for construction and lines for clearance. The triangulation at first passes over the western portions of the Gangetic delta, running very nearly parallel to the course of the Hooghly and Bhagiruthee rivers; it then crosses the Ganges—here called the Pudda—and runs parallel to the Mahanuddy for a distance of about 40 miles: thereafter, it follows the course of the Tangan river, the stations being for the most part situated alternately on the east and west banks. It traverses the populous and highly-cultivated districts of Hooghly, Nuddea, Moorshedabad, Rajshahye, Maldah, and Dinagepore, skirts the Burdwan and Jalpáiguri districts, and fixes a large number of important points, including several permanent buildings in and around Calcutta, and on the banks of the Hooghly river below Calcutta.

As originally constructed it consisted of 55 triangles, covering a direct meridional distance of about 270 miles. As a matter of convenience the initial and terminal portions of the Series to the south and north have since been allotted to the Calcutta Longitudinal and the North-East Longitudinal Series respectively.

The Series was commenced in 1843-44, and took five years to complete. The whole of the Principal angles were measured with Troughton and Simms' 18-inch theodolite No. 1, a description of which will be found on pages 62 to 64 of the Appendices to Vol. II of the *Account of the Operations &c.*

The party which was detailed for the execution of this Series, was sent down from the Surveyor General's Head Quarters at Dehra Dún to Calcutta where it arrived on 21st November 1843. Up to the middle of December, it was engaged in bringing up the General Report of the recently completed Rangír Meridional Series under the direction of Captain A. S. Waugh. This being finished, and Captain Waugh succeeding to the Surveyor Generalship, Mr. Lane was entrusted with the executive charge. After completing the arrangements necessary for taking the field, the party left Calcutta on the 26th of December and proceeded to select stations for laying out the triangulation as a double series. The Hooghly College at Chinsurah, the roof of which commanded a view of the whole of the circumjacent country, was the site selected for the first station. Mr. Lane had been specially directed to exercise the utmost caution in selecting sites for his stations, to examine the lines before commencing to clear them, and to shift the sites whenever necessary to reduce the obstacles on the lines to a minimum. After thus satisfying himself, he was to proceed with the ray-clearing. Some little progress had been made in clearing rays, when, early in March, the serious opposition which he encountered at the hands of the inhabitants of the Hooghly district, combined with the reluctance of the magistrate to afford the necessary aid, compelled Mr. Lane to abandon ray-clearing and confine his operations to further ray-tracing and selection. By the end of May—when the setting in of the rains forced the party to close field operations—a series of 39 principal triangles had been laid out, forming nine polygons, which covered the country from the Calcutta Base-Line to Rampore Bauleah (on the Ganges)—a direct distance of about 120 miles. The party then retired to recess quarters at Berhampore where it arrived on the 5th of June.

Season 1843-44.

PERSONNEL.

Mr. C. Lane, 1st Class Sub-Assistant.
„ J. O. Nicolson, 1st „ „
„ C. B. Nield, 3rd „ „
(*appointed 5th February* 1844).

From the experience gained during the previous field season, it was apprehended by the Surveyor General that considerable legal impediments would continually arise in the course of the ray-clearing. With a view to diminishing this difficulty as much as practicable, as well as from considerations of economy, he determined, though somewhat reluctantly, to abandon the polygonal triangulation and restrict the Series to a chain of single triangles. He calculated that this arrangement would reduce the expense of the operations by one-third and accelerate their completion in the same proportion. The work had thus to be practically recommenced *de novo*. Mr. Peyton was now appointed to the executive charge of the operations.

Season 1844-45.

PERSONNEL.

Mr. John Peyton, 1st Principal Sub-Assistant.
„ C. Lane, 3rd „ „
„ J. O. Nicolson, 1st Class Sub-Assistant.
„ C. B. Nield, 3rd „ „

In November Mr. Peyton could do little more in the way of tower-building than to collect materials and lay the foundations of Sátten (now LXXVIII of the Calcutta Longitudinal Series) and Boga (now I of Calcutta Meridional Series), while the stations to the south of this side were being repaired by the Department Public Works and adapted for the reception of the large theodolite. The ray-clearing was however taken in hand at once, and despite all drawbacks was rigorously pushed on with: the ray Chinsurah to Bhola—passing through the

towns of Chinsurah and Chandernagore, and stretching for 11 miles through a dense and valuable forest—cost no less than 600 Rupees to clear. Towards the middle of December Mr. Peyton repaired to the South-End Calcutta Base-Line for the determination of his initial azimuth by taking a set of circumpolar-star observations to δ Ursæ Minoris at its periodic time. He was enabled to complete these observations, as well as the measurement of the horizontal angle at this station, by the 6th of January. He then resumed the tower-building and ray-clearing. The towers in this portion of the work had necessarily to be carried to a greater height than usual—from 31 to 44 feet—; and the ray-clearing was undoubtedly heavy work. Having sufficiently advanced this part of the operation, Mr. Peyton returned about the middle of March to begin final observations. It took him two months to complete the horizontal and vertical angles of his first four triangles (now incorporated with the Calcutta Longitudinal Series), as well as to measure the angles at Sátten and Chinsurah to the stations immediately north of them. Proceeding next in succession to the stations Niál (II), Boga (I), Jeodhára (III), and Beliaiti (IV), he was able by the 22nd of May to complete all the observations south of the side III–IV; after which as the rains had set in, he moved into recess quarters at Chinsurah. In addition to the measurement of the principal angles, a very considerable amount of secondary triangulation was executed.

Season 1845-46.

PERSONNEL.

Mr. John Peyton, 1st Principal Sub-Assistant.
„ C. Lane, 3rd „ „
„ J. O. Nicolson, 1st Class „
„ C. B. Nield, 3rd „ „
„ J. M. Dunlop, 3rd „ „
„ J. O. N. James, 3rd „ „

As the observations of the principal angles during the last field season had overtaken the tower-building, it was Mr. Peyton's first care to push on the selection of stations and building of towers so that when the observations should next be taken in hand they might have a fair chance of proceeding uninterruptedly. He accordingly directed nearly all his available resources to the prosecution of this part of the work, returning in the middle of December to Anandbás (VI) to take a set of circumpolar star observations to δ Ursæ Minoris at its periodic time. Having completed these observations on the 7th of January 1846, he returned to the approximate work on which he employed himself for the next two months. Mr. Peyton then felt himself in a position to resume the observations. He accordingly marched southward, and by the end of the month (March) completed the northern angles at the stations Jeodhára (III) and Beliaiti (IV). During the next five weeks, the angles at the stations V to VIII, *viz.* Arbandi, Anandbás, Bahádurpur, and Kedapára, were disposed of; and by the end of May observations were completed at Dogáchha (IX) and Gobipur (X), and the southern angle measured at Gobindpur (XI). The setting in of the rains prevented any further progress. The selection of stations, tower-building, and ray-clearing had, however, been carried a good way beyond the side X–XI at which the observations had stopped: this portion of the work was practically completed up to the side Madhupur–Sísa (XIV–XV), involving the selection during this season of 11 stations, clearing 24 rays of an average length of about 10 miles, and constructing 11 towers of an average height of 32 feet. In addition, a considerable amount of secondary work was accomplished this season. The party returned to recess quarters at Berhampore where it arrived on the 11th June.

Season 1846-47.

PERSONNEL.

Mr. John Peyton, 1st Principal Sub-Assistant.
„ J. O. Nicolson, 1st Class „
„ D. Kirwan, 2nd „ „
„ J. M. Dunlop, 3rd „ „

The party took the field on the 11th of October, and for the first month and a half its entire efforts were directed to the laying out of the Series north of the side XIV–XV. As soon as Mr. Peyton saw that this portion of the operations was sufficiently advanced, he left its prosecution in Mr. Nicolson's hands, and returned southwards to begin the observations which, as before stated, had during the previous season been brought up to the side Gobipur–Gobindpur (X–XI). By the end of December, all the horizontal and vertical angles at X, XI, XII, and XIV were disposed of, and in addition a set of circumpolar-star observations for azimuth was taken at the last of these stations, *viz.* Madhupur. During the next two months the progress was somewhat slower, Mr. Peyton being unable to do more than observe the angles at stations XIII and XV to XVIII. During March he was more fortunate, having been able to lay the work across the Ganges by completing observations at stations XIX to XXII. Here his own individual share in the work received a temporary check; for while marching through a dense forest he was sprang upon and wounded by a leopard which confined him to his bed for nearly a month. Mr. Nicolson, whose exertions for the prosecution of the Series in advance had been eminently successful, was accordingly recalled to take up the observing. During the month (5th April to 4th May) that he was observing Mr. Nicolson disposed of the observations at the stations XXIII to XXVI; and Mr. Peyton being then able to resume work, he returned to his own proper share of the operations. By the 7th of June the Series had reached the side Naksodal–Sankrol (XXXI–XXXII) in the northern confines of the Maldah district; and as the rains now overtook the party, Mr. Peyton moved into recess quarters at Berhampore. In view of the considerable difficulties* encountered by the party, the operations of the present season were considered by the Surveyor General to be highly satisfactory. The work embraced the extension of the Series by 21 triangles across a meridional distance of nearly 110 miles, the building of nine hollow rectangular towers of an average height of 34 feet and as many solid towers of half that height, and the clearing of 32 rays of an average length of 11 miles; also some secondary work.

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* In reporting on the operations of this season, Mr. Peyton remarked as follows:—The country up to the Pudda or Ganges river presenting the same unvaried feature of a flat densely-wooded and thickly-inhabited country, and subject to inundation, I was obliged to abide by the usual high towers and consequently build them *paka*; and it was not until I had crossed the Pudda and got upon the elevated undulating tract called the Barind or Khatal that I was enabled to reduce the heights of the towers and make them *kacha*. This tract called the Barind commences from the north bank of the Pudda and runs along the whole extent of the triangulation; it is bounded on the west by the Mahanuddy river and is diversified by valleys which extend along the Tangan and Punarbhaba rivers, both tributaries to the former: it is thinly inhabited and overgrown by jungle, the produce being entirely rice which is cultivated in the hollows formed into terraces for the purpose. Notwithstanding the present wild aspect of the country, vestiges are traced indicative of its having been once densely populated—a remarkable feature being the innumerable tanks, now overgrown with jungle and reed, that cover the whole extent of this tract, and are enclosed by thick-set groves of palm, mango, and tamarind. The present inhabitants who are evidently emigrants from other parts are unable to furnish any information relative to the former inhabitants beyond that this tract was thickly inhabited during the Gaur dynasty, that the inhabitants were an exclusive set, and that each caste or tribe had its own tank or pond for use which was preserved inviolate from the intrusion of strangers. To the party selecting stations this country proved a formidable obstacle owing to the impenetrable thorn and the tough tamarind encountered,—some of the lines taking more than a fortnight to clear. But the greatest drawback to the work consisted in the total absence of hackery-roads; and as *hackeries* (country carts) were the only conveyance which could be used for the transport of public property, in lieu of either elephants or camels which the Commissariat could not supply, I experienced much inconvenience and delay, and incurred great risk in having had to leave the tents and much of the property behind, taking only such with me as could be carried on men's shoulders, and putting up in huts built up at the stations.

Season 1847-48.

PERSONNEL.

Mr. John Peyton, 1st Principal Sub-Assistant.
„ J. O. Nicolson, 1st Class „
„ J. M. Dunlop, 2nd „ „
„ D. Kirwan, 3rd „ „

Protracted rainy weather and sickness prevented the party from resuming field operations earlier than the 1st of December. The nature of the country through which this season's triangulation lay was flat and densely-wooded, chiefly with *sál* and bamboo. Until the middle of February Messrs. Peyton and Nicolson devoted all their energies to the laying out of the triangulation north of the side Naksodal–Sankrol (XXXI–XXXII). Mr. Peyton then returned to commence observations, and by the end of March he was able to complete the angles at stations XXXI to XXXVI. He next proceeded to the station of Rámchandpur (XXXVII), but before he had finished work there, both Mr. Nicolson and Mr. Dunlop had to proceed to Dinagepore for medical treatment, as they were suffering from fever of a very severe type, contracted by exposure to the sun in a malarious tract of country. The tower-building and ray-clearing had however been considerably advanced, and just at this time Mr. Lane was fortunately able to join the party after completing the work at the eastern end of the North-East Longitudinal Series on which he had been engaged. His arrival at the scene of operations was most opportune; indeed, without his help it would have been impossible to bring the Series to an end this season: for Mr. Kirwan, on whom the ray-clearing devolved after Messrs. Nicolson and Dunlop's withdrawal, also fell sick; moreover the heavy rains that fell in April and May brought down some of the *kacha* towers, which had to be rebuilt. Mr. Peyton was however fortunately able to dispose of the angles at the remaining eight principal stations by the 18th May. The party then marched to recess quarters at Benares where it arrived on the 7th of July.

Subsequently, when the Calcutta Longitudinal Series was revised (see pages 19 and 20 of Vol. II), the angles of the first four principal triangles of the Series under notice were incorporated with the new triangulation; thus the Calcutta Meridional Series is now held to originate at the side Sátten–Chinsurah (LXXVIII–LXXXI) of the Calcutta Longitudinal Series, while to the north it terminates at the side Chotáki–Newáni (CXXV–CXXVI) of the North-East Longitudinal Series.

On the completion of the Simultaneous Reduction of the North-East Quadrilateral it was found that the errors which had actually been dispersed over the Calcutta Meridional Series, between the origin Sátten–Chinsurah and terminus Chotáki–Newáni, were as follow:—

In Logarithm of the latter side	+ 0·000,0028,9	= 0·4 inches per mile.
„ Azimuth „	− 2″·004	
„ Latitude of Newáni	− 0·312	
„ Longitude „	− 0·079	

The trigonometrical heights of this Series rest for origin on the values of Chinsurah and Niál as determined by the Spirit-Levelling Operations of this Survey, and on the value of Sátten as fixed by the Calcutta Longitudinal Series. They were checked by Spirit-Levelling at the side Sonakhoda–Rámganj of the North-East Longitudinal Series,—a little beyond the terminus of this Series. The cumulative error generated was found to be + 11 feet, and it was dispersed in the manner indicated at page 42 of Part I of Vol. VII.

Secondary Triangulation.

The Secondary Triangulation which was executed in connection with the operations of this Series may be divided into three classes, *viz.*:—

(1). Triangles to fix permanent points from the Principal Stations.
(2). Ray traces.
(3). Minor triangulations, chiefly River Surveys.

(1). Simultaneously with the prosecution of the Principal Series during the seasons 1844-46, Mr. John Peyton using the 18-inch theodolite at the principal stations, and Mr. D. Kirwan employing a 12-inch at secondary stations, were able to determine the positions of 67 permanent buildings and points. Some portion of this work falling south of the side Sátten–Chinsurah the results have been exhibited for convenience in the Synoptical Volume (XII) of the Calcutta Longitudinal Series: but for the part north of that side the position-values of the several points, together with the details of the triangles in a few instances, are given in the Synoptical volume for this Series. Among the position-values here exhibited, those of the following noteworthy places will be found:—Chinsurah, Baraset, Pundooah, Culna, Santipore, Kishnaghur, Nuddea, Berhampore, and Rampore Bauleah. Later on, in season 1847-48, a triangle was thrown out from the side XXXV–XXXVII to fix Dinagepore.

(2). *Ray Traces.*—These consist of chains of triangles which were carried over the sides of the principal triangles with the primary object of enabling the direction of the lines between the stations to be exactly determined before the 'ray-cutting' was commenced. The stations were at short distances apart (from 1 to 3 miles), and were marked by a stout wooden pin, driven firmly into the ground, over which a flagstaff was erected for observation. The three angles of each triangle were measured with 12-inch theodolites. The requisite directions were usually computed from the triangulation on a hypothetical base, without any knowledge of the actual length, as this could only be obtained with accuracy after the lengths of the sides of the principal triangles had been determined; see Chapter II, Part IV, of the Manual of Survey for India by Colonels Thuillier and Smyth. In the course of the execution of the ray traces, observations were usually taken to all visible points in the immediate neighbourhood which it might be useful to fix for topographical purposes; thus some of the ray traces became of additional importance. Of this class of work (which has been adjusted to fit between the finally determined position-values of the principal stations at the extremities of the rays), the position-values of such permanent points as were fixed by Mr. Lane in May and June 1845 along the rays Niál–Jeodhára and Boga–Jeodhára are given in the Synoptical volume for this Series, while the position-values as well as the details of the triangles along the ray Bhola–Sátten executed by Mr. Nicolson in April and May 1845 have been exhibited for convenience in Synoptical Volume XII.

(3). *Minor Triangulations.*—A series of triangles was executed by Mr. Lane in April to June 1846, chiefly with a 12-inch theodolite, from the side Anandbás–Bahádurpur (VI–VII) northwards to Gobipur (X), and thence to Kistonagar (XII). This triangulation has been adjusted between the finally determined position-values of the principal stations just named. It determined the positions of 78 points, of which about twenty are believed to be still in existence, and therefore the results for them are given in the Synoptical Volume for this Series.

Pudda River Survey.—This was executed in April to June 1847 by Mr. D. Kirwan who used a 7-inch theodolite for his observations. The series starts at the station Jitpur (XVII) from a side fixed by ray-trace computation, and proceeds eastwards for about 7 miles striking the Pudda river where the Jwalangi branches off from it; the series then spans the Pudda whose course it defines for a distance of about 30 miles, and connecting *en route* with Murcha (XIX), closes on Debipur (XX). The triangulation has been adjusted between the final position-values of the principal stations named: it determined the positions of seventy points, for the most permanent of which the results are published in the Synoptical Volume for this Series.

Hooghly River Survey.—The whole of this triangulation has been executed with a 12-inch theodolite. The first section was begun in February 1845 by Mr. J. O. Nicolson at the side LXXXIII–LXXXV of the Calcutta Longitudinal Series, and was carried northwards along the river as far as Serampore where it closed at the Church, the position of which had been determined several years before by observations with an 18-inch theodolite from stations LXXX, LXXXII, and LXXXIII of the Calcutta Longitudinal Series. This section has therefore been adjusted between the finally determined position-values of the principal stations named, and furnishes the positions of several important points in Calcutta, Howrah, Shalkía, Cossipore, Ágarpára, and Barrackpore. It was at the same time continued southwards fixing in detail the channel of the Hooghly from the South-End of the Calcutta Base-Line to Akra Semaphore—a distance of about 10 miles—and determining the position amongst others of additional important points in Calcutta, Howrah, &c. The details of the triangles as well as the position-values of the points fixed in the foregoing section of the work are exhibited in Synoptical Volume XII.

In the same season, 1844-45, another section of the Hooghly River Survey was begun at Chinsurah (LXXXI of the Calcutta Longitudinal Series), and continued northwards. There is thus a gap of about 9½ miles in the Series, between Serampore and Chinsurah. This section connects with Boga (I), and finally closes on Beliaiti (IV): the triangulation has therefore been adjusted between the final position-values of these principal stations as determined by the Simultaneous Reduction of the North-East Quadrilateral, and of Chinsurah as furnished by the similar reduction of the South-East Quadrilateral. The section originally fixed the positions of about eighty points—among others of some in Chinsurah and Hooghly; but as the stations were not permanently marked, and are consequently not now forthcoming, the usual details of the triangles have not been published, but merely the latitudes and longitudes of the stations of observation and of the buildings and other permanent marks whose positions were fixed.

In the next season, 1845-46, Mr. Nicolson, assisted by Mr. J. M. Dunlop, carried a series following the course of the Hooghly for a distance of about 65 miles, from the side LXXXIII–LXXXV of the Calcutta Longitudinal Series to Kaukháli Light-house (at the mouth of the river) on which the last station of the series was fixed. This triangulation determined the positions of several semaphores and permanent points of special importance to navigation. Some of the points then fixed were, a few years later, connected with in the course of the operations of the East Coast Series; consequently this portion of the Hooghly River Triangulation has been adjusted in convenient sections between the finally determined position-values of the following principal stations:—LXXXIII and LXXXV, of the Calcutta Longitudinal Series; and I, II, V, and VI, of the East Coast Series. The results of this section are exhibited, as most convenient, in the Synoptical Volumes, XII and XIII, for these two series.

DEHRA DÚN:
April 1882.

C. WOOD,
Surveyor, 2nd Grade.

ALPHABETICAL LIST OF STATIONS.

NUMERICAL LIST OF STATIONS.

LXXVIII	Sátten. (of Calcutta Longitudinal Series).
LXXXI	Chinsura. (of Calcutta Longitudinal Series).
I	Boga.
II	Niál.
III	Jeodhára.
IV	Beliaiti.
V	Arbandi.
VI	Anandbás.
VII	Bahádúrpúr.
VIII	Kedapára.
IX	Dogácha.
X	Gobípúr.
XI	Gobindpúr.
XII	Kistonagar.
XIII	Teragari.
XIV	Modupúr.
XV	Sísa.
XVI	Imámnagar.
XVII	Jítpúr.
XVIII	Chatra.
XIX	Murcha.
XX	Debípúr.
XXI	Sursuni.
XXII	Madabpúr.
XXIII	Khetia.
XXIV	Sundarpúr.
XXV	Alsapúr.
XXVI	Dilálpúr.
XXVII	Charaldánga.
XXVIII	Onáli.
XXIX	Kisnápúr.
XXX	Kamardánga.
XXXI	Naksodal.
XXXII	Sankrol.
XXXIII	Indar Naráinpúr.
XXXIV	Manglár.
XXXV	Chandol.
XXXVI	Ahtgara.
XXXVII	Rámchandpúr.
XXXVIII	Chendoria.
XXXIX	Mokundpúr.
XL	Bhelator.
XLI	Gaorípúr.
XLII	Lohágara.
XLIII	Kesarbári.
CXXV	Chotáki. (of North-East Longitudinal Series).
CXXVI	Newáni. (of North-East Longitudinal Series).

CALCUTTA MERIDIONAL SERIES.

DESCRIPTION OF PRINCIPAL STATIONS.

The descriptions of the construction of the Principal Stations on this Series are very meagre; but it would appear from the several records consulted, that they are all situated on low ground, and are either hollow square towers or solid pillars of masonry. It is believed that the hollow towers occur at the stations I to VI, VIII to XX, XXIV, XXXI to XXXIII, XXXV and XXXVII: such towers are built of burnt bricks set in lime or mud cement, 26 to 44 feet in height, having a wooden platform on the summit for the observatory tent to rest on. One mark (a circle and centre) engraved on a stone, is let into the floor at about the ground level. At the remaining stations pillars of masonry (presumably of solid construction) from 11 to 32 feet in height, with marks, the same as above, at top and bottom, were built: around these pillars, for the accommodation of the observatory tent, solid square towers (with the exception of that at station VII where the surrounding tower was circular in form) were built of sun-dried bricks set in mud cement.

The following descriptions have been compiled from those given in the MS. General Report and the original records of this Series, supplemented in respect to neighbouring villages, &c., by information obtained from the Revenue Survey Maps of the country traversed. The information as to the local sub-divisions in which the several stations occur has been derived from the latest Annual Reports received from the District Officers to whose charge the stations have been committed.

LXXVIII.—(*Of the Calcutta Longitudinal Series*). Sátten Tower Station, lat. 22° 59′, long. 88° 17′—observed at in 1845 and 1869—is to the east of and adjoining the village from which it takes its name; thána Dhaniakháli, pargana Chaumáha, district Hooghly.

The station consists of a hollow rectangular tower of masonry 43·5 feet in height, having a mark-stone in the ground floor and another (that of 1845) one foot below it. The tower as originally constructed in 1845 was 33·00 feet in height; but it was found to be too shaky and was therefore removed. The azimuths and perambulated distances of the circumjacent villages are:—Dúmúrpur 68° 12′, mile 0·75; Megsar 190° 26′, miles 1·56; Bhusáli 288° 1′, mile 0·51; Ghoshpur 221° 59′, miles 1·42.

LXXXI.—(*Of the Calcutta Longitudinal Series*). Chinsurah (*Chinsura*) 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 embedded in the wall and a pillar 9 feet high with a 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. Boga or Notun Boga Tower Station, lat. 23° 4′, long. 88° 27′—observed at in 1845 and 1863—is situated in the fields of the village of Notun Boga; thána Balágarh, pargana Selampur, district Hooghly.

The station consists of a hollow tower of masonry 43·42 feet high which has a mark in the ground floor. When revisited in 1863 for the purpose of originating the East Calcutta Longitudinal Series no alteration in its construction was made. The Azimuths and perambulated distances of the circumjacent villages are:—Sáthángáli 52° 30′, mile 0·98; Itágarh 96° 0′, miles 1·21; Notun Boga 216° 21′, mile 0·46; Purána Boga 284° 16′, mile 0·98; Máliber 318° 24′, miles 1·23.

II. Niál Tower Station, lat. 23° 7′, long. 88° 18′—observed at in 1845—is situated on a tank bank immediately on the southern skirt of the village of Niál and about 4 miles N.N.W. of the Railway Station of Pundooah; thána and pargana Pundooah, district Hooghly.

The station consists of a hollow square tower of masonry 36 feet in height which has a mark in the ground floor. The azimuths and perambulated distances of the circumjacent villages are:—Naupára 244° 38′, mile 0·14; Chaugora 254° 31′, miles 1·22; Pánchgora 5° 39′; mile 0·63; Niál 184° 54′, mile 0·10.

III. Jeodhára Tower Station, lat. 23° 12′, long. 88° 24′—observed at in 1845 and 1846—is situated about 1½ miles from the right bank of the Hooghly river and 1 mile S.W. by S. of the town of Culna; thána and sub-division Culna, district Burdwan.

The station consists of a square tower of masonry 44·33 feet in height which has a mark in the ground floor. The azimuths and perambulated distances of the circumjacent villages are:—Nasibpur 292° 3′, miles 1·22; Ráyatpur 358° 41′, miles 1·12; Sarbamangla 43° 2′, mile 0·73; Rámeshwarpur 122° 20′, mile 0·63.

IV. Beliaiti Tower Station, lat. 23° 10′, long. 88° 32′—observed at in 1845 and 1846—stands about 350 yards west of the village from which it takes its name and 4½ miles W. of the Railway Station of Ránaghat; thána Ránaghat, pargana Pánchpur, district Nuddea.

The station consists of a square tower of masonry 30·67 feet in height which has a mark in the ground floor. The azimuths and perambulated distances of the circumjacent villages are:—Tárapur 140° 36′, miles 1·48; Naupára 71° 8′, mile 0·95; Musanda 311° 57′, mile 0·55; Hardam 334° 53′, miles 1·16.

V. Arbandi Tower Station, lat. 23° 18′, long. 88° 33′—observed at in 1846—is situated about 400 yards S.W. of the village from which it is named, 1½ miles W. of the road from Ránaghat Railway Station to Kishnaghur and 5 miles N. E. of the town of Santipore; thána Santipore, pargana Mamjowan, District Nuddea.

The station consists of a square tower of masonry 31·92 feet in height which has a mark in the ground floor. The azimuths and perambulated distances of the circumjacent villages are:—Boali 351° 25′, miles 1·74; Denui 56° 49′, mile 0·78; Chandra 92° 39′, mile 1·00; Gopálpur 205° 23′, miles 1·03, (land which is or has been at some time a river island).

VI. Anandbás Tower Station, lat. 23° 21′, long. 88° 25′—observed at in 1846—is situated on the alluvial lands lying about 1½ miles E. of the Bhagiruthee river, 2½ miles S. by E. of the town of Nuddea and 8 miles S. W. of the Sub-divisional Station of Kishnaghur; thána Nuddea, pargana Okra, District Nuddea.

The station consists of a square tower of masonry 32·25 feet in height which has a mark in the ground floor. The azimuths and perambulated distances of the circumjacent villages are:—Santoshpur 295° 47′, miles 1·33; Sátkuli 338° 38′, miles 1·78; Jangalbás 351° 19′, mile 0·91; Anandbas 221° 0′, mile 0·59.

VII. Bahádurpur (*Bahádúrpúr*) Tower Station, lat. 23° 26′, long. 88° 31′—observed at in 1846—is situated about 1¾ miles N. W. of the Sub-divisional Station of Kishnaghur and nearly midway between the Jawalangi river and the road from Kishnaghur to Moorshedabad; thána Kishnaghur, pargana Bhagabán, district Nuddea.

The station consists of a solid round tower of sun-dried bricks and mud cement 32·38 feet in height which has a mark-stone at the top and another at the bottom. The azimuths and perambulated distances of the circumjacent villages are:—Bahádurpur 152° 47′, mile 0·48; Sáhebnagar 233° 47′, miles 1·07; Mayakhál 265° 3′, mile 0·73.

VIII. Kedapára Tower Station, lat. 23° 30′, long. 88° 22′—observed at in 1846—is situated about 2¼ miles S.S.W. of the large village of Majida on the right bank of the Bhagiruthee river and 4 miles E. from that of Nimdaha; pargana Púrbasthali, district Burdwan.

The station consists of a square tower of masonry 37·92 feet in height which has a mark in the ground floor. The azimuths and perambulated distances of the circumjacent villages are:—Bábudánga 344° 23′, mile 0·56; Atpára 242° 21′, mile 0·64; Kálekhántola (factory) 123° 50′, miles 2·47; Muragáchhi 30° 21′, miles 1·82.

IX. Dogáchha (*Dogácha*) Tower Station, lat. 23° 34′, long. 88° 32′—observed at in 1846—is situated about ⅓ of a mile from the right bank of the Jwalangi river and 3½ miles N.E. of Nekipára on the road from Kishnaghur to Moorshedabad; thána Nákásipára, pargana Bhagabán, district Nuddea.

The station consists of a square tower of masonry 34·04 feet in height which has a mark at the ground level. The azimuths and perambulated distances of the circumjacent villages are:—Kálábaga 42° 22′, miles 1·21; Dogáchha 84° 40′, miles 1·44; Bargáchhi 187° 46′, miles 2·14; Mota 216° 11′, miles 1·90.

X. Gobipur (*Gobípúr*) Tower Station, lat. 23° 39′, long. 88° 26′—observed at in 1846—is situated about 2¾ miles E.N.E. of the large village of Bikrampur on the road from Kishnaghur to Moorshedabad and some 5½ miles W. by N. of Maheshnagar in the great bend of the Jwalangi river; thána Nákásipára, pargana Bhagabán, district Nuddea.

The station consists of a square pillar of masonry 26·04 feet in height which has a mark below. The azimuths and perambulated distances of the circumjacent villages are:—Chhota Simla 261° 29′, miles 1·30; Gobipur 234° 37′, mile 0·39; Malumgáchha 128° 31′, mile 0·68; Chandipur 118° 28′, miles 1·58; Dhobádánga 19° 10′, miles 1·95.

XI. Gobindpur (*Gobindpúr*) Tower Station, lat. 23° 41′, long. 88° 36′—observed at in 1846—stands on the bank of an extensive *Jhíl* (marsh), about 4 miles S.E. by S. of the large village of Tehatta on the Jwalangi river and 3½ miles N.W. of the large village of Bhagabán; thána Tehatta, pargana Bhagabán, district Nuddea.

The station consists of a square tower of masonry 27·25 feet in height which has a mark at bottom. The azimuths and perambulated distances of the circumjacent villages are:—Pátharghátá 10° 29′, miles 1·24; Gobindpur 33° 27′, mile 0·91; Taranipur 89° 21′, miles 2·13; Gopálpur 267° 26′, miles 3·18; Sonápur 338° 25′, miles 2·28.

XII. Kistonagar Tower Station, lat. 23° 48′, long. 88° 31′—observed at in 1846—is situated about midway on the neck of the alluvial lands formed by the tortuous course of the Jwalangi river, about 1½ miles W. N.W. of the large village of Shámnagar and 2 miles E.S.E. of that of Gopináthpur; thána Tehatta, pargana Bhagabán, district Nuddea.

The station consists of a square tower of masonry 36·42 feet in height which has a mark below. The azimuths and perambulated distances of the circumjacent villages are:—Rádhanagar 165° 19′, miles 1·07; Kistonagar 226° 27′, mile 0·70; Shámnagar (Indigo factory) 339° 25′, mile 0·98; Palásipára 39° 19′, miles 1·87.

XIII. Teragari Tower Station, lat. 23° 51′, long. 88° 39′—observed at in 1847—stands on western side of the road from the Sub-divisional Station of Meherpur to Piárpur or Solmári village and about 1½ miles from the latter; thána Meherpur, pargana Rajpur, district Nuddea.

The station consists of a square tower of masonry 32·00 feet in height which has a mark at bottom. The azimuths and perambulated distances of the circumjacent villages are:—Batopára 63° 31′, miles 1·71; Subrajpur 204° 54′, miles 2·01; Hitimpára 260° 31′, miles 2·63; Shibpur 301° 46′, miles 1·82.

XIV. Madhupur (*Modupúr*) Tower Station, lat. 23° 57′, long. 88° 32′—observed at in 1846—is situated immediately on the right bank of the Jwalangi river and about a mile below its junction with the Bhairab; thána Nauda, pargana Kulberia, district Moorshedabad.

The station consists of a square tower of masonry 33·25 feet in height which has a mark at bottom. The azimuths and perambulated distances of the circumjacent villages are:—Madhupur (Indigo factory) 79° 35′, mile 0·48; Madhupur 120° 47′, miles 1·41; Dengapára 179° 59′, miles 1·31; Piárpur 304° 29′, miles 1·99; Belnagar 233° 47′, mile 0·68.

XV. Sísa Tower Station, lat. 23° 59′, long. 88° 39′—observed at in 1847—is situated immediately on the left bank of the Jwalangi river, about 1 mile W.N.W. of the Police Station of Karímpur on the same bank of the river, and 1¾ miles E.S.E. of the large village of Pepulkhola; thána Karímpur, pargana Teragharia, district Nuddea.

The station consists of a hollow square tower of masonry 34·17 feet in height which has a mark-stone embedded in the ground floor. The azimuths and perambulated distances of the circumjacent villages are:—Khajurtala 78° 34′, miles 1·14; Senpára 52° 49′, miles 1·08; Gopálpur 339° 50′, mile 0·85; Abhaypur 288° 50′, mile 0·56; Donada 138° 23′, miles 1·47.

XVI. Imámnagar Tower Station, lat. 24° 4′, long. 88° 31′—observed at in 1847—is situated about midway between the two channels or branches of the Bhairab river and 1·49 miles nearly W. by N. of Saruppur village; thána Harirpára, pargana Kulberia, district Moorshedabad.

The station consists of a square tower of masonry 37·92 feet in height which has a mark below. The azimuths and perambulated distances of the circumjacent villages are:—Chua 17° 55′, miles 2·79; Fatehpur 253° 31′, miles 1·48; Turtipur 197° 7′, miles 1·28; Lochanmati 96° 0′, mile 0·89.

XVII. Jitpur (*Jítpúr*) Tower Station, lat. 24° 10′, long. 88° 37′—observed at in 1847—is situated about 1¼ miles from the eastern bank of the Shiálmári river and some 3½ miles N.N.E. of the large village of Azimganj on the opposite bank of the same river; thána Jwalangi, pargana Goas, district Moorshedabad.

The station consists of a square tower of masonry 40·08 feet in height which has a mark at bottom. The azimuths and perambulated distances of the circumjacent villages are:—Rádhakántapur 124° 54′, mile 0·69; Mullapára 205° 16′, mile 0·30; Faridpur (Indigo factory) 310° 5′, miles 2·62; Mudipára 344° 51′, miles 1·77; Fakírabad 4° 41′, mile 0·86.

XVIII. Chatra Tower Station, lat. 24° 13′, long. 88° 26′—observed at in 1847—is situated on the left or western bank of the Bhairab river and about 1¼ miles S.E. by S. of Tentulia on the road from Moorshedabad to Rampore Bauleah; thána and pargana Goas, district Moorshedabad.

The station consists of a square tower of masonry 37·00 feet in height which has a mark below. The azimuths and perambulated distances of the circumjacent villages are:—Chatra 157° 25′, mile 0·23; Rámnagar 190° 25′, mile 0·97; Dengapára 320° 37′, miles 1·92; Dharampur 28° 23′, mile 0·87.

XIX. Murcha Tower Station, lat. 24° 19′, long. 88° 33′—observed at in 1847—is situated about ½ a mile S. of the junction of the Shiálmári river with the Murganj nadi (stream) and 5¾ miles S.W. of the Civil Station of Rampore Bauleah; thána and pargana Goas, district Moorshedabad.

The station consists of a square tower of masonry 30·00 feet in height which has a mark at bottom. The azimuths and perambulated distances of the circumjacent villages are:—Bánsgara 316° 3′, miles 1·23; Shibnagar 358° 2′, mile 0·88; Janginagar 24° 9′, miles 1·59; Murcha 47° 30′, miles 1·18; Daulatpur 66° 21′, miles 1·69.

XX. Debipur (*Debípúr*) Tower Station, lat. 24° 22′, long. 88° 24′—observed at in 1847—was on the alluvial lands, about 1 mile S. of the right bank of the Pudda or Ganges river and close E. of the road from Bhagabángola (old) on the Bhairab river to Alatuli or Bhagabángola (new); thána Bhagabángola, pargana Goas, district Moorshedabad.

The station consists of a square tower of masonry 32·58 feet in height which had a mark below. The azimuths and perambulated distances of the circumjacent villages are:—Bakhtáwarpára 92° 22′, miles 1·08; Dhakarmadi 11° 59′, miles 1·11; Bírpára 307° 35′, miles 1·64; Debipur 175° 39′, mile 0·39. This station was reported by the District Officer in February 1876 to have been washed away by the Ganges.

XXI. Sursuni, locally known as Tilabári, Tower Station, lat. 24° 29′, long. 88° 31′—observed at in 1847—is situated on the *Barind*, a wild, elevated and sterile tract of country lying north of the Pudda or Ganges river, about 10½ miles N.W. of the Civil Station of Rampore Bauleah and 8 miles N.E. of the village of Bargáchhi on the left bank of the Ganges; thána Godagári, pargana Ruknpur, district Rajshahye.

The station consists of a square solid tower of burnt and sun-dried bricks enclosing a central pillar of masonry 15·00 feet in height which has a mark-stone at top and another at bottom. The azimuths and perambulated distances of the circumjacent villages are:—Sursuni 167° 47′, mile 0·72; Jikra 344° 15′, mile 0·95; Chabbishnagar 264° 32′, miles 2·02; Kundaliapára 84° 45′, miles 1·43.

XXII. Madabpur (*Madabpúr*), locally known as Gopálpur, Tower Station, lat. 24° 30′, long. 88° 22′—observed at in 1847— is situated on the *Barind*, about a mile from the left bank of Mahánada river and 2 miles N. by E. of the Police Station of Godagári at junction of roads on left bank of the Ganges; thána Godagári, pargana Laskarpur, district Rajshahye.

The station consists of a solid platform of sun-dried bricks enclosing a central pillar of masonry 11·58 feet in height which has a mark-stone at top and another at bottom. The azimuths and perambulated distances of the circumjacent villages are:—Abhaya (Indigo factory) 137° 4′, miles 1·09; Rájarámpur 291° 20′, mile 0·54; Mádhabpur 350° 10′, mile 0·31; Sultanganj 80° 25′, mile 0·98; Gangobári 82° 38′, miles 1·17.

XXIII. Khetia Tower Station, lat. 24° 37′, long. 88° 26′—observed at in 1847—is situated on the *Barind*, about a mile W. of the road from Godagári to Dinagepore and 6½ miles E. by N. of the large village of Nawabganj on the left bank of the Mahánada river; thána Nawabganj, pargana Hudrapur, district Maldah.

The station consists of a square solid tower of sun-dried bricks enclosing a central pillar of masonry 19·00 feet in height

which is marked in the usual manner. The azimuths and perambulated distances of the circumjacent villages are :—Jhilim 229° 44′, miles 1·74; Kendul 334° 24′, mile 0·90; Khetia 92° 19′, mile 0·23; Jamtára 126° 4′, miles 1·63.

XXIV. Sundarpur (*Sundarpúr*) Tower Station, lat. 24° 38′, long. 88° 16′—observed at in 1847—was situated nearly midway between the Ganges and the Mahánada rivers, about 2½ miles N. E. of the large village of Ghorapakhia and 4½ miles S.E. of that of Shibgang on the left bank of the Ganges; thána Nawabganj, pargana Hudrapur, district Maldah.

The station consisted of a square tower of masonry 26·00 feet in height which had a mark in the ground floor. The azimuths and perambulated distances of the circumjacent villages are:—Sundarpur 12° 30′, mile 0·18; Naya Naubanga 36° 15′, mile 0·86; Roktampur 108° 8′, miles 1·44; Bábupur 150° 27′, mile 0·18; Miratoli 253° 49′, mile 0·12. This station was reported by the District Officer in March 1878 to have been washed away by the Ganges.

XXV. Alsapur (*Alsapúr*) Tower Station, lat. 24° 44′, long. 88° 23′—observed at in 1847—is situated on the *Barind*, nearly midway between the Mahánada river and the high road from Godagári to Dinagepore and about 4 miles west of Nachi village on the high road; thána Nawabganj, pargana Chandli, district Maldah.

The station consists of a solid tower of sun-dried bricks, enclosing a central pillar of masonry 15·01 feet in height which is marked in the usual manner. The azimuths and perambulated distances of the circumjacent villages are:—Mádhabpur 345° 57′, miles 1·40; Mirzapur 275° 29′, mile 0·94; Majáháti 126° 44′, miles 1·34; Bauwál 54° 47′, miles 1·22.

XXVI. Dilálpur (*Dilálpúr*) Tower Station, lat. 24° 48′, long. 88° 14′—observed at in 1847—was situated on the southern skirt of the village from which it is named, about 2¾ miles E. of the Chándni Indigo factory on the left bank of the Pugla, a branch of the Ganges river, and some 3½ miles E.N. E. of their junction; thána Shibganj, pargana Shershahabad, district Maldah.

The station consisted of a square solid tower of sun-dried bricks, enclosing a central pillar of masonry 15·67 feet in height which had a mark-stone at top and another at bottom. The azimuths and perambulated distances of the circumjacent villages are:—Shikárpur 297° 5′, miles 1·02; Fatehpur 353° 23′, miles 2·35; Miápur 142° 18′, mile 0·45; Kalkápur 201° 18′, mile 0·42. This station was reported by the District Officer in March 1878 to have been washed away by the Ganges.

XXVII. Charaldánga Tower Station, lat. 24° 53′, long. 88° 26′—observed at in 1847—is situated on the *Barind*, in the middle of a patch of thick thorny jungle, about 6½ miles E. by N. of the large village of Bangabári on the left bank of the Mahánada river and 5½ miles N.W. of Chotipur on the high road from Godagári to Dinagepore; thána Gumáshtapur, pargana Paltapur, district Maldah.

The station consists of a square solid tower of sun-dried bricks, enclosing a central pillar of masonry 18·00 feet in height which has a mark-stone at top and another at bottom. The azimuths and perambulated distances of the circumjacent villages are:—Charaldánga 67° 10′, mile 0·30; Rámkandar 119° 51′, mile 0·64; Básdebpur 193° 18′, mile 0·37; Sujanagar or Magrakandar 267° 52′, mile 0·44. A great portion of the pillar was reported in March 1878 by the District Officer to have fallen down.

XXVIII. Onáli, known also as Ronáli, Tower Station, lat. 25° 0′, long. 88° 19′—observed at in 1847—is situated on the *Barind*, about 150 yards north of the nearest portion of the scattered village of this name, 8⅓ miles E.S.E. of the town of Maldah and 7½ miles E. of the Police Station of Angrazabad on the right bank of the Mahánada river; thána Gazol, pargana Shekherpur, district Maldah.

The station consists of a solid tower of sun-dried bricks, enclosing a central pillar of masonry 20·75 feet in height which has a mark-stone at top and another at bottom. The azimuths and perambulated distances of the circumjacent villages are:—Abipur 245° 44′, miles 1·25; Apina 319° 29′, mile 1·00; Dolakandar 11° 18′, mile 0·64; Dholmalpur 112° 9′, mile 0·72.

XXIX. Kisnápur (*Kisnápúr*) Tower Station, lat. 25° 3′, long. 88° 31′—observed at in 1847—is situated on the *Barind*, about 1¾ miles N.E. of the large village of Nitpur and 5 miles S.W. of that of Nishchindipur on the high road from Godagári to Dinagepore; thána Porsha, pargana Pustoil, district Dinagepore.

The station consists of a square solid tower of sun-dried bricks, enclosing a central pillar of masonry 22·92 feet in height which has a mark-stone at top and another at bottom. The azimuths and perambulated distances of the circumjacent villages are:—Gopináthpur 69° 4′, mile 0·59; Krishnapur 23° 29′, mile 0·47; Bishnupur 237° 50′, mile 0·74; Deolia 284° 17′, miles 1·65.

XXX. Kámárdánga (*Kamardánga*) Tower Station, lat. 25° 8′, long. 88° 24′—observed at in 1847—is situated on the *Barind*, about 200 yards S.W. of the village of Kámárdánga, 2½ miles S.S.E. of the large village of Bámangaon Gola on the eastern side of the Tangan stream and a little over 3 miles to S.W. of Jagdala village; thána Gazol, pargana Azol, district Malda.

The station consists of a tower of sun-dried bricks, enclosing a central pillar of masonry 25·75 feet in height which is marked in the usual manner. The azimuths and perambulated distances of the circumjacent villages are:—Chandipur 30° 28′, mile 0·48; Beldánga 56° 37′, mile 0·94; Gunnagar 248° 29′, miles 1·35; Salálpur 348° 34′, mile 0·51.

XXXI. Naksodal Tower Station, lat. 25° 13′, long. 88° 32′—observed at in 1847 and 1848—is situated about a mile E. by N. of the large village of Batria and 3⅓ miles nearly S. of that of Badimpur; the Punarbhaba stream flows west of the station at a distance of 2 miles; thána Gangarámpur, pargana Khordaha, district Dinagepore.

The station consists of a square tower of masonry 33·67 feet in height which has a mark in the ground floor. The azimuths and perambulated distances of the circumjacent villages are:—Rasúlpur 345° 22′, mile 0·88; Naksodal 348° 53′, mile 0·36; Naupára 37° 28′, mile 0·90; Salgaon 106° 12′, miles 1·02; Lakkhidánga 208° 36′, mile 0·90.

XXXII. Sankrol Tower Station, lat. 25° 17′, long. 88° 22′—observed at in 1847 and 1848—is situated about ⅓ of a mile W. of the village of Sankrol and ½ a mile E. of the road from Gazol to Dinagepore; thána Gazol, pargana Rajnagar, district Maldah.

The station consists of a square tower of masonry 31·00 feet in height which has a mark in the ground floor. The azimuths and perambulated distances of the circumjacent villages are:—Madhpukur 252° 10′, miles 1·70; Lauda 1° 9′, miles 1·18; Deotala 73° 36′, miles 1·76; Okora 170° 59′, miles 1·02.

XXXIII. Indar Náráyanpur (*Indar Naráinpúr*) Tower Station, lat. 25° 23′, long. 88° 34′—observed at in 1848—is within the small village of the same name, a little east of the road which passes along the eastern bank of the Punarbhaba stream and some 2 miles S.S.W. of the old fort of Bhangarh; thána Gangarámpur, pargana Darkot, district Dinagepore.

The station consisted of a square tower of masonry 33·33 feet in height, marked at bottom in the usual manner. The azimuths and perambulated distances of the circumjacent villages are:—Bilbári 61° 34′, mile 0·59; Káliganj (Hát) 158° 6′, miles 1·13; Gangarámpur 287° 8′, miles 2·40; Gopálpur 347° 46′, miles 1·57. The tower was reported by the District Officer in March 1876 to have fallen down.

XXXIV. Manglár, locally known as Mangrail, Tower Station, lat. 25° 26′, long. 88° 23′—observed at in 1848—stands about 400 yards east of the village of the same name and 5 miles W. of the large village of Koir Bora on the Tangan stream; thána Banshibári, pargana Dhonjari, district Dinagepore.

The station consists of a square solid tower enclosing a central pillar of masonry 23·00 feet in height which is marked at top and bottom. The azimuths and perambulated distances of the circumjacent villages are:—Mariala 83° 48′, mile 0·50; Hánsrol 160° 50′, miles 1·19; Bádalpur 259° 26′, miles 1·22; Kátabári 342° 13′, mile 0·56; Nakomári 38° 6′, mile 0·58.

XXXV. Chándol Tower Station, lat. 25° 31′, long. 88° 34′—observed at in 1848—stands about 300 yards N. E. of the nearest portion of the scattered village of Chandol, 8½ miles S. W. by S. of Dinagepore and 3 miles nearly N. of the large village of Káthalhát; thána Banshibári, pargana Bish-hazári, district Dinagepore.

The station consists of a hollow square tower of masonry 34·50 feet in height which has a mark-stone embedded in the ground floor. The azimuths and perambulated distances of the circumjacent villages are:—Pansata 88° 8′, miles 1·23; Mulnapára 184° 25′, mile 0·60; Sháhpur 284° 35′, mile 0·92; Kátabári 12° 36′, miles 1·93.

XXXVI. Atgara (*Ahtgara*) Tower Station, lat. 25° 36′, long. 88° 24′—observed at in 1848—is situated about 200 yards S. of the nearest portion of the scattered village of this name, 1 mile nearly S. by E. of the large village of Nashirhát and 1½ miles E. of the Chirámati stream; thána Káliaganj, pargana Jhapartoil, district Dinagepore.

The station consists of a square solid tower of sun-dried bricks, enclosing a central pillar of masonry 27·83 feet in height and is marked in the usual manner. The azimuths and perambulated distances of the circumjacent villages are:—Gobindpur 182° 45′, miles 1·50; Kujia 170° 24′, mile 0·58; Pakuria 72° 27′, mile 0·53; Mahutor 338° 53′, mile 0·70.

XXXVII. Rámchandpur (*Rámchandpúr*) Tower Station, lat. 25° 40′, long. 88° 35′—observed at in 1848—stands close to a stream called Tuli nadi, about 6 miles W.N.W. of Dinagepore and 1¾ miles N.E. of the large village of Mádhabbáti; thána Rajarámpur, pargana Bijanagar, district Dinagepore.

The station consists of a square tower of masonry 36·50 feet in height, which has a mark-stone embedded in the

ground floor. The azimuths and perambulated distances of the circumjacent villages are:—Bojruk 87° 30′, mile 0·70; Dural 182° 55′, mile 0·65; Sukhdebpur 262° 38′, mile 0·85.

XXXVIII. Chanduria (*Chendoria*) Tower Station, lat. 25° 44′, long. 88° 25′—observed at in 1848—stands about 300 yards N. of the nearest portion of the scattered village of this name, 4¼ miles E. of Lochan village near intersection of roads from Ráiganj and Dinagepore; thána Pírganj, pargana Khára, district Dinagepore.

The station consists of a solid tower of sun-dried bricks, enclosing a central pillar of masonry 20·75 feet in height and is marked in the usual manner. The azimuths and perambulated distances of the circumjacent villages are:—Brijgaon 316° 31′, mile 0·77; Karnai 226° 28′, miles 1·24; Málancha 158° 41′, miles 1·07; Mahádebpur 116° 11′, mile 0·63.

XXXIX. Mokandpur (*Mokundpúr*) Tower Station, lat. 25° 49′, long. 88° 34′—observed at in 1848—stands immediately E. of the scattered village of Mokandpur and on a spot of ground well known as Angarchatta Hát on which a hát or fair is held; thána Pírganj, pargana Shálbári, district Dinagepore.

The station consists of a square solid tower of sun-dried bricks, enclosing a central pillar of masonry 25·00 feet in height, which is marked in the usual manner. The azimuths and perambulated distances of the circumjacent villages are:—Kotgaon 320° 25′, mile 0·44; Guliara 23° 57′, mile 0·40; Rishinia 159° 17′, mile 0·64; Náráyanháti 295° 4′, mile 0·83.

XL. Bhelátor (*Bhelator*) Tower Station, lat. 25° 53′, long. 88° 25′—observed at in 1848—stands about 250 yards N.E. of one of the portions of the scattered village of this name, ½ a mile E. of a road, and between it and the head of a stream falling into the Tangan stream; thána Pírganj, pargana Shálbári, district Dinagepore.

The station consists of a solid tower of sun-dried bricks, enclosing a central pillar of masonry 30·00 feet in height which is marked in the usual manner. The azimuths and perambulated distances of the circumjacent villages are:—Birol 295° 35′, mile 0·85; Godalap 178° 13′, miles 1·87; Kachon 218° 29′, mile 0·72; Gugua 280° 21′, miles 1·01.

XLI. Gauripur (*Gaorípúr*) Tower Station, lat. 25° 58′, long. 88° 34′—observed at in 1848—is situated about ⅓ of a mile S.W. of the village of the same name and a little E. of the high road from Dinagepore to Titalia; thána Thákurgaon, pargana Shálbári, district Dinagepore.

The station consists of a square solid tower of sun-dried bricks, enclosing a central pillar of masonry 22·17 feet in height which is marked in the usual manner. The azimuths and perambulated distances of the circumjacent villages are:—Singia 160° 17′, mile 0·76; Daulatpur 88° 49′, mile 0·77; Begunbári 16° 14′, mile 0·91; Dhandagaon 322° 18′, mile 0·56.

XLII. Lohágara Tower Station, lat. 26° 2′, long. 88° 24′—observed at in 1848—stands about a mile E. of a small stream called Nahara stream; and 7 miles S.W. of the large village of Dakkhin Batina on the high road from Dinagepore to Titalia; thána Thákurgaon, pargana Shálbári, district Dinagepore.

The station consists of a square solid tower of sun-dried bricks, enclosing a central pillar of masonry 27·17 feet in height which is marked in the usual manner. The azimuths and perambulated distances of the circumjacent villages are:—Lakkhipur 215° 56′, mile 0·73; Matrapur 278° 26′, miles 1·30; Ráipur 344° 40′, mile 0·72; Phakdampur 82° 20′, mile 0·44.

XLIII. Kesarbári Tower Station, lat. 26° 8′, long. 88° 34′—observed at in 1848—stands on a tank bank immediately S. of the village of the same name and nearly 4½ miles E.N.E. of the large village of Dakkhin Batina on the high road from Dinagepore to Titalia; thána Thákurgaon, pargana Shálbári, district Dinagepore.

The station consists of a solid tower of sun-dried bricks, enclosing a central pillar of masonry 22·00 feet in height which is marked in the usual manner. The azimuths and perambulated distances of the circumjacent villages are:—Kochubári 353° 57′, mile 0·79; Kuárpur 251° 39′, mile 0·46; Debipur 155° 2′, miles 1·47.

CXXV. (*Of the North-East Longitudinal Series*). Chotáki Tower Station, lat. 26° 11′, long. 88° 23′—observed at in 1848 and 1855—stands on the northern bank of a tank distant 0·44 of a mile to the W. of the village of Chotáki; thána Thákurgaon, pargana Shálbári, district Dinagepore.

The pillar is 23 feet high, isolated and of the solid kind. It carries mark-stones at top, bottom and intermediately. When revisited in 1855 in the course of the operations of the Assam Longitudinal Series, no alteration was made in the construction of the pillar. The circumjacent villages with their azimuths and perambulated distances are:—Bunagaon No. 1 15° 27′, mile 0·33; Bunagaon No. 2 175° 48′, miles 1·27.

CXXVI. (*Of the North-East Longitudinal Series*). Newáni Tower Station, lat. 26° 16′, long. 88° 32′—observed at in 1848, 1853, 1854 and 1855—stands at the N.W. corner of a tank distant about ⅓ of a mile N.W. of the principal straggling village of Jholai, Newáni being the name of the locality in which the station is situated; thána and pargana Boda, tahsíl Rájnagar, district Jalpáiguri.

The pillar is 29·2 feet in height. As originally constructed, the height of the pillar was 24·0 feet; no change was made when it was visited in 1853 and in 1854, but in 1855, when visited again, the height was increased by 5·2 feet and a mark-stone placed on the top in the prolongation of the normal through the original upper mark-stone which was found undisturbed: the pillar is isolated and of the solid kind; in the original construction it carried mark-stones at top, bottom and intermediately. The azimuths and perambulated distances of the circumjacent villages are:—Dúngúpíra 98° 12′, mile 0·65; Ghogochodi 215° 30′, miles 1·03; and Kaluganj 341° 47′, miles 1·72.

NOTE.—In a few instances, the names of principal stations, occurring in the foregoing descriptions, are given by two methods of spelling distinguished from one another by the use of Roman and Italic type; as in IX. Dogáchha (*Dogácha*); the latter spelling is taken from the Alphabetical and Numerical lists which precede the descriptions, and which were printed in 1869: the spelling in Roman type is in accordance with the method authorized by the Government and illustrated in lists of Indian proper names published in 1874 and subsequently. It will be seen that the two methods differ but slightly; notwithstanding where differences exist, both renderings are given, so as to remove all possible doubt as to the identity of a station. The method of spelling authorized by the Government, is hereafter exclusively adopted in the publication of this Series.

J. B. N. HENNESSEY.

June 1879. *In charge of Computing Office.*

CALCUTTA MERIDIONAL 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 1881-82, 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
LXXVIII	Sáthan Girza	Hooghly	P. Chaumáha, Thá. Dhaniakháli	Sáthan	... ...
LXXXI	...	„	P. Arsa, Thá. Hooghly	Chinsurah	... ...
I	Boga Girza	„	P. Salempur, Thá. Bálagarh	Notun Boga	... ...
II	Naupára Girza	„	P. and Thá. Pundooah	Naupára	... ...
III	Jeodhára	Burdwan	Thá. Culna	Jeodhára	"Fallen down, the central pillar is apparently broken" as reported in 1870.
IV	Beliaíti	Nuddea	P. Páuchpur, Thá. Ránaghát	Beliaíti	... ...
V	Arbandi	„	P. Mangrám, Thá. Santipore	Arbandi	Pillar half fallen down as reported in 1870.
VI	Anandbás	„	P. Okra, Thá. Nuddea	Anandbás	Tower fallen down as reported in 1870.
VII	Bahádurpur	„	P. Bhagabán, Thá. Kishnaghur	Bahádurpur	Partly fallen down as reported in 1872.
VIII	Kedapára	Burdwan	Thá. Púrbasthali	Kedapára	"Fallen down, the central pillar is apparently broken" as reported in 1870.
IX	Dogáchhia	Nuddea	P. Bhagabán, Thá. Nákásipára	Dogáchhia	Pillar fallen down as reported in 1875.

NOTE.—Stations LXXVIII and LXXXI appertain to the Calcutta Longitudinal Series of the South-East Quadrilateral. 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
X	Gobipur	Nuddea	P. Bhagabán, Thá. Nákásipára	Gobipur	Partly fallen down as reported in 1872.
XI	Gobindpur	„	P. Bhagabán, Thá. Tehatta	Gobindpur	Pillar fallen down as reported in 1870.
XII	Kistonagar	„	Ditto.	Kistonagar	Ditto.
XIII	Teragaria	„	P. Rajpur, Thá. Meherpore	Teragaria	... ...
XIV	Madhupur	Moorshedabad	P. Kulbária, Thá. Nowáda	Madhupur	... ...
XV	Shisha	Nuddea	P. Teragharia, Thá. Karímpur	Shisha	Pillar entirely fallen down as reported in 1880.
XVI	Imámnagar	Moorshedabad	P. Kulbária, Thá. Hariharpára	Imámnagar	Reported about 12 feet high in 1873; eastern and western sides fallen down in 1878.
XVII	Jitpur	„	P. Goas, Thá. Jelinghee	Jitpur	Partly fallen down as reported in 1872.
XVIII	Chatra	„	P. and Thá. Goas	Chatra	"The remains of the pillar found" as reported in 1867.
XIX	Murcha	„	Ditto.	Banogura	Top of pillar partly broken as reported in 1878.
XX	...	„	...	...	Carried away by the river Ganges as reported in 1874.
XXI	Tabarua	Rajshahye	P. Shurshunipára, Thá. Godagári, Tah. Tullai, Taluka Ruknpur	Shurshunipára	Pillar dilapidated as reported in 1881.
XXII	Gopálpur	„	P. Laskarpur, Thá. Godagári, Tah. Káziháta	Madabpur	Ditto.
XXIII	Burj	Maldah	P. Hudrapur, Thá. Nawabganj	Khetia	"Almost damaged" as reported in 1882.
XXIV	...	„	...	...	Carried away by the river Ganges as reported in 1876.
XXV	Burj	„	P. Chandhi, Thá. Nawabganj	Alapur	In ruins as reported in 1876.
XXVI	...	„	...	...	Carried away by the river Ganges as reported in 1872.
XXVII	Burj	„	P. Paltapur, Thá. Gumáshtapur	Charaldánga	Partly fallen down, height 15 feet as reported in 1882.
XXVIII	„	„	P. Shikárpur, Thá. Gazol	Onáli	"Half broken" as reported in 1882.
XXIX	Kristapur	Dinagepore	P. Pistol, Thá. Pírsháh	Kristapur	... ...

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

No. of Station	Local name	District	Pargana, &c.	Village in which the Station lies	Remarks on the Condition of the Station
XXX	Burj	Maldah	P. Azor, Thá. Gazol	Kámárdánga	About 15 feet high, in a ruined state as reported in 1873.
XXXI	...	Dinagepore	P. Khordaha, Thá. Gangarámpur	Sheoroil	"A heap of earth about 25 feet high" as reported in 1873.
XXXII	Burj	Maldah	P. Rajnagar, Thá. Gazol	Sankrail	In ruins as reported in 1882.
XXXIII	Indra Náráyanpur	Dinagepore	P. Debikot, Thá. Gangarámpur	Indra Náráyanpur	Tower entirely demolished as reported in 1882.
XXXIV	Mangrail	„	P. Dhanjor, Thá. Bangshihari	Mangrail	... ...
XXXV	Chandol	„	P. Beshajor, Thá. Bangshihari	Chandol	Tower entirely fallen down as reported in 1869.
XXXVI	Atgara	„	P. Jhaportoil, Thá. Káliaganj	Kugia	Partly fallen down as reported in 1869.
XXXVII	Forma Rám Chandpur	„	P. Bijánagar, Thá. Rajarámpur	Sukhdebpur	Pillar broken as reported in 1871.
XXXVIII	Chanduria	„	P. Khára, Thá. Pírganj	Chanduria	... ...
XXXIX	Mokandpur	„	P. Salbári, Thá. Pírganj	Mokandpur	Dilapidated as reported in 1882.
XL	Bhelátor	„	Ditto.	Bhelátor	... ...
XLI	Gauripur	„	P. Salbári, Thá. Thákurgaon	Gauripur	Partly fallen down as reported in 1869.
XLII	Lohágara	„	Ditto.	Goálpara	Ditto.
XLIII	Kesarbári	„	Ditto.	Kunúrpur	Ditto.
CXXV	...	„	Ditto.	Chotáki	... ...
CXXVI	...	Jalpáiguri	P. and Thá. Boda, Tah. Rajnagar	Cherakute	... ...

NOTE.—Stations CXXV and CXXVI appertain to the North-East Longitudinal Series. P. stands for pargana, Thá. for thána, and Tah. for tahsíl.

October, 1882.

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

CALCUTTA MERIDIONAL SERIES.

PRINCIPAL TRIANGULATION. TRIANGLES.

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle	Distance		
				Log. feet	Feet	Miles
		"	° ′ ″			
	Sátten, LXXVIII	·28	59 50 17·44	4·8073287	64169·5	12·153
1	Chinsurah, LXXXI	·28	59 46 4·16	4·8070183	64123·7	12·145
	Boga, I	·28	60 23 38·40	4·8097497	64528·2	12·221
	Sátten, LXXVIII	·23	56 31 28·38	4·7531475	56643·2	10·728
2	Boga, I	·22	52 41 32·32	4·7324990	54013·1	10·230
	Niál, II	·23	70 46 59·30	4·8070183	64123·7	12·145
	Boga, I	·18	47 30 20·62	4·6594708	45653·2	8·646
3	Niál, II	·19	66 18 38·15	4·7535709	56698·4	10·738
	Jeodhára, III	·19	66 11 1·23	4·7531475	56643·2	10·728
	Boga, I	·18	53 56 12·42	4·6898101	48956·5	9·272
4	Jeodhára, III	·18	56 38 23·58	4·7040075	50583·3	9·580
	Beliaiti, IV	·19	69 25 24·00	4·7535709	56698·4	10·738
	Jeodhára, III	·17	48 59 42·91	4·6640165	46133·5	8·737
5	Beliaiti, IV	·18	77 47 42·01	4·7763392	59750·2	11·316
	Arbandi, V	·17	53 12 35·08	4·6898101	48956·5	9·272

NOTES.—1. The values of the side are given in the same line with the opposite angle.
2. Stations Sátten, LXXVIII, and Chinsurah, LXXXI, appertain to the Calcutta Longitudinal Series of the South-East Quadrilateral.

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle	Distance		
				Log. feet	Feet	Miles
		"	° ′ ″			
	Jeodhára, III	·19	49 47 38·40	4·6831205	48208·2	9·130
6	Arbandi, V	·19	59 1 5·58	4·7333301	54116·6	10·249
	Anandbás, VI	·20	71 11 16·02	4·7763392	59750·2	11·316
	Arbandi, V	·14	48 59 34·95	4·6079523	40546·4	7·679
7	Anandbás, VI	·14	67 12 39·81	4·6949199	49535·9	9·382
	Bahádurpur, VII	·14	63 47 45·24	4·6831205	48208·2	9·130
	Anandbás, VI	·17	69 34 18·07	4·7527117	56586·4	10·717
8	Bahádurpur, VII	·17	68 14 49·84	4·7488395	56084·1	10·622
	Kedapára, VIII	·16	42 10 52·09	4·6079523	40546·4	7·679
	Bahádurpur, VII	·21	70 21 27·20	4·7879539	61369·7	11·623
9	Kedapára, VIII	·20	49 22 8·61	4·6941872	49452·4	9·366
	Dogáchha, IX	·21	60 16 24·19	4·7527117	56586·4	10·717
	Kedapára, VIII	·20	45 4 55·80	4·6697875	46750·6	8·854
10	Dogáchha, IX	·21	66 33 10·32	4·7822524	60569·3	11·471
	Gobipur, X	·21	68 21 53·88	4·7879539	61369·7	11·623
	Dogáchha, IX	·18	78 39 26·43	4·7846614	60906·2	11·535
11	Gobipur, X	·18	52 31 37·99	4·6928526	49300·7	9·337
	Gobindpur, XI	·17	48 48 55·58	4·6697875	46750·6	8·854
	Gobipur, X	·24	54 55 19·73	4·7501550	56254·2	10·654
12	Gobindpur, XI	·24	62 41 49·61	4·7859077	61081·2	11·568
	Kistonagar, XII	·24	62 22 50·66	4·7846614	60906·2	11·535
	Gobindpur, XI	·20	49 31 40·51	4·6939592	49426·4	9·361
13	Kistonagar, XII	·21	70 29 48·87	4·7870712	61245·1	11·599
	Teragari, XIII	·21	59 58 30·62	4·7501550	56254·2	10·654
	Kistonagar, XII	·19	67 22 30·25	4·7471509	55866·4	10·581
14	Teragari, XIII	·18	57 52 30·56	4·7097567	51257·4	9·708
	Madhupur, XIV	·18	54 44 59·19	4·6939592	49426·4	9·361
	Teragari, XIII	·17	47 44 38·23	4·6415913	43811·8	8·298
15	Madhupur, XIV	·17	61 33 25·66	4·7164066	52048·3	9·858
	Sísa, XV	·17	70 41 56·11	4·7471509	55866·4	10·581
	Madhupur, XIV	·15	77 5 25·23	4·7421892	55231·8	10·461
16	Sísa, XV	·15	52 16 7·93	4·6514245	44815·1	8·488
	Imámnagar, XVI	·15	50 38 26·84	4·6415913	43811·8	8·298
	Sísa, XV	·22	49 24 38·01	4·7185531	52306·2	9·906
17	Imámnagar, XVI	·22	77 16 50·85	4·8272973	67188·9	12·725
	Jitpur, XVII	·22	53 18 31·14	4·7421892	55231·8	10·461
	Imámnagar, XVI	·23	69 53 22·99	4·8101620	64589·5	12·233
18	Jitpur, XVII	·23	60 36 22·39	4·7776326	59928·4	11·350
	Chatra, XVIII	·23	49 30 14·62	4·7185531	52306·2	9·906
	Jitpur, XVII	·23	52 20 47·17	4·7371442	54593·9	10·340
19	Chatra, XVIII	·23	58 9 11·31	4·7677169	58575·6	11·094
	Murcha, XIX	·24	69 30 1·52	4·8101620	64589·5	12·233
	Chatra, XVIII	·22	61 49 55·41	4·7582898	57317·9	10·856
20	Murcha, XIX	·21	61 3 44·53	4·7551152	56900·4	10·777
	Debipur, XX	·21	57 6 20·06	4·7371442	54593·9	10·340

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle			Distance		
						Log. feet	Feet	Miles
		"	°	′	"			
	Murcha, XIX	·24	58	24	32·26	4·7671143	58494·4	11·078
21	Debipur, XX	·24	65	0	32·32	4·7940796	62241·4	11·788
	Sursuni, XXI	·24	56	34	55·42	4·7582898	57317·9	10·856
	Debipur, XX	·17	53	17	59·64	4·6857693	48503·1	9·186
22	Sursuni, XXI	·17	51	28	30·20	4·6751109	47327·2	8·963
	Madabpur, XXII	·18	75	13	30·16	4·7671143	58494·4	11·078
	Sursuni, XXI	·17	53	13	42·94	4·6716790	46954·7	8·893
23	Madabpur, XXII	·17	70	56	3·21	4·7435282	55402·4	10·493
	Khetia, XXIII	·17	55	50	13·85	4·6857693	48503·1	9·186
	Madabpur, XXII	·19	58	37	54·70	4·7371094	54589·5	10·339
24	Khetia, XXIII	·20	74	6	34·73	4·7888118	61491·0	11·646
	Sundarpur, XXIV	·19	47	15	30·57	4·6716790	46954·7	8·893
	Khetia, XXIII	·19	67	52	8·12	4·7550708	56894·6	10·775
25	Sundarpur, XXIV	·18	49	24	31·73	4·6687619	46640·4	8·833
	Alsapur, XXV	·18	62	43	20·15	4·7371094	54589·5	10·339
	Sundarpur, XXIV	·23	59	17	14·30	4·7655108	58278·8	11·038
26	Alsapur, XXV	·24	63	38	40·17	4·7834796	60740·7	11·504
	Dilálpur, XXVI	·23	57	4	5·53	4·7550708	56894·6	10·775
	Alsapur, XXV	·24	80	11	24·12	4·8529756	71281·3	13·500
27	Dilálpur, XXVI	·23	46	8	18·22	4·7173173	52157·6	9·878
	Charaldánga, XXVII	·23	53	40	17·66	4·7655108	58278·8	11·038
	Dilálpur, XXVI	·30	44	50	13·88	4·7557499	56983·6	10·792
28	Charaldánga, XXVII	·31	73	16	37·58	4·8887354	77399·0	14·659
	Onáli, XXVIII	·31	61	53	8·54	4·8529756	71281·3	13·500
	Charaldánga, XXVII	·28	66	58	12·71	4·8368997	68691·0	13·010
29	Onáli, XXVIII	·27	63	15	38·02	4·8238511	66657·8	12·625
	Kisnápur, XXIX	·27	49	46	9·27	4·7557499	56983·6	10·792
	Onáli, XXVIII	·22	45	47	16·39	4·7001533	50136·4	9·496
30	Kisnápur, XXIX	·22	55	5	32·37	4·7586313	57362·9	10·864
	Kámárdánga, XXX	·22	79	7	11·24	4·8368997	68691·0	13·010
	Kisnápur, XXIX	·20	52	34	0·09	4·7171201	52133·9	9·874
31	Kámárdánga, XXX	·20	77	38	50·55	4·8070938	64134·8	12·147
	Naksodal, XXXI	·20	49	47	9·36	4·7001533	50136·4	9·496
	Kámárdánga, XXX	·22	66	41	29·59	4·7842563	60849·4	11·525
32	Naksodal, XXXI	·22	61	24	59·95	4·7647849	58181·5	11·019
	Sankrol, XXXII	·22	51	53	30·46	4·7171201	52133·9	9·874
	Naksodal, XXXI	·29	74	17	52·76	4·8706048	74234·3	14·060
33	Sankrol, XXXII	·29	53	36	0·48	4·7928612	62067·1	11·755
	Indar Náráyanpur, XXXIII	·28	52	6	6·76	4·7842563	60849·4	11·525
	Sankrol, XXXII	·25	54	27	58·84	4·7872350	61268·2	11·604
34	Indar Náráyanpur, XXXIII	·25	45	8	4·86	4·7272345	53362·3	10·106
	Manglár, XXXIV	·26	80	23	56·30	4·8706048	74234·3	14·060
	Indar Náráyanpur, XXXIII	·23	77	54	22·22	4·8454964	70064·2	13·270
35	Manglár, XXXIV	·23	43	19	43·07	4·6916830	49168·1	9·312
	Chandol, XXXV	·23	58	45	54·71	4·7872350	61268·2	11·604

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle	Distance		
				Log. feet	Feet	Miles
		"	° ′ ″			
	Manglár, XXXIV	·27	55 11 45·94	4·7882616	61413·2	11·631
36	Chandol, XXXV	·28	55 17 12·17	4·7887382	61480·6	11·644
	Atgara, XXXVI	·28	69 31 1·89	4·8454964	70064·2	13·270
	Chandol, XXXV	·24	65 16 15·33	4·7991702	62975·3	11·927
37	Atgara, XXXVI	·24	52 22 59·51	4·7397287	54919·8	10·401
	Rámchandpur, XXXVII	·24	62 20 45·16	4·7882616	61413·2	11·631
	Atgara, XXXVI	·22	64 38 47·38	4·7881659	61399·7	11·629
38	Rámchandpur, XXXVII	·22	47 24 3·34	4·6990913	50014·0	9·472
	Chanduria, XXXVIII	·23	67 57 9·28	4·7991702	62975·3	11·927
	Rámchandpur, XXXVII	·23	58 52 31·47	4·7608440	57655·9	10·920
39	Chanduria, XXXVIII	·23	55 23 34·71	4·7437823	55434·8	10·499
	Mokandpur, XXXIX	·23	65 43 53·82	4·7881659	61399·7	11·629
	Chanduria, XXXVIII	·21	58 52 30·48	4·7381748	54723·6	10·364
40	Mokandpur, XXXIX	·20	56 42 50·99	4·7278559	53438·7	10·121
	Bhelátor, XL	·21	64 24 38·53	4·7608440	57655·9	10·920
	Mokandpur, XXXIX	·22	65 9 28·44	4·7691723	58772·3	11·131
41	Bhelátor, XL	·21	57 10 29·42	4·7357897	54423·9	10·308
	Gauripur, XLI	·21	57 40 2·14	4·7381748	54723·6	10·364
	Bhelátor, XL	·21	59 8 20·22	4·7468554	55828·4	10·574
42	Gauripur, XLI	·21	56 12 54·93	4·7328290	54054·2	10·238
	Lohágara, XLII	·22	64 38 44·85	4·7691723	58772·3	11·131
	Gauripur, XLI	·23	66 44 2·67	4·7888408	61495·1	11·647
43	Lohágara, XLII	·23	56 45 4·99	4·7480377	55980·6	10·602
	Kesarbári, XLIII	·22	56 30 52·34	4·7468554	55828·4	10·574
	Lohágara, XLII	·23	67 14 9·35	4·7994143	63010·7	11·934
44	Kesarbári, XLIII	·22	48 36 56·11	4·7098632	51270·0	9·710
	Chotáki, CXXV	·23	64 8 54·54	4·7888408	61495·1	11·647
	Kesarbári, XLIII	·22	60 39 42·31	4·7693857	58801·1	11·137
45	Chotáki, CXXV	·22	50 14 49·05	4·7148154	51858·0	9·822
	Newáni, CXXVI	·23	69 5 28·64	4·7994143	63010·7	11·934

NOTE.—Stations Chotáki, CXXV, and Newáni, CXXVI, appertain to the North-East Longitudinal Series.

November 1878.

J. B. N. HENNESSEY,

In charge of Computing Office.

CALCUTTA MERIDIONAL SERIES.

SECONDARY TRIANGULATION. TRIANGLES.

PRINCIPAL-AUXILIARY STATIONS AND INTERSECTED POINTS.

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	
		° ′ ″				Inch			° ′ ″				Inch
	Boga, I	17 20 12	4·327019	21233	4·021	18		Murcha, XIX	123 5 58	4·865754	73410	13·903	18
46	Niál, II	35 18 40	4·614763	41187	7·801	„	50	Debipur, XX	16 3 0	4·384311	24228	4·589	„
	Pundooah, Chhota Dargáh		4·753147	56643	10·728			Rampore Bauleah Building		4·758290	57318	10·856	
	Boga, I	11 50 22	4·354775	22635	4·287	„		Murcha, XIX	32 43 58	4·595310	39383	7·459	„
47	Beliaiti, IV	15 27 5	4·468229	29392	5·567	„	51	Debipur, XX	19 10 11	4·378696	23916	4·530	„
	Shukre Temple		4·704007	50583	9·580			Kharchâka Factory Bungalow		4·758290	57318	10·856	
	Beliaiti, IV	40 2 21	4·477420	30021	5·686	„		Chandol, XXXV	42 0 52	4·568388	37016	7·011	„
48	Arbandi, V	41 17 54	4·488530	30799	5·833	„	52	Rámchandpur, XXXVII	54 44 32	4·654745	45159	8·553	„
	Santipore Black Temple		4·664017	46134	8·737			Dinagepore s.	83 14 36	4·739729	54920	10·401	†
	Imámnagar, XVI	55 14 44	4·799750	63059	11·943	12							
49	Chatra, XVIII	73 25 11	4·866644	73560	13·932	„							
	Berhampore s.	51 20 5	4·777633	59928	11·350	„							

NOTES.—1. Names followed by Roman numerals are those of Principal Stations. 2. The values of the side are given in the same line with the opposite angle.
† Instrument not known.

December 1879.

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

CALCUTTA MERIDIONAL 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
ALSAPUR, XXV		
Sundarpur, XXIV	48 43 49·05	25
Dilálpur, XXVI	112 22 29·46	26
Charaldánga, XXVII	192 33 53·82	27
Khetia, XXIII	346 0 28·72	25
ANANDBAS, VI		
Jeodhára, III	6 59 2·82	6
Kedapára, VIII	159 0 48·41	8
Bahádurpur, VII	228 35 6·65	7
Arbandi, V	295 47 46·60	6
ARBANDI, V		
Beliaiti, IV	3 37 9·95	5
Santipore Black Temple	44 55 4	48
Jeodhára, III	56 49 45·20	5
Anandbás, VI	115 50 50·97	6
Bahádurpur, VII	164 50 26·06	7
ATGARA, XXXVI		
Manglár, XXXIV	8 7 53·02	36
Chanduria, XXXVIII	181 35 3·50	38
Rámchandpur, XXXVII	246 13 51·10	37
Chandol, XXXV	298 36 50·85	36
BAHADURPUR, VII		
Anandbás, VI	48 37 16·27	7
Kedapára, VIII	116 52 6·28	8
Dogáchha, IX	187 13 33·69	9
Arbandi, V	344 49 30·89	7
BELIAITI, IV		
Boga, I	36 23 51·25	4
Shukre Temple	51 50 56	47
Jeodhára, III	105 49 15·44	4
Santipore Black Temple	143 34 37	48
Arbandi, V	183 36 57·63	5
BERHAMPORE S.		
Chatra, XVIII	228 28 20	49
Imámnagar, XVI	279 48 25	49
BHELATOR, XL		
Lohágara, XLII	178 38 23·29	42
Gauripur, XLI	237 46 43·72	41
Mokandpur, XXXIX	294 57 13·35	40
Chanduria, XXXVIII	359 21 52·09	40
BOGA, I		
Chinsurah, LXXXI*	1 50 0·45	1
Sátten, LXXVIII*	62 13 39·13	1
Pundooah, Chhota Dargáh	97 35 0	46
Niál, II	114 55 11·67	2
Jeodhára, III	162 25 32·47	3
Shukre Temple	204 31 23	47
Beliaiti, IV	216 21 45·07	4
CHANDOL, XXXV		
Indar Náráyanpur, XXXIII	4 37 57·31	35
Manglár, XXXIV	63 23 52·25	35
Atgara, XXXVI	118 41 4·70	36
Rámchandpur, XXXVII	183 57 20·27	37
Dinagepore S.	225 58 12	52
CHANDURIA, XXXVIII		
Atgara, XXXVI	1 35 10·06	38
Bhelátor, XL	179 21 54·92	40
Mokandpur, XXXIX	238 14 25·61	39
Rámchandpur, XXXVII	293 38 0·55	38

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

Name of station with azimuths of surrounding points			No. of triangle giving distance
CHARALDANGA, XXVII		° ′ ″	
Alsapur, XXV		12 34 45·52	27
Dilálpur, XXVI		66 15 3·41	27
Onáli, XXVIII		139 31 41·30	28
Kisnápur, XXIX		206 29 54·29	29
CHATRA, XVIII			
Berhampore	S.	48 31 49	49
Debipur, XX		165 37 15·85	20
Murcha, XIX		227 27 11·48	19
Jitpur, XVII		285 36 23·02	18
Imámnagar, XVI		335 6 37·87	18
CHINSURAH, LXXXI*			
Sátten, LXXVIII*		122 3 47·44	1
Boga, I		181 49 51·88	1
CHOTAKI, CXXV†			
Newáni, CXXVI†		235 35 50·24	45
Kesarbári, XLIII		285 50 39·51	44
Lohágara, XLII		349 59 34·28	44
DEBIPUR, XX			
Madabpur, XXII		170 11 20·33	22
Sursuni, XXI		223 29 20·14	21
Kharcháka Factory		269 19 42	51
Rampore Bauleah Building		272 26 53	50
Murcha, XIX		288 29 52·70	20
Chatra, XVIII		345 36 12·97	20
DILALPUR, XXVI			
Onáli, XXVIII		201 19 51·86	28
Charaldánga, XXVII		246 10 6·04	27
Alsapur, XXV		292 18 24·49	26
Sundarpur, XXIV		349 22 30·25	26
DINAGEPORE S.			
Chandol, XXXV		46 0 46	52
Rámchandpur, XXXVII		129 15 22	52
DOGACHHA, IX			
Bahádurpur, VII		7 14 0·35	9
Kedapára, VIII		67 30 24·75	9
Gobipur, X		134 3 35·28	10
Gobindpur, XI		212 43 1·89	11
GAURIPUR, XLI			
Mokandpur, XXXIX		0 10 39·50	41
Bhelátor, XL		57 50 41·85	41
Lohágara, XLII		114 3 36·99	42
Kesarbári, XLIII		180 47 39·89	43

Name of station with azimuths of surrounding points			No. of triangle giving distance
GOBINDPUR, XI		° ′ ″	
Dogáchha, IX		32 44 56·76	11
Gobipur, X		81 33 52·51	11
Kistonagar, XII		144 15 42·36	12
Teragari, XIII		193 47 23·07	13
GOBIPUR, X			
Kedapára, VIII		22 23 4·67	10
Kistonagar, XII		206 34 12·44	12
Gobindpur, XI		261 29 32·41	11
Dogáchha, IX		314 1 10·58	10
IMAMNAGAR, XVI			
Berhampore	S.	99 53 45	49
Chatra, XVIII		155 8 29·18	18
Jitpur, XVII		225 1 52·40	17
Sisa, XV		302 18 43·47	16
Madhupur, XIV		352 57 10·46	16
INDAR NARAYANPUR, XXXIII			
Naksodal, XXXI		9 29 4·09	33
Sankrol, XXXII		61 35 11·13	33
Manglár, XXXIV		106 43 16·24	34
Chandol, XXXV		184 37 38·69	35
JEODHARA, III			
Niál, II		48 35 21·79	3
Anandbás, VI		186 58 34·94	6
Arbandi, V		236 46 13·53	5
Beliaiti, IV		285 45 56·61	4
Boga, I		342 24 20·37	3
JITPUR, XVII			
Imámnagar, XVI		45 4 35·65	17
Chatra, XVIII		105 40 58·27	18
Murcha, XIX		158 1 45·67	19
Sísa, XV		351 46 4·29	17
KAMARDANGA, XXX			
Onáli, XXVIII		30 28 10·94	30
Sankrol, XXXII		167 0 38·92	32
Naksodal, XXXI		233 42 8·73	31
Kisnápur, XXIX		311 20 59·48	30
KEDAPARA, VIII			
Gobipur, X		202 21 25·55	10
Dogáchha, IX		247 26 21·55	9
Bahádurpur, VII		296 48 30·36	8
Anandbás, VI		338 59 22·61	8

Name of station with azimuths of surrounding points			No. of triangle giving distance
KESARBARI, XLIII		° ′ ″	
Gauripur, XLI		0 47 43·63	43
Lohágara, XLII		57 18 36·19	43
Chotáki, CXXV†		105 55 32·52	44
Newáni, CXXVI†		166 35 15·05	45
KHETIA, XXIII			
Madabpur, XXII		24 2 36·50	23
Sundarpur, XXIV		98 9 11·43	24
Alsapur, XXV		166 1 19·74	25
Sursuni, XXI		328 12 22·48	23
KISNAPUR, XXIX			
Charaldánga, XXVII		26 32 10·78	29
Onáli, XXVIII		76 18 20·32	29
Kámárdánga, XXX		131 23 52·91	30
Naksodal, XXXI		183 57 53·20	31
KISTONAGAR, XII			
Gobipur, X		26 36 10·84	12
Madhupur, XIV		186 21 0·42	14
Teragari, XIII		253 43 30·86	13
Gobindpur, XI		324 13 19·94	12
LOHAGARA, XLII			
Chotáki, CXXV†		170 0 17·26	44
Kesarbári, XLIII		237 14 26·84	43
Gauripur, XLI		293 59 32·06	42
Bhelátor, XL		358 38 17·13	42
MADABPUR, XXII			
Sundarpur, XXIV		145 23 15·61	24
Khetia, XXIII		204 1 10·50	23
Sursuni, XXI		274 57 13·88	22
Debipur, XX		350 10 44·22	22
MADHUPUR, XIV			
Kistonagar, XII		6 21 25·16	14
Imámnagar, XVI		172 57 34·58	16
Sísa, XV		250 2 59·96	15
Teragari, XIII		311 36 25·79	14
MANGLAR, XXXIV			
Sankrol, XXXII		7 2 38·22	34
Atgara, XXXVI		188 7 12·15	36
Chandol, XXXV		243 18 58·36	35
Indar Náráyanpur, XXXIII		286 38 41·66	34

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

Name of station with azimuths of surrounding points		No. of triangle giving distance
Mokandpur, XXXIX	° ′ ″	
Chanduria, XXXVIII	58 18 18·84	39
Bhelátor, XL	115 1 10·03	40
Gauripur, XLI	180 10 38·69	41
Rámchandpur, XXXVII	352 34 24·79	39
Murcha, XIX		
Chatra, XVIII	47 30 10·14	19
Debipur, XX	108 33 54·88	20
Kharchâka Factory	141 17 53	51
Sursuni, XXI	166 58 27·38	21
Rampore Bauleah Building	231 39 53	50
Jitpur, XVII	338 0 8·38	19
Naksodal, XXXI		
Kisnápur, XXIX	3 58 13·71	31
Kámárdánga, XXX	53 45 23·27	31
Sankrol, XXXII	115 10 23·44	32
Indar Náráyanpur, XXXIII	189 28 16·49	33
Newani, CXXVI†		
Chotáki, CXXV†	55 39 45·58	45
Kesarbári, XLIII	346 34 16·71	45
Nial, II		
Sátten, LXXVIII*	5 38 35·35	2
Jeodhára, III	228 32 57·48	3

Name of station with azimuths of surrounding points		No. of triangle giving distance
Nial, II	° ′ ″	
Boga, I	294 51 35·82	2
Pundooah, Chhota Dargáh	330 10 16	46
Onali, XXVIII		
Dilálpur, XXVI	21 22 0·72	28
Kámárdánga, XXX	210 25 56·97	30
Kisnápur, XXIX	256 13 13·58	29
Charaldánga, XXVII	319 28 51·87	28
Ramchandpur, XXXVII		
Chandol, XXXV	3 57 38·16	37
Atgara, XXXVI	66 18 23·56	37
Chanduria, XXXVIII	113 42 27·12	38
Mokandpur, XXXIX	172 34 58·82	39
Dinagepore s.	309 13 6	52
Sankrol, XXXII		
Manglár, XXXIV	187 2 7·68	34
Indar Náráyanpur, XXXIII	241 30 6·77	33
Naksodal, XXXI	295 6 7·54	32
Kámárdánga, XXX	346 59 38·22	32
Satten, LXXVIII*		
Niál, II	185 38 13·09	2
Boga, I	242 9 41·70	1
Chinsurah, LXXXI*	301 59 59·42	1

Name of station with azimuths of surrounding points		No. of triangle giving distance
Sisa, XV	° ′ ″	
Madhupur, XIV	70 6 0·31	15
Imámnagar, XVI	122 22 8·39	16
Jitpur, XVII	171 46 46·62	17
Teragari, XIII	359 24 4·03	15
Sundarpur, XXIV		
Dilálpur, XXVI	169 23 21·01	26
Alsapur, XXV	228 40 35·54	25
Khetia, XXIII	278 5 7·45	24
Madabpur, XXII	325 20 38·21	24
Sursuni, XXI		
Debipur, XX	43 32 20·30	21
Madabpur, XXII	95 0 50·67	22
Khetia, XXIII	148 14 33·78	23
Murcha, XIX	346 57 24·64	21
Teragari, XIII		
Gobindpur, XI	13 48 26·43	13
Kistonagar, XII	73 46 57·26	13
Madhupur, XIV	131 39 28·00	14
Sisa, XV	179 24 6·40	15

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

December 1879.

J. B. N. HENNESSEY,

In charge of Computing Office.

CALCUTTA MERIDIONAL 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 letter 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.
Achutpur s. (*Hooghly*) On W. bank of the Hooghly river. λ 23 2 24·46 L 88 28 57·42	**Anandbás, VI.** (*Vide page 4—T.*) λ 23 21 19·24 L 88 25 7·48 H 67 *h* 32 No. 6	**Arjuna W. s.** (*Burdwan*) In a cultivation plain, 0·3 of a mile N.W. of Arjuna village, and 0·5 of a mile E. of Sadpára; thána Culna. It is marked by a large wooden peg having an iron nail with dot engraved on head. λ 23 8 52·65 L 88 22 24·41
Alaipur Factory, (*Rajshahye*) Chimney. λ 24 11 25·1 L 88 48 27·5	**Arbandi, V.** (*Vide page 4—T.*) λ 23 17 51·17 L 88 32 53·12 H 63 *h* 32 No. 5	**Atgara, XXXVI.** (*Vide page 8—T.*) λ 25 36 12·24 L 88 24 29.21 H 148 *h* 28 No. 36
Alaipur s. (*Rajshahye*) On bank of the Pudda river and about 200 yards S.E. of village. λ 24 22 47·26 L 88 28 53·91	**Arjuna E. s.** (*Burdwan*) In a cultivation plain, 0·2 of a mile N. of village so called, and 0·4 of a mile N. of Koigaria village; thána Culna. It is marked by a large wooden peg having an iron nail with dot engraved on head. λ 23 8 52·87 L 88 22 41·15	**Bábuchak s.** (*Moorshedabad*) On char, about ½ a mile from the Pudda river, and the same distance S.E. of village. λ 24 21 0·67 L 88 28 54·30
Alsapur, XXV. (*Vide page 7—T.*) λ 24 44 19·62 L 88 23 28·16 H 140 *h* 15 No. 25		**Bágdámari Factory,** (*Moorshedabad*) E. chimney of building. λ 24 21 13·7 L 88 23 53·4

Name of station, district, description, co-ordinates &c.

Bágerkhál Flag.
(*24-Pergunnahs*) N. of khál.

	° ′ ″
λ	22 57 24
L	88 27 43

Bahádurpur, VII.
(*Vide page 4—T.*)

λ	23 25 44·91
L	88 30 34·01
H	75
h	32

No. 7

Báhirgáchhi s.
(*Nuddea*) In a cultivation plain, 0·5 of a mile N. of village so called, and 1·4 miles S.E. of Bilkumari village; thána Nákásipára. The station has a mud platform 3 feet high and 10½ feet in diameter, and is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23 40 34·75
L	88 26 59·20

Balágarh Flag.
(*Hooghly*) S. end of village.

λ	23 6 11
L	88 31 17

Balágarh Ganj s.
(*Hooghly*) On W. bank of the Hooghly river, to S. side of Bazar. It is marked by a platform of paka bricks, about 3 feet high, having a brick with circle and dot engraved on it and embedded underneath.

λ	23 7 30·27
L	88 30 37·55

Balágarh Hát s.
(*Hooghly*) 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 with circle and dot engraved on it and embedded underneath.

λ	23 7 11·37
L	88 30 54·95

Balágarh s.
(*Hooghly*) In centre of village.

λ	23 6 44·65
L	88 30 57·89

Báliághát s.
(*Rajshahye*) On left bank of the Pudda river and close to the village of that name.

λ	24 20 44·62
L	88 41 12·54

Bámanabad s.
(*Moorshedabad*) About 15 or 20 yards from village so called and 30 yards from the Pudda river.

λ	24 18 14·78
L	88 43 46·64

Name of station, district, description, co-ordinates &c.

Bandel Church,
(*Hooghly*) Steeple.

	° ′ ″
λ	22 55 5·8
L	88 26 19·0

Bangaria s.
(*Nuddea*) In a cultivation plain, 0·7 of a mile S. of village so called, and the same distance N.E. of Bholádánga village; thána Nákásipára. The station has a platform 4½ feet high and 10½ feet in diameter, and is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23 34 27·85
L	88 28 24·68

Bánsbária s.
(*Hooghly*) About ½ a mile S.E. of temple of that name.

λ	22 57 37·34
L	88 27 0·56

Bánsbária Temple,
(*Hooghly*) Spire.

λ	22 57 48·9
L	88 26 35·7

Báramásia Factory.
(*Moorshedabad*)

λ	24 14 44·5
L	88 44 41·1

Báramásia s.
(*Moorshedabad*) On char, about ½ a mile E. of factory so called, the same distance W. of the Pudda river, 1·5 miles N. of Ságarpára, and 0·9 of a mile N.E. of Sardárpára village.

λ	24 14 38·69
L	88 45 12·44

Barnia s.
(*Nuddea*) About 0·2 of a mile E. of village so called, and 0·8 of a mile N.W. of Buranimi; thána Tehatta. The station has a platform 4 feet high and 11 feet in diameter, and is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23 43 19·22
L	88 28 19·77

Básdebpur s.
(*Moorshedabad*) On a high Pípal tree, 0·1 of a mile S.W. of village so called and 0·7 of a mile N. of Beládánga village.

λ	24 10 44·06
L	88 40 54·67

Beliaiti, IV.
(*Vide page 4—T.*)

λ	23 10 14·95
L	88 32 21·90
H	59
h	31

No. 4

Name of station, district, description, co-ordinates &c.

Belpukur s.
(*Nuddea*) On a jack tree on the E. skirt of the village of Belpukur, 1·2 miles N. of Sondenga, and 1·4 miles S.W. of Dípchandrapur village; thána Nuddea. It is marked by an iron nail with dot engraved on head, driven in the tree top cut horizontal for the purpose and measuring 16½ feet above the ground.

	° ′ ″
λ	23 28 30·39
L	88 27 37·23

Belwa s.
(*Rajshahye*) On left bank of the Pudda river and about 100 yards S. of factory.

λ	24 21 58·64
L	88 32 49·06

Berhampore s.
(*Moorshedabad*) On hospital.

λ	24 6 4·34
L	88 17 33·39

No. 49

Bhagabánpur s.
(*Rajshahye*) Close to the large village so called. Pudda river flows by this village.

λ	24 15 0·82
L	88 46 49·41

Bhelátor, XL.
(*Vide page 9—T.*)

λ	25 53 16·77
L	88 24 37·85
H	184
h	30

No. 40

Bidantapur s.
(*Hooghly*) 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

Bishnupára s.
(*Moorshedabad*) About ½ a mile from the Pudda river and about 300 yards N. of village.

λ	24 22 28·89
L	88 26 34·25

Boga, I.
(*Vide page 4—T.*)

λ	23 3 31·41
L	88 27 0·47
H	70
h	44

No. 1

Brahmapára s.
(*Burdwan*) In a cultivation plain, 0·3 of a mile N.E. of village so called, and 0·8 of a mile N.W. of Panchdeoli village; thána Culna. The station has a platform 18 inches high and 10 feet in diameter, and is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23 10 27·74
L	88 21 8·13

Name of station, district, description, co-ordinates &c.

Chaksimli s.
(*Burdwan*) In a low paddy field, 0·4 of a mile N.W. of village so called, 0·3 of a mile N. of Jherua, and 0·5 of a mile S. of Hijuli village; thána Culna. The station has a mud platform 4 feet high and 10 feet in diameter, and has upper and lower centre marks, each consisting of a large wooden peg and an iron nail with dot engraved on head.

	° ′ ″
λ	23 10 15·91
L	88 24 15·83

Chandol, XXXV.
(*Vide page 8—T.*)

λ	25 31 20·57
L	88 34 17·80
H	141
h	35

No. 35

Chandraháti s.
(*Hooghly*) On W. bank of the Hooghly river and about ¼ a mile E. of Rághabpur village.

λ	22 59 48·93
L	88 27 4·61

Chanduria, XXXVIII.
(*Vide page 9—T.*)

λ	25 44 27·47
L	88 24 44·33
H	160
h	21

No. 38

Charaldánga, XXVII.
(*Vide page 7—T.*)

λ	24 52 43·95
L	88 25 31·39
H	149
h	18

No. 27

Chatra, XVIII.
(*Vide page 6—T.*)

λ	24 12 58·31
L	88 26 3·40
H	101
h	37

No. 18

Chenga s.
(*Nuddea*) On W. embankment of a tank, about 12 feet above the surrounding country, 0·6 of a mile S.E. of Chenga village, and the same distance N.W. of Bekoil; thána Nákásipára. It is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23 37 4·31
L	88 27 22·84

Name of station, district, description, co-ordinates &c.

Chinsurah, LXXXI.†
(*Vide page 8—T.*)

	° ′ ″
λ	22 52 55·87
L	88 26 38·51
H_s	86·40*
h	9

No. 1

Chinsurah, Armenian Church,
(*Hooghly*) Steeple.

λ	22 53 26·9
L	88 26 40·3

See Synoptical Vol. of the Calcutta Longitudinal Series of the South-East Quadrilateral.

Chinsurah Church,
(*Hooghly*) Steeple.

λ	22 52 58·1
L	88 26 39·9

Chogdah (Naya) House.
(*Nuddea*) Flag on Zamíndár's paka three-storied house in village.

λ	23 5 23·2
L	88 34 2·7

Chogdah (Purána) s.
(*Nuddea*) On E. bank of the Hooghly river.

λ	23 4 53·38
L	88 33 21·68

Chotáki, CXXV.‡
(*Vide page 9—T.*)

λ	26 10 32·16
L	88 22 46·09
H	224
h	23

No. 44

Chunchuria s.
(*Nuddea*) In a cultivation plain, 0·4 of a mile N. of village so called, and 1·4 miles W. of Chenga village; thána Nákásipára. The station has a mud platform 3 feet high and 11 feet in diameter, and is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23 37 40·56
L	88 25 40·52

Culna Temple No. 1.
(*Burdwan*) Spire of Rája of Burdwan's E. temple.

λ	23 13 13·6
L	88 24 32·8

Culna Temple No. 2.
(*Burdwan*) Spire of Rája of Burdwan's W. temple.

λ	23 13 16·5
L	88 24 31·1

Dayárámpur Factory.
(*Moorshedabad*) Indigo factory flag.

λ	24 11 4·1
L	88 44 51·6

Name of station, district, description, co-ordinates &c.

Debipur, XX.
(*Vide page 6—T.*)

	° ′ ″
λ	24 22 4·37
L	88 23 30·56
H	101
h	32

No. 20

Dhánchipur s.
(*Nuddea*) In a cultivation plain, 0·7 of a mile S. W. of village so called, and 1 mile E. of Bara Simli village; thána Nákásipára. It is on a mud platform 6½ feet high and 14 feet in extreme breadth at summit, constructed partly by the villagers for a young Pípal tree, and is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23 39 38·65
L	88 28 38·61

Dígalkándi s.
(*Moorshedabad*) About 40 yards W. of village so called.

λ	24 9 54·37
L	88 44 23·07

Dilálpur, XXVI.
(*Vide page 7—T.*)

λ	24 47 59·09
L	88 13 43·26
H	108
h	16

No. 26

Dinagepore s.
(*Dinagepore*) On Mr. Grant's house.

λ	25 36 31·36
L	88 40 12·53

No. 52

Dípchandrapur s.
(*Nuddea*) On an elevated piece of fallow land, 0·4 of a mile S.E. of village so called, and the same distance N.W. of Dhobalia village; thána Nuddea. The station has a mud platform 3 feet high and 11 feet in diameter, and is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23 28 57·49
L	88 29 3·03

Dogáchha, IX.
(*Vide page 5—T.*)

λ	23 33 51·01
L	88 31 40·87
H	69
h	35

No. 9

Dumeria s.
(*Moorshedabad*) On char, about ¼ a mile from the Pudda river and close to village of that name.

λ	24 21 52·44
L	88 27 49·07

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

Name of station, district, description, co-ordinates &c.

Dumra s.
(*Moorshedabad*) About ¼ a mile from the Pudda river and 60 yards S.W. of village of that name.

	°	′	″
λ	24	19	25·99
L	88	30	4·39

Dumurdaha s.
(*Hooghly*) On W. bank of the Hooghly river and W. of village of that name.

λ	23	1	59·00
L	88	28	37·75

Dúmurgáchha s.
(*Hooghly*) On S. embankment of tank, about 150 yards S. of the village so called and 0·4 of a mile N. of Korne; thána Balágarh. It is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23	8	24·85
L	88	25	19·33

Durgapur s.
(*Nuddea*) On E. bank of the Hooghly river.

λ	23	1	49·56
L	88	28	55·86

Durlabhpur Flag.
(*Hooghly*) 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

Ekcháka s.
(*Burdwan*) On N. embankment of an old tank, within 100 yards of N.W. skirts of Ekcháka village and 0·7 of a mile S.W. of Khagrakur Dulepára; thána Culna. It is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23	10	56·64
L	88	22	57·94

Farídpur Factory.
(*Moorshedabad*) Flag on Indigo factory.

λ	24	8	46·0
L	88	39	12·0

Farídpur s.
(*Moorshedabad*) In the Indigo lands, 0·5 of a mile N.W. of village so called, and about the same distance N. of the factory.

λ	24	9	13·40
L	88	39	3·20

Garipa s.
(*24-Pergunnahs*) On E. bank of the Hooghly river.

λ	22	54	4·76
L	88	27	12·04

Name of station, district, description, co-ordinates &c.

Gau Ghát Tree Flag,
(*Moorshedabad*) In village, on right bank of the Jwalangi river.

	°	′	″
λ	23	51	7
L	88	29	59

Gaunagar s.
(*Nuddea*) On char about 1½ miles W. of Naya Chogdah.

λ	23	5	23·27
L	88	32	25·66

Gauripur, XLI.
(*Vide page* 9—T.)

λ	25	58	26·89
L	88	33	42·73
H	190		
h	22		

No. 41

Ghogu s.
(*Nuddea*) In village.

λ	23	5	52·01
L	88	34	13·47

Gobindpur, XI.
(*Vide page* 5—T.)

λ	23	40	41·92
L	88	36	27·56
H	68		
h	27		

No. 11

Gobipur, X.
(*Vide page* 5—T.)

λ	23	39	13·02
L	88	25	39·50
H	73		
h	26		

No. 10

Gokulchak s.
(*Moorshedabad*) About 0·4 of a mile S.W. of village so called.

λ	24	11	20·53
L	88	38	29·31

Gustia s.
(*Nuddea*) S. of the khál.

λ	22	58	54·82
L	88	27	57·62

Hájinagar s.
(*24-Pergunnahs*) On E. bank of the Hooghly river, about ¼ a mile S. of Durgapur village, and 1¼ miles N.W. of Gauripur distillery.

λ	22	55	5·40
L	88	26	49·92

Name of station, district, description, co-ordinates &c.

Hamídpur Factory.
(*Nuddea*) Flag on a jack tree close to the factory.

	°	′	″
λ	23	4	31·9
L	88	34	7·1

Hamjánpur s.
(*Hooghly*) On a piece of fallow land, close to a Pípal tree, 0·3 of a mile W. of village so called, and 0·7 of a mile N. of Beniápukur; thána Balágarh. It is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23	7	8·23
L	88	25	46·14

Hánspukuria s,
(*Nuddea*) In a cultivation plain, 1·2 miles N.E. of village so called, 0·8 of a mile S. of Notipota, and 0·7 of a mile N. of Bairbanda; thána Tehatta. The station has a platform 3 feet high and 10½ feet in diameter, and is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23	43	53·68
L	88	31	57·77

Hariákhál Factory,
(*Nuddea*) Chimney.

λ	23	6	33·3
L	88	34	14·7

Hátchála s.
(*Nuddea*) In a cultivation plain, about ¼ a mile W. of village so called, 0·6 of a mile N. of Jugpur, and about 70 yards E. of the high road Kishnaghur to Berhampore; thána Nákásipára. The station has a platform 2½ feet high and 10½ feet in diameter, and is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23	35	14·45
L	88	26	51·99

Hawáspur s.
(*Moorshedabad*) About 50 or 60 yards from the Pudda river and 20 or 30 yards E. of village of that name.

λ	24	19	42·28
L	88	36	7·64

Hooghly, Imámbára Garden s.
(*Hooghly*) On paka embankment, marked with an iron nail.

λ	22	54	25·76
L	88	26	43·36

Hooghly, Kachahri Ghát s.
(*Hooghly*) About ¼ of a mile N.W. of Imámbára Garden s.

λ	22	54	40·45
L	88	26	28.24

Hooghly River, A_1 Flag,
(*24-Pergunnahs*) On Indigo char, about ¼ a mile W. of Nandanbáti village.

λ	22	56	34
L	88	27	5

Name of station, district, description, co-ordinates &c.

Hooghly River, A_1 s.
(*Hooghly*) On W. bank of the river and about ¼ a mile S. of Dumurdaha village.

	°	′	″
λ	23	1	40·54
L	88	28	20·67

Hooghly River, A_2 Flag.
(*Hooghly*) On Indigo char, on N. bank, at junction of the Balágarh jhíl with the river.

λ	23	7	15
L	88	31	1

Hooghly River, A_2 s.
(*Nuddea*) On E. bank of the river and near Purána Chogdah village.

λ	23	4	44·38
L	88	33	31·72

Hooghly River, B s.
(*Hooghly*) On W. bank of the river and near Dádpur village.

λ	23	2	28·89
L	88	29	0·33

Hooghly River, B_1 Flag.
(*Hooghly*) On W. bank, at the bend of the river.

λ	22	56	43
L	88	26	56

Hooghly River, B_2 Flag.
(*Hooghly*) On Indigo char, about 1 mile S.E. of Balágarh village.

λ	23	7	22
L	88	31	33

Hooghly River, C_1 Flag.
(*Hooghly*) On Indigo char, about a mile E. of Bánsbária village.

λ	22	57	33
L	88	27	5

Hooghly River, C_2 Flag.
(*Hooghly*) On Indigo char, about 1½ miles E. of Balágarh village.

λ	23	7	36
L	88	32	2

Hooghly River, D_1 Flag.
(*Nuddea*) On Indigo char, about ¼ a mile W. of Kánchrapára village.

λ	22	57	38
L	88	27	22

Hooghly River, D_2 Flag.
(*Hooghly*) On Indigo char, about 2 miles N.E. of Balágarh village.

λ	23	8	1
L	88	32	1

Name of station, district, description, co-ordinates &c.

Hooghly River, E Flag.
(*Hooghly*) On Indigo char, about ¼ a mile S.E. of Madhusúdanpur village.

	°	′	″
λ	23	0	23
L	88	27	48

Hooghly River, F Flag.
(*Hooghly*) On Indigo char, about ¼ of a mile S. of Madhusúdanpur village.

λ	23	0	15
L	88	27	32

Hooghly River, G Flag.
(*Hooghly*) On Indigo char, about a mile S. of Madhusúdanpur village.

λ	22	59	36
L	88	27	34

Hooghly River, a_1 s.
(*Nuddea*) On Indigo char, about ¼ of a mile W. of Sukhságar village.

λ	23	3	34·06
L	88	30	3·81

Hooghly River, a_2 s.
(*Hooghly*) On Indigo char, about a mile S. of Bhabánipur village.

λ	23	6	19·28
L	88	31	29·32

Hooghly River, b_1 s.
(*Nuddea*) On Indigo char, about a mile W. of Sukhságar village.

λ	23	3	8·29
L	88	29	50·42

Hooghly River, b_2 s.
(*Hooghly*) On Indigo char, E. bank of the river.

λ	23	6	44·93
L	88	31	6·56

Hooghly River, c s.
(*Nuddea*) On Indigo char, E. bank of the river, about ¼ a mile N.W. of Sukhságar village.

λ	23	3	49·93
L	88	30	29·50

Hooghly River, No. 1 Flag.
(*Nuddea*) On Indigo char, W. bank of the river, about a mile S.W. of Naya Chogdah.

λ	23	4	53
L	88	33	13

Hooghly River, No. 1 s.
(*Hooghly*) On Indigo char, right bank of the river.

λ	23	4	0·37
L	88	31	59·11

Name of station, district, description, co-ordinates &c.

Hooghly River, No. 2 s.
(*Nuddea*) On Indigo char, about 1½ miles S.W. of Naya Chogdah.

λ	23	4	29·87
L	88	32	52·19

Hooghly River, No. 2_a Flag.
(*Hooghly*) On Indigo char, right bank of the river.

λ	23	4	0
L	88	32	28

Hooghly River, No. 2_b Flag.
(*Nuddea*) On Indigo char, W. bank of the river, 1½ miles W. of Naya Chogdah.

λ	23	5	34
L	88	32	39

Hooghly River, No. 3 Flag.
(*Nuddea*) On Indigo char, W. bank of the river, ¼ a mile S.W. of Naya Chogdah.

λ	23	5	13
L	88	33	12

Hukarhara Factory,
(*Moorshedabad*) Chimney.

λ	24	8	2·1
L	88	43	0·3

Husainnagar s.
(*Moorshedabad*) About 0·8 of a mile E. of village so called.

λ	24	9	28·19
L	88	42	3·73

Imámnagar, XVI.
(*Vide page 5—T.*)

λ	24	3	59·64
L	88	30	35·56
H	91		
h	36		

No. 16

Indar Náráyanpur, XXXIII.
(*Vide page 8—T.*)

λ	25	23	15·10
L	88	33	34·49
H	129		
h	33		

No. 33

Isabpur s.
(*Rajshahye*) On bank of the Pudda river, and about ¼ of a mile S.E. of village of that name.

λ	24	18	35·58
L	88	45	13·95

Name of station, district, description, co-ordinates &c.

Ishwarchandrapur s.
(*Nuddea*) On W. bank of the Jwalangi river, 0·3 of a mile N.E. of Ishwarchandrapur village; thána Tehatta. The station has a platform 3 feet high and 10½ feet in diameter, and is marked by a large wooden peg having an iron nail with dot engraved on head.

	°	′	″
λ	23	45	27·90
L	88	30	26·55

Jagpur Flag.
(*Nuddea*) In village, about a mile N. of Naya Chogdah.

λ	23	6	39
L	88	34	20

Jakmári No. 1 s.
(*Nuddea*) On Indigo char, N. bank of the river, at the junction of the branch with the main stream of the Hooghly river.

λ	23	5	7·66
L	88	33	25·29

Jakmári No. 2 s.
(*Nuddea*) On Indigo char, opposite to Naya Chogdah.

λ	23	5	33·55
L	88	33	52·38

Jashra s.
(*Nuddea*) Close to the bazar.

λ	23	4	42·01
L	88	33	15·66

Jeodhára, III.
(*Vide page 4—T.*)

λ	23	12	26·98
L	88	23	56·94
H	82		
h	44		

No. 3

Jhorubáti s.
(*Burdwan*) On S. embankment of a tank adjoining the S. face of Jhorubáti village, and 0·5 of a mile E. of Goda; thána Culna. It is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23	11	28·31
L	88	21	49·05

Jitpur, XVII.
(*Vide page 6—T.*)

λ	24	10	5·74
L	88	37	15·21
H	106		
h	40		

No. 17

Name of station, district, description, co-ordinates &c.

Jitpur s.
(*Nuddea*) In a low cultivation plain, 0·8 of a mile N.W. of village so called, and 1·3 miles N.E. of Kishtochandrapur; thána Tehatta. It is marked by a large wooden peg having an iron nail with dot engraved on head, and protected by a paka brick platform.

	°	′	″
λ	23	45	30·46
L	88	33	18·95

Kailáshpur s.
(*Hooghly*) In a cultivation field, on the boundary between the villages of Kailáshpur and Chalálpur, 0·1 of a mile from the former and the same distance N.E. of the latter; thána Balágarh. It is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23	6	9·85
L	88	24	41·55

Kámárdánga, XXX.
(*Vide page 7—T.*)

λ	25	8	3·12
L	88	24	5·53
H	176		
h	26		

No. 30

Kámárháti s.
(*Nuddea*) On a slightly elevated cultivation field, about ¾ of a mile S. of village so called, 0·4 of a mile N. of Chupipota, and 1·1 miles S.W. of Ghaisar village; thána Nuddea. The station has a mud platform 2½ feet high and 10 feet in diameter, and is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23	30	51·32
L	88	27	56·38

Káni-Bámni s.
(*Burdwan*) In a cultivation plain, 0·3 of a mile S. of village so called, and 0·6 of a mile N.E. of Kaliansri village; thána Culna. The station has a platform 3½ feet high and 10 feet square, and is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23	7	12·89
L	88	24	6·77

Kántálbágán Factory,
(*Nuddea*) Chimney.

λ	23	3	32·3
L	88	32	44·3

Kántálbágán s.
(*Nuddea*) On left bank of the Hooghly river, about 1½ miles E. of Sukhságar village.

λ	23	3	39·00
L	88	32	17·93

Kántálpára s.
(*24-Pergunnahs*) On E. bank of the Hooghly river, N. of and close to the mouth of a khál.

λ	22	52	50·24
L	88	27	13·47

Name of station, district, description, co-ordinates &c.

Káshipur s.
(*Moorshedabad*) About 0·6 of a mile E. of village so called.

	°	′	″
λ	24	12	17·27
L	88	39	53·43

Kátlámári Silk Factory.
(*Moorshedabad*)

λ	24	17	6·9
L	88	37	48·7

Kedapára, VIII.
(*Vide page 4—T.*)

λ	23	29	58·04
L	88	21	31·67
H	76		
h	38		

No. 8

Kesarbári, XLIII.
(*Vide page 9—T.*)

λ	26	7	41·33
L	88	33	51·25
H	231		
h	22		

No. 43

Keuta s.
(*Hooghly*) On W. bank of the Hooghly river, about ¼ of a mile S.E. of village.

λ	22	55	32·82
L	88	26	39·94

Khairámári s.
(*Moorshedabad*) On a high Pípal tree, on W. side of the large village so called.

λ	24	11	48·89
L	88	41	23·68

Kharcháka Factory,
(*Rajshahye*) S.W. angle of parapet above roof of building.

λ	24	22	8·8
L	88	30	36·5

No. 51

Kharcháka s.
(*Rajshahye*) On bank of the Pudda river, and about 12 paces from the factory bungalow.

λ	24	22	7·84
L	88	30	37·55

Khetia, XXIII.
(*Vide page 6—T.*)

λ	24	36	51·25
L	88	25	30·37
H	151		
h	19		

No. 23

Name of station, district, description, co-ordinates &c.

Khidarpur s.
(*Moorshedabad*) About 30 or 40 yards S.E. of village so called.

	o ′ ″
λ	24 19 37·84
L	88 39 30·06

Kishnaghur City,
(*Nuddea*) Tree flag.

λ	23 23 20
L	88 32 37

Kishtopur Bazar,
(*Burdwan*) Tree flag.

λ	23 10 43
L	88 22 25

Kishtopur s.
(*Burdwan*) On a small piece of fallow land, 0·5 of a mile S.E. of village, 0·7 of a mile S.W. of Utra and the same distance N. of Somragar village; thána Culna. It is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23 7 45·15
L	88 20 31·20

Kisnápur, XXIX.
(*Vide page 7—T.*)

λ	25 2 34·83
L	88 30 54·82
H	140
h	23

No. 29

Kistonagar, XII.
(*Vide page 5—T.*)

λ	23 48 14·23
L	88 30 33·72
H	85
h	37

No. 12

Kodálkáti s.
(*Rajshahye*) On left bank of the Pudda river, and about 60 yards S. of village.

λ	24 21 37·06
L	88 35 24·16

Kushtia s.
(*Nuddea*) On E. embankment of a tank, elevated about 10 feet above the surrounding country, 0·4 of a mile S. of village so called and the same distance N.W. of Dhopát; thána Tehatta. It is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23 42 1·09
L	88 30 39·70

Name of station, district, description, co-ordinates &c.

Lohágáchha s.
(*Nuddea*) In a cultivation plain, 0·7 of a mile N. of village so called, 1 mile E. of Kanchkuli, and 0·4 of a mile W. of the high road from Kishnaghur to Berhampore; thána Nákásipára. The station has a platform 4 feet high and 12 feet in diameter, and is marked by a large wooden peg having an iron nail with dot engraved on head.

	o ′ ″
λ	23 33 6·48
L	88 27 31·30

Lohágara, XLII.
(*Vide page 9—T.*)

λ	26 2 12·04
L	88 24 23·78
H	205
h	27

No. 42

Madabpur, XXII.
(*Vide page 6—T.*)

λ	24 29 46·39
L	88 22 3·24
H	128
h	11

No. 22

Madár s.
(*Rajshahye*) On vats belonging to factory near village so called.

λ	24 21 20·52
L	88 38 53·47

Madhupur, XIV.
(*Vide page 5—T.*)

λ	23 56 38·97
L	88 31 34·84
H	92
h	33

No. 14

Magra Bazar,
(*Hooghly*) Tree flag S. of the suspension bridge and river.

λ	22 59 13
L	88 25 0

Mágura s.
(*Hooghly*) On a small piece of fallow land, 0·5 of a mile N.E. of village so called, and 0·3 of a mile W. of Gutra village; thána Chhota Pundooah. It is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23 7 7·05
L	88 19 38·91

Maheshganj Indigo Factory.
(*Nuddea*) Weathercock on tree, left bank of the Jwalangi river.

λ	23 25 7·6
L	88 26 54·2

Name of station, district, description, co-ordinates &c.

Májirchara s.
(*Hooghly*) On Indigo char, about ¾ of a mile E. of Balágarh.

	o ′ ″
λ	23 7 1·76
L	88 31 20·68

Manglár, XXXIV.
(*Vide page 8—T.*)

λ	25 26 9·34
L	88 22 54·33
H	126
h	23

No. 34

Mendia s.
(*Nuddea*) On E. bank of the Hooghly river.

λ	23 0 43·74
L	88 28 15·72

Miápur s.
(*Nuddea*) On a young Pípal tree on S. skirt towards the W. end of village so called; thána Nuddea. It is marked by an iron nail with dot engraved on head, driven in the tree top cut horizontal for the purpose and measuring 17½ feet above ground.

λ	23 26 15·72
L	88 26 14·61

Milchi s.
(*Burdwan*) On S.E. corner of an old tank, 0·1 of a mile S.E. of Milchi village, 0·3 of a mile S. of Chagaon, 0·6 of a mile N.W. of Dampára, and 1·3 miles W. of the large village of Badla; thána Culna. It is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23 9 5·26
L	88 20 33·96

Minápur s.
(*Hooghly*) On W. bank of the Hooghly river.

λ	22 57 4·24
L	88 27 30·61

Mokandpur, XXXIX.
(*Vide page 9—T.*)

λ	25 49 27·80
L	88 33 40·89
H	170
h	25

No. 39

Mukhtiárpur s.
(*Hooghly*) On W. bank of the Hooghly river.

λ	23 3 33·15
L	88 29 49·48

Munshipára s.
(*Moorshedabad*) On bank of the Pudda river, and about 500 yards S.W. of village of that name.

λ	24 18 46·61
L	88 42 8·15

Name of station, district, description, co-ordinates &c.

Murcha, XIX.
(*Vide page 6—T.*)

	°	′	″
λ	24	19	3·88
L	88	33	18·26
H	93		
h	30		

No. 19

Naihâti Ghât Flag.
(*24-Pergunnahs*) On paka ghât.

λ	22	53	29·1
L	88	27	20·0

Naksodal, XXXI.
(*Vide page 8—T.*)

λ	25	13	8·65
L	88	31	43·11
H	129		
h	34		

No. 31

Narsinghpur s.
(*Moorshedabad*) In centre of village so called, 0·2 of a mile N.W. of Galadoria, and 0·3 of a mile S. of Gudagari village.

λ	24	11	21·75
L	88	44	37·92

Naya Sarai s.
(*Hooghly*) On W. bank of the Hooghly river, at the mouth and N. of the khál.

λ	23	1	4·44
L	88	27	52·88

Neki s.
(*Nuddea*) In a cultivation plain, 0·3 of a mile S. of Neki village, same distance N.W. of Khajúri, and 0·7 of a mile E. of Ghaisar; thána Nuddea. The station has a platform 2½ feet high and 10½ feet in diameter, and is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23	31	32·03
L	88	29	10·78

Newáni, CXXVI*.
(*Vide page 10—T.*)

λ	26	16	0·95
L	88	31	39·10
H	267		
h	29		

No. 45

Niál, II.
(*Vide page 4—T.*)

λ	23	7	27·64
L	88	17	50·09
Hs	39·11†		
h	36·0		

No. 2

Name of station, district, description, co-ordinates &c.

Niámatpur s.
(*Nuddea*) In village.

	°	′	″
λ	23	7	20·63
L	88	33	37·73

Nishchindeepore s.
(*Nuddea*) In a cultivation plain, 1·3 miles N.E. of village so called, and about a mile S.E. of Shámnagar; thána Tehatta. It is marked by a large wooden peg having an iron nail with dot engraved on head, and protected by a paka brick platform.

λ	23	46	53·26
L	88	32	21·44

Nuddea Palm Tree.
(*Nuddea*) Conspicuous palm tree in city.

λ	23	24	58
L	88	24	59

Onáli, XXVIII.
(*Vide page 7—T.*)

λ	24	59	53·24
L	88	18	49·32
H	172		
h	21		

No. 28

Panpa Idga,
(*Hooghly*) Pinnacle.

λ	23	6	32·3
L	88	19	49·6

Pátharghâta s.
(*Burdwan*) On a small piece of fallow land, 0·6 of a mile S.E. of Utra village, 0·8 of a mile N. of Jámgaon, and 0·3 of a mile S.W. of the W. extremity of Pátharghâta Goálpára; thána Culna. It is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23	7	40·41
L	88	21	30·76

Porádánga Flag.
(*Nuddea*) On Indigo char, 0·3 of a mile S.W. of village.

λ	23	5	48
L	88	32	49

Porádánga No. 1 s.
(*Nuddea*) On N. bank of the Hooghly river, about ½ a mile N.E. of Naya Chogdah.

λ	23	6	7·05
L	88	34	10·39

Porádánga No. 2 s.
(*Nuddea*) About 0·3 of a mile from N. end of village.

λ	23	6	50·97
L	88	34	2·10

Name of station, district, description, co-ordinates &c.

Porádánga No. 3 s.
(*Nuddea*) At N.W. end of village.

	°	′	″
λ	23	7	12·52
L	88	33	27·95

Prasádnagar s.
(*24-Pergunnahs*) On E. bank of the Hooghly river.

λ	22	54	41·78
L	88	26	50·32

Premtali Ghât,
(*Rajshahye*) Tree Flag.

λ	24	23	28
L	88	27	4

Premtali s.
(*Rajshahye*) On bank of the Pudda river, and close to village of that name.

λ	24	23	29·74
L	88	26	58·66

Pudda River, A s.
(*Nuddea*) On an extensive char, about a mile N. of Udaynagar.

λ	24	10	9·14
L	88	45	55·33

Pudda River, B s.
(*Nuddea*) At the source of the Jwalangi river and on its E. bank.

λ	24	11	35·93
L	88	45	53·40

Pundooah (Chhota) Dargáh.
(*Hooghly*) Pinnacle of Sháh Safiudín's dargáh.

λ	23	4	25·1
L	88	19	43·2

No. 46

Rájballabhpur s.
(*Hooghly*) Close to the factory so called.

λ	23	5	48·01
L	88	31	56·84

Rámchandpur, XXXVII.
(*Vide page 8—T.*)

λ	25	40	23·29
L	88	34	59·21
H	155		
h	37		

No. 37

Rámchandrapur Factory,
(*Nuddea*) Chimney.

λ	24	6	48·5
L	88	46	0·2

Rámnagar Flag.
(*Hooghly*) About a mile N.E. of Raghunáthpur village.

λ	23	1	22
L	88	28	7

* Of the North-East Longitudinal Series.

† This height refers to the mark-stone let into the ground floor of the tower.

Name of station, district, description, co-ordinates &c.

Rampore Bauleah Building.
(*Rajshahye*) W. angle of easternmost building.

	° ′ ″
λ	24 21 32·7
L	88 36 43·8

No. 50

Rampore Bauleah Kachahri.
(*Rajshahye*) Flag on roof of Magistrate's kachahri or residency.

λ	24 21 43·1
L	88 37 45·9

Rampore Bauleah s.
(*Rajshahye*) About 50 yards S.W. of Collector's bungalow.

λ	24 21 30·30
L	88 37 7·79

Rukushpur Flag.
(*Hooghly*) In village, at junction of the Durlabhpur jhíl with the Hooghly river.

λ	23 4 24
L	88 30 23

Sádípur Tree Flag.
(*Nuddea*) In village, on left bank of the Jwalangi river.

λ	23 53 9
L	88 32 14

Sáibdánga Mark.
(*Hooghly*) On W. bank of the Hooghly river, S.W. of the village of that name, and E. of Balágarh jhíl. It is marked by a platform of paka bricks, about 3 feet high, having a brick with circle and dot engraved on it and embedded underneath.

λ	23 8 49·48
L	88 31 6·63

Sankrol, XXXII.
(*Vide page* 8—T.)

λ	25 17 24·71
L	88 21 43·03
H	144
h	31

No. 32

Sánpukur s.
(*Burdwan*) On S.E. corner of the embankment of a new tank adjoining the S. side of village, 0·5 of a mile S.E. of E. Pára of Bahirkuli, and 0·3 of a mile S.E. of Káparpur village; thána Culna. It is marked by a large wooden peg having an iron nail with dot engraved on head.

λ	23 8 9·56
L	88 19 15·00

Santipore Black Temple.
(*Nuddea*)

λ	23 14 20·5
L	88 29 5·8

No. 48

Sarda s.
(*Rajshahye*) Close to the large village of Sarda, and about 100 yards W. of the silk factory.

λ	24 17 37·20
L	88 46 39·43

Name of station, district, description, co-ordinates &c.

Sátten, LXXVIII*.
(*Vide page* 8—T.)

	° ′ ″
λ	22 58 35·02
L	88 16 53·25
H	0
h	44

No. 1

Sháhganj Ghát Temple.
(*Hooghly*) Spire of N. temple.

λ	22 56 5·9
L	88 26 53·7

Sháhganj s.
(*Hooghly*) On W. bank of the Hooghly river.

λ	22 56 24·51
L	88 27 3·02

Shibpur Khál s.
(*Nuddea*) On E. bank and S. of junction of the khál with the Hooghly river. It is marked by a platform of paka bricks, about 3 feet high, having a brick with circle and dot engraved on it and embedded underneath.

λ	23 8 31·77
L	88 31 54·27

Shibpur No. 1 s.
(*Nuddea*) On E. bank of the Hooghly river.

λ	23 7 39·85
L	88 32 58·76

Shibpur No. 2 s.
(*Nuddea*) On E. bank of the Hooghly river.

λ	23 7 52·63
L	88 32 29·66

Shibpur No. 3 s.
(*Nuddea*) 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

Shukre Temple.
(*Hooghly*) Spire of temple on W. bank of the Hooghly river, about 100 feet high.

λ	23 7 56·4
L	88 29 11·2

No. 47

Sísa, XV.
(*Vide page* 5—T.)

λ	23 59 6·90
L	88 38 58·96
H	90
h	34

No. 15

Sítanagar s.
(*Moorshedabad*) About ½ a mile S.W. of village so called.

λ	24 11 0·63
L	88 42 37·24

Name of station, district, description, co-ordinates &c.

Sukhságar Factory.
(*Nuddea*) Flag close to Mr. Larruletta's factory house.

	° ′ ″
λ	23 3 32·5
L	88 31 32·0

Sukhságar Flag.
(*Nuddea*) On Indigo char.

λ	23 3 43
L	88 31 37

Sukhságar s.
(*Nuddea*) On E. bank of the Hooghly river.

λ	23 3 50·37
L	88 31 11·57

Sukhságar Temple.
(*Nuddea*) Spire of black temple in town.

λ	23 3 8·8
L	88 30 50·5

Sundarpur, XXIV.
(*Vide page* 7—T.)

λ	24 38 7·64
L	88 15 44·65
H	116
h	26

No. 24

Sursuni, XXI.
(*Vide page* 6—T.)

λ	24 29 4·64
L	88 30 46·39
H	121
h	15

No. 21

Tángan s.
(*Rajshahye*) On bank of the Pudda river, and about 300 yards N.E. of village of that name.

λ	24 19 51·77
L	88 43 48·33

Táránagar s.
(*Moorshedabad*) On bank of the Pudda river, and about 150 yards N. of village of that name.

λ	24 19 46·55
L	88 37 56·42

Teragari, XIII.
(*Vide page* 5—T.)

λ	23 50 31·24
L	88 39 4·82
H	87
h	32

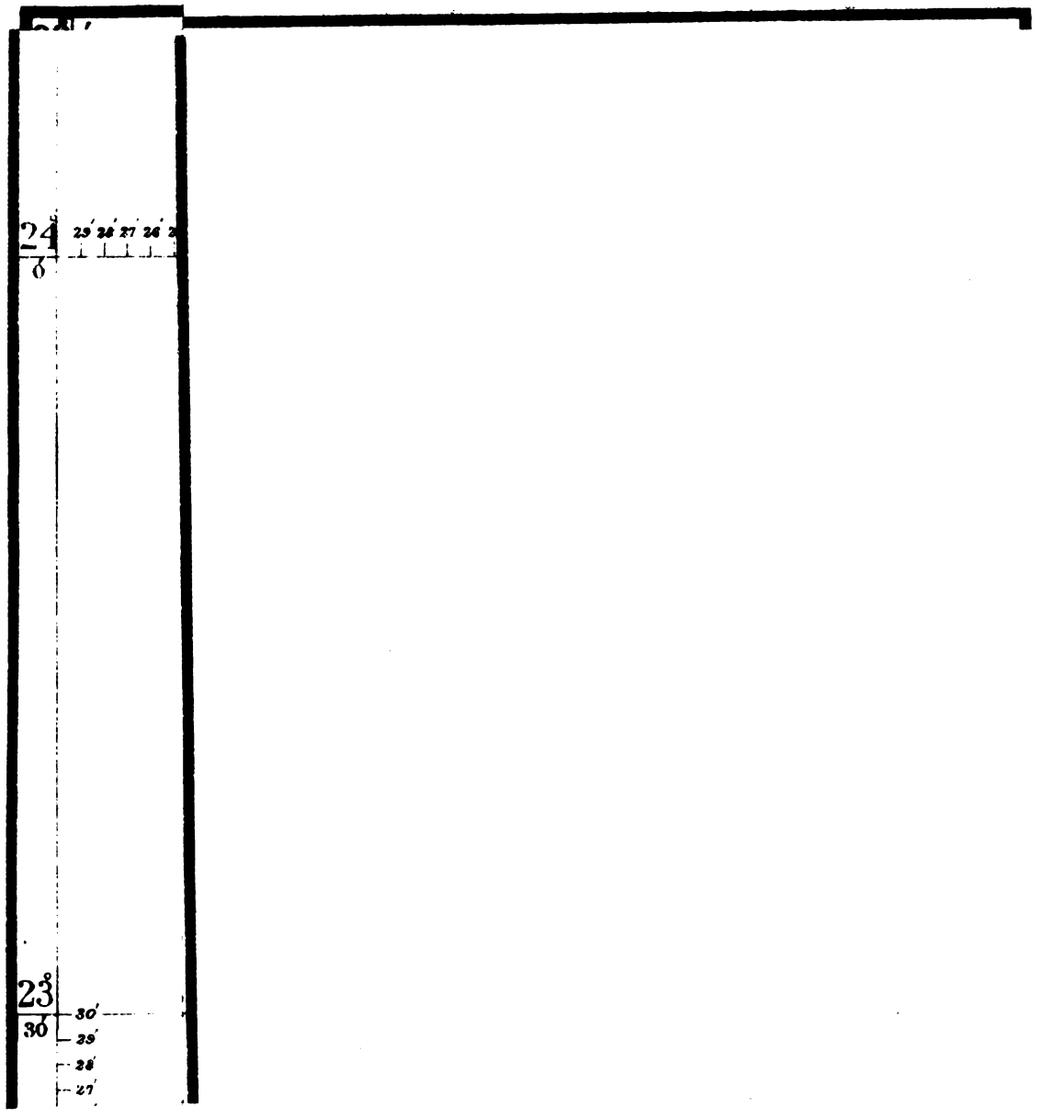
No. 13

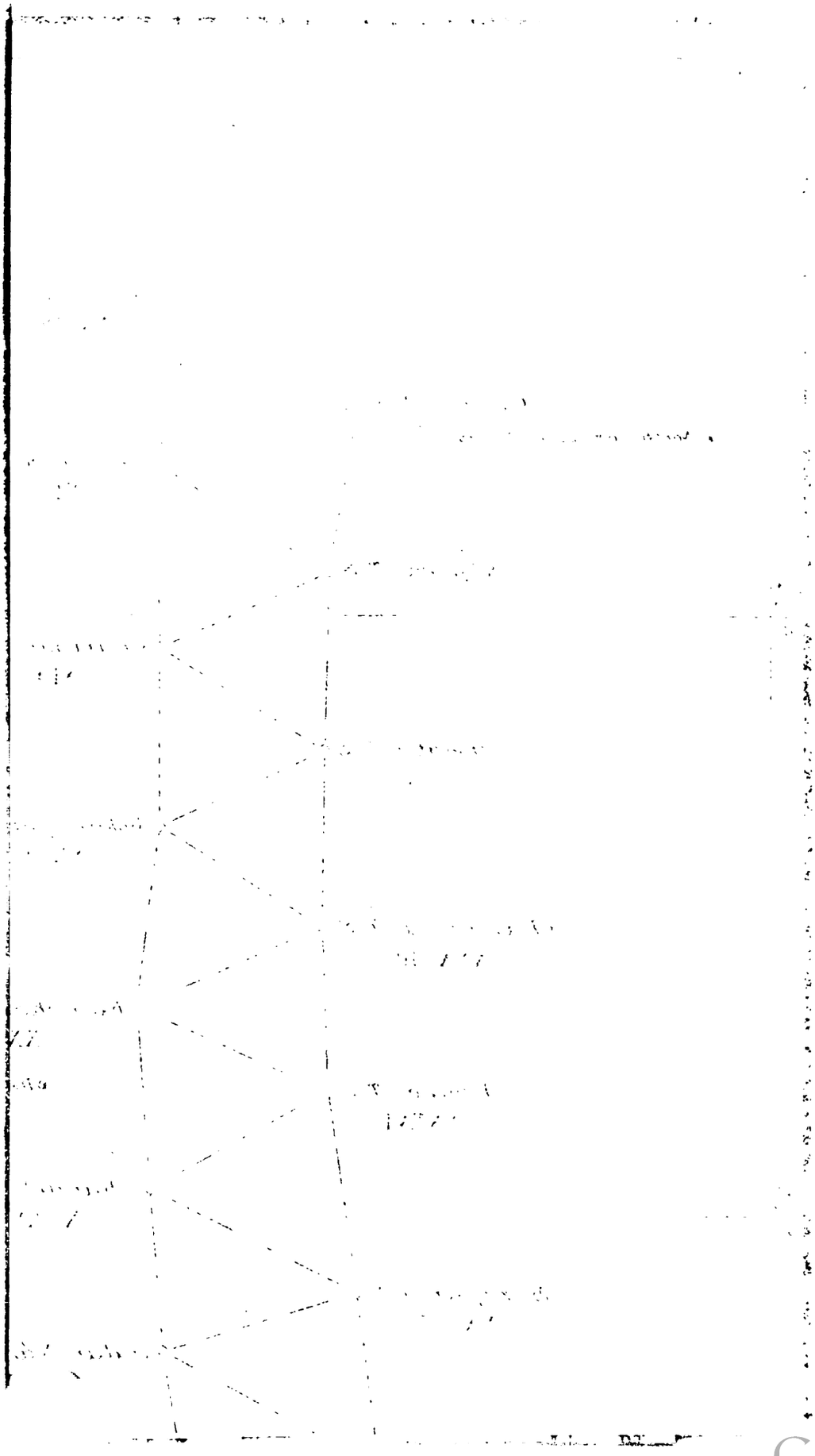
* Of the Calcutta Longitudinal Series of the South-East Quadrilateral.

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Tiktikipára s. (*Moorshedabad*) Near village so called, and about 20 yards from the Pudda river.	Tribeni Ghát s. (*Hooghly*) At the mouth and N. of the khál. It is marked by an iron nail on N. corner of the paka ghát.	Uttarpára s. (*Rajshahye*) Close to village so called.
	o ′ ″	o ′ ″
λ 24 16 53·65	λ 22 59 0.46	λ 24 11 55·80
L 88 45 15·82	L 88 26 42·67	L 88 47 26·84

August 1880.

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





BRAHMAPUTRA MERIDIONAL SERIES.

BRAHMAPUTRA MERIDIONAL SERIES—(LONG. 90°).

INTRODUCTION.

As the East Calcutta Longitudinal Series approached completion in the field season of 1866-67, the Officer in charge, Lieutenant (now Major) H. R. Thuillier, R.E., was instructed by the Superintendent of the Great Trigonometrical Survey, Lieutenant-Colonel (now Lieutenant-General) J. T. Walker, R. E., that his party would be next employed in carrying a chain of quadrilaterals or polygons along the meridian of 90° to connect the East Calcutta and Assam Longitudinal Series. This triangulation, between the parallels of 23° and 26°, was especially required to complete the basis, which had already been partially supplied by the two series just named, and by the Calcutta Meridional and Eastern Frontier Series, for the survey of the districts of Nuddea (Nadia) and Jessore (Jasor), the divisions of Rajshahye (Rájsháhai) and Dacca (Dháka) and other portions of Eastern Bengal. As the chain for a considerable portion of its extent would follow the course of the Brahmaputra River, it was to receive the name of the Brahmaputra Series.

Lieutenant Thuillier completed his operations on the East Calcutta Longitudinal Series on the 18th March 1867, and then made preparations for commencing the new undertaking.

The part of the country where the stations of the East Calcutta Longitudinal Series were situated, from which the new chain was to spring, was at this season of the year very difficult to traverse. It was covered by vast *jhíls* or swamps, intersected by a net-work of water courses which, during the rainy season and for a short time after, are navigable by small boats, and then communication is easiest. In the dry season when the water courses cease to be navigable, communication is much restricted. Lieutenant Thuillier, therefore, determined to commence operations in the neighbourhood of Furreedpore (Faríd pur)—a civil station which lies in the course of the proposed chain, but is situated about 30 miles north of its origin—where the ground is higher.

Having procured boats, he proceeded, accompanied by Mr. O'Sullivan, up the Megna and Ganges Rivers to Furreedpore, and began the selection of stations and clearing of rays. This was attended with many difficulties, for during the whole of April there were frequent storms and almost daily rain. Towards the end of the month the native employés of the party began to break down and there were several cases of fever, which considerably reduced the working strength of the establishment. Thus, on the 1st May, after having selected 5 stations and cleared 63 miles of rays, it became necessary to close work for the season.

Season 1867-68.

PERSONNEL.

Lieut. H. R. Thuillier, R.E., Surveyor, 2nd Grade.
Mr. C. J. Neuville, Civil Assistant, 4th Grade.
„ F. W. Ryall, Sub-Assistant, 1st Grade.
„ G. A. Harris, „ 2nd „

Lieutenant Thuillier in reporting on his operations of the field season of 1866–67, urged that those of the next season should be entirely of a preliminary character; because there was no prospect of completing the building of sufficient towers at the stations of observation in time to commence final observations before the season for doing so had expired. Owing to the moist climate of Bengal, the structures* had to be made of burnt brick set in mortar; the bricks, which had to be moulded at the tower sites, took long to dry before they were in a fit state to be burnt; the other necessary materials had to be brought from long distances over a most difficult country to traverse, and in which labour was scarce and hard to procure; and rain often falls to retard the progress of the operations. Furthermore, but one assistant could be spared to supervise building operations, the others being required for the selection of sites and clearing rays. Sufficient towers might perhaps be ready by the end of March to warrant the commencement of final observations; but, by that time, the weather is usually very unsettled and the country, owing to its low level, is quickly submerged, making travelling and the transport of the large theodolite very difficult. The Superintendent acceded to Lieutenant Thuillier's recommendation, and thus only the approximate operations were carried on during the field season of 1867–68.

The party assembled at Calcutta during the first week in November; but owing to the damage done to the boating by a cyclone which occurred on the 2nd of that month, it was not until the 23rd that a sufficiency of boats could be obtained to enable the main camp to be started by water. It proceeded through the Sunderbunds (Sundarbans) by Khoolna (Khulna) and Kooshtea (Kushtia) to Furreedpore, a circuitous route, but the quickest available at that time of year. Messrs. Neuville and Ryall were detached *en route* to operate on the approximate series in the southern portion of the Furreedpore district, where three stations remained to be selected.

Lieutenant Thuillier with the main camp reached Furreedpore on the 9th December and commenced carrying the approximate series northwards, a work on which he continued to be engaged until the 1st April. Messrs. Neuville and Ryall, after completing the work on which they were first detailed, proceeded northwards to aid Lieutenant Thuillier. On the 4th April the *chota barsát*, or short period of wet weather which usually heralds the near approach of the regular rainy season, set in with heavy rain and storms. As no intermission occurred for 10 days, by which time the country was nearly submerged, and Lieutenant Thuillier saw no prospect of being able to advance his work further, he closed operations and returned to Calcutta, which his party reached on the 27th *idem*. Mr. Harris was engaged throughout the season in building towers of which he completed ten, and partially built two more; he had collected materials for two others, by the middle of June, when he was obliged to leave the field and return to recess quarters.

The approximate series had now been extended a direct distance of 81 miles, and embraced 22 stations arranged in hexagons of a very symmetrical character. The operations

* The forms of Principal Stations adopted for this Series are described on page 8—*v*.

had involved the clearance of 410 miles of trial lines and 296 miles of final rays, mostly through heavy jungle.

The triangulation followed the course of the Ganges and of the Jamoona (Jamuna) branch of the Brahmaputra River. The changes in the channels of these streams, which run through a sandy soil, are very great. Islands are annually formed in some places and washed away in others; and the banks undergo considerable alterations during each rainy season. Owing to the breadth of the rivers and their shifting character it was not always possible to establish stations sufficiently removed from them to ensure safety from destruction; but as much care and foresight were observed as possible; and thus up to the present time, 1882, only four stations out of forty-nine have been carried away, *viz.*, Bangaon (xv), Párkoksa (xxvii), Boládánga (xxxv), and Halkáchar (xxxvii).

The districts in which the operations lay are those of Furreedpore, Dacca, Mymensingh (Maimansingh) and Pubna (Pabna). In the Furreedpore district, where the series commences, the ground level is low and the surface of the country is covered by immense morasses over which grow long reed grass and other aquatic plants. These morasses extend for miles without affording a spot of dry ground, excepting the small artificial mounds on which the villagers' huts are placed, and the banks of the rivers and streams by which the swamps are intersected. This part of the country is very sparsely inhabited. Communication is most difficult, and is principally carried on in small boats or canoes hollowed out of trunks of trees. Advancing northwards the country gradually rises and becomes densely populated: the villages are of great extent and surrounded by valuable groves of mangoe, palm and betelnut, obstacles which considerably impede trigonometrical operations. This part of Furreedpore is richly cultivated, the principal crops being rice, *dál* (a kind of pulse), sugar-cane, indigo and tobacco. On the low land along the course of the Ganges wheat and gram are also grown. On the left bank of the river in the Dacca district, the country is low and inundated for the greater portion of the year: the surface soil is a mixture of sand and clay: there are no roads and the traffic is carried on entirely by boat. The chief products are rice, safflower, gram, indigo and jute. The portions of the Mymensingh and Pubna districts in which the operations were carried on were of a similar nature. In the Furreedpore and Dacca districts numerous Indigo Factories were found scattered over the area under triangulation; but by far the greater number proved to be deserted and in ruins.

Season 1868-69.

Personnel.

Lieut. H. R. Thuillier, R.E., Dy. Supt., 2nd Grade.
Mr. C. J. Neuville, Surveyor 3rd „
„ F. W. Ryall, Assistant Surveyor 1st „
„ G. A. Harris, „ 2nd „

The next field season the party assembled at Calcutta from Head Quarters on the 1st November, and there made arrangements for taking the field. Messrs. Neuville and Harris were instructed to proceed to the point where the approximate work had closed the previous season, the former to continue the approximate series northwards and the latter to resume the building of towers; and on the 17th Lieutenant Thuillier and Mr. Ryall started by boat, for Daulatpur T.S. (xvii of the East Calcutta Longitudinal Series), one of those stations from which the Brahmaputra Series emanates, and where final operations were to commence.

Daulatpur was reached on the 24th. The large theodolite was got in position by the 2nd December, when final operations were commenced with the determination of an azimuth, the stars employed being 51 Cephei (Hev.) and λ Ursæ Minoris, at opposite elongations.

On the 10th January the whole of Bengal was visited by a severe earthquake. Lieutenant Thuillier was observing at the time on the top of Saidpur T.S., (III), which is 40 feet high. The motion communicated to the tower was rather alarming. There were three distinct shocks which occupied 45 seconds, the first occurring at $4^h\ 53^m$ p.m. The wave appeared to pass from S.W. to N.E. After the shocks were over Lieutenant Thuillier noticed that the spirit level of his instrument continued to oscillate for 20 minutes.

During the early portion of the season great delay was caused in the observations, owing to the heavy fog which invariably rose immediately after sunset and continued till some time after sunrise. This fog entirely precluded any work being done by night, as usual, to lamps; and until the end of January the measures of the horizontal angles were restricted to heliotrope observations taken for about two hours daily. In February the fog diminished; but a new source of trouble took its place. As the dry season advanced the water in the morasses decreased, causing the reeds and jungle to die and dry up: the inhabitants now set fire to them in all directions to clear the ground for cultivation, and the atmosphere became charged with smoke and haze which frequently rendered even the heliotropes invisible. After completing observations at Paipára T.S., (x), the end of the third hexagon, Lieutenant Thuillier closed work on the 9th April. The three new triangles, fixing the side Maheshpur–Pákdiha, and which with three triangles of the East Calcutta Longitudinal Series form a hexagon, have since been considered to belong to the latter series, and the stations are numbered XX and XXI of that series.

As the country lies so low, and is so readily submerged it is far from healthy. When the rainy season commences, and at the close, fever is very prevalent. As the hot season approaches the land becomes thoroughly dry and the water in the small streams stagnates, while good fresh water is difficult to procure, and thus another source of sickness is produced. During the month of March Lieutenant Thuillier found it necessary to sink wells at all his stations, the water in the pools and streams being too foul even for bathing purposes. Cholera invariably appears at this season of the year and is sometimes very severe.

Season 1869-70.

PERSONNEL.

Capt.	H. R. Thuillier, R.E.	Dy. Supt.,	2nd Grade.
Mr.	C. J. Neuville,	Surveyor	3rd „
„	G. A. Harris,	Assistant Surveyor	2nd „
„	J. F. Trotter,	„	2nd „

The party again took the field early in November 1869, Mr. Harris having been despatched in advance to push on the tower building. On reaching Kooshtea Messrs. Neuville and Trotter were detached to take up the approximate operations, after which Lieutenant (then Captain) Thuillier, with the main camp, proceeded down the Ganges by boat to Mathura. He commenced final observations on December 1st at Bháranga T.S., (XIII), whence he proceeded to Tepri T.S., (XI), where he took a set of circum-polar star observations, employing the same stars as at Daulatpur T.S. Observations at Chámtia T.S., (XII), and Bani T.S., (XIV), were also completed this month.

Early in January Captain Thuillier was informed by the Superintendent that owing to financial difficulties of the Government of India, there was reason to anticipate early instruc-

tions to reduce the expenditure of the Department very largely, probably to the extent of a quarter, and that this would necessitate the suspension of two if not more Trigonometrical parties. The Brahmaputra Series being one of the most expensive, owing to the character of the country it traversed, would naturally be the first to be stopped, and steps were at once to be taken to arrange for the cessation of operations at the close of the current field season. In view of this the further advancement of the approximate series was to be stopped, while Captain Thuillier's endeavours were to be directed to the completion of as much final triangulation as the resources at his disposal would allow. The native establishment was to be forthwith reduced as far as the altered circumstances of the operations would admit, and the elephants, of which several were attached to the party, were to be sold.

In compliance with these directions, all operations in advance of the Basalia polygon—this being the limit up to which Captain Thuillier anticipated he could carry the final observations—were suspended. The approximate operations had at this time been advanced 36 miles beyond that limit, leaving only about 60 miles to complete the connection with the Assam Longitudinal Series.

Captain Thuillier brought his season's work to a close on the side Párkoksa (XXVI)–Poelsa (XXV) of the Basalia polygon on the 22nd March, thus completing 3 hexagonal figures and advancing the principal triangulation a distance of 56 miles.

Before arrangements had been finally made for the entire suspension of operations, intimation was received that the reductions in the Survey Department would be less than was at first contemplated; the Superintendent was thus enabled to retain a small establishment for the further prosecution of the work in the following season.

The triangulation executed during this season followed the course of the Jamoona River in the Dacca, Pubna and Mymensingh districts, commencing near Goalundo and extending along both banks of the river to a little distance above Serajgunj (Sirájganj), a subdivisional station of the Pubna district, which is the principal mart of the jute trade. The country traversed was very similar to that previously operated in excepting that it was slightly higher and drier. It was perfectly flat, and a good deal cut up by small rivers and streams which are navigable during the rains but dry up for the most part in the hot months. The villages were smaller, further apart and less wooded.

The weather throughout the season was more favourable than that previously experienced; but the fog and mist which invariably rose after sunset precluded all night observations. The whole of the observations were therefore taken to heliotropes and the progress of the work was much delayed.

Season 1870-71.

PERSONNEL.

W. G. Beverley, Esq. Assistant Supt. 2nd Grade.
Mr. C. J. Neuville, Surveyor 3rd „
„ G. A. Harris, Assistant Surveyor 1st „

Captain Thuillier having been appointed to the charge of the topographical survey in Kumaun and Garhwál, made over the reduced Brahmaputra party to Mr. W. G. Beverley on the 12th October 1870. The small establishment at Mr. Beverley's disposal only enabled him to undertake the extension of the approximate series. This had been carried up as far as the side Halkáchar (XXXVII)–Jánkípur (XXXVI) in fairly regular hexagons, and he had hoped to be able

to employ similar figures to the end of the chain; but the nature of the country would not admit of it.

Mr. Beverley had been directed to avail himself if possible of the spurs from the Karaibári or Western Gáro Hills bordering the Brahmaputra River, for the sites of stations on the eastern flank of the Series, in order to dispense with tower stations and their attendant heavy expenses. At that time there was some doubt whether it would be possible to establish stations of the principal triangulation, at each of which the surveyors would be liable to have to encamp for several days continuously, if the progress of the observations was at all impeded by bad weather, on these hills, as their inhabitants were somewhat unruly and might be tempted to make a raid on an unprotected survey camp containing valuable instruments and other property which would excite their cupidity. In fact but for the difficulty of crossing the Gáro Range the Series would probably have been carried along a meridian half a degree to the east of the adopted meridian. But it was found that by selecting stations on the lower spurs, and avoiding the higher hills in the interior, all difficulties of this nature would be avoided and the operations might be carried on without risk of political complications. These spurs generally run parallel to each other down to the Brahmaputra, are of nearly the same altitude for a considerable distance towards the main range, and are densely covered to their summits with heavy interlaced bamboo and other jungle, and tall elephant grass. The selection of stations on these hills was not an easy matter; however by the end of December, three sites, *viz.*, Singmári, Peshkárbhita and Gáropára, were discovered, which when cleared of forest were found to be visible both mutually and from the stations in the plains. To the east of these, Rangira, a station of the Gáro Hills Topographical Survey, now became available for connection, forming the easternmost station of the last polygon.

By the end of February all the trial rays had been carried, and sites fixed for the remaining stations in the plains, and before the field season closed final rays had been cleared between the stations as far as the side Narsinghbanj (XLIV)–Peshkárbhita (XLIII).

The whole of the country traversed by the approximate series between the side Párkoksa–Poelsa and the termination of the Series—excepting the hilly tract on the eastern flank extending for about 35 miles—is intersected by numerous large and small rivers. The soil is of so loose and sandy a character, that even the small streams have been known to shift their channels $\frac{3}{4}$ths of a mile in one season, and the changes in the channel of the Brahmaputra have a far wider range: there are traces of this river having once flowed 18 miles from its present bed. A comparison of the ground with maps prepared only 13 years previously shewed how much the face of the country had been altered; it was difficult even to ascertain the positions of some of the villages and streams.

The changes here alluded to rendered the existence of a few of the towers very precarious. Párkoksa, for instance, which was the previous season $1\frac{1}{2}$ miles from the river, was found this season to be only $\frac{1}{4}$th of a mile distant, and during the rainy season of 1872 it was completely washed away.

When the party took the field again in 1871, Mr. Beverley had been placed in charge of the Assam (Assám) Valley triangulation in addition to the Brahmaputra Series, and he was himself employed on the former all the season. Thus Messrs. Neuville and Harris were alone available for duty on the latter, and after a time Mr. Harris was also withdrawn. The only work executed was building stations and clearing rays, save that Mr. Neuville found it expedient to change the position adopted for Gobindpur (XLVII), the river having approached within 40 feet of the original site.

Season 1871-72

PERSONNEL.

W. G. Beverley, Esq., Assistant Supt., 2nd Grade.
Mr. C. J. Neuville, Surveyor, 2nd „
„ G. A. Harris, Assistant Surveyor, 1st „

The Series was transferred in May 1872 to the charge of Captain Carter, who had previously been engaged on leveling operations. These it had been decided to suspend temporarily, and to employ the party in completing the principal observations of the Brahmaputra Series.

Mr. Neuville being absent on sick leave and Mr. Harris having been appointed to another series, Captain Carter came to the ground with a party altogether new to it; and he himself had had no past experience in trigonometrical operations of this nature: his work in the Survey had hitherto been mostly topographical—in Kashmir and Ladákh and in Kumaun and Garhwál—and geographical, when he served with the Abyssinian Expedition and on the Pesháwar Frontier. Notwithstanding these and other drawbacks he succeeded in effecting a satisfactory season's work.

Season 1872-73.

PERSONNEL.

Captain T. T. Carter, R.E., Dy. Supt., 2nd Grade.
Mr. A. W. Donnelly, Surveyor, 2nd Grade.
„ H. Healy, Assistant Surveyor, 4th „
Narsing Dass, Sub-Surveyor.
Amjad Ali, „

It had unfortunately happened that the tower at Párkoksa (XXVI), which with Poelsa (XXV), defined the side up to which final operations had been carried in 1869-70, had been washed away by the river, and the first thing to be done was therefore to make arrangements for building another tower on a neighbouring site. This duty was entrusted to Mr. Donnelly, while Captain Carter with the rest of his assistants proceeded to Soilábári (XXIII) to construct the scaffolding for the observatory tent; his assistants requiring instruction in this particular.

The scaffolding at Soilábári was completed by the 26th November and then Captain Carter returned to Párkoksa to choose the site for the new pillar. Leaving this place on the 30th, Captain Carter proceeded to Rashídpur (XXIX) to build the scaffolding there and commence final operations, while Mr. Healy and Narsing Dass were detached to build the remaining scaffoldings likely to be wanted during the season.

From Rashídpur Captain Carter proceeded to Poerbári (XXXI) and Gaborgrám (XXXII), intending next to take the observations at Párkoksa and the surrounding stations, so as to fill up the hiatus in the Series caused by the disappearance of the tower at the last mentioned place. But while at Gaborgrám, on the 29th December, he received the information that the new tower at Párkoksa had fallen down, after having been raised to a height of 25 feet, from its having been built with bricks made of unsuitable clay and insufficiently burnt. This mishap necessitated a change of programme, and the stations next observed at were

Boládánga (xxxv), Sádipati (xxxiii) and Char Sherpur (xxxiv), the last being completed on the 28th January. In the meantime the pillar at Párkoksa, now numbered (xxvii), was reported finished, and the scaffoldings at that and the surrounding stations had been built as well as the rays cleared: Captain Carter was thus enabled to return towards Bághmára (xxviii) and to commence final observations to complete the two polygons into which the station of Párkoksa entered*.

Captain Carter had been anxious to close work on the side Kánchipára (xl)–Gáropára (xxxix); but after completing the chain about Párkoksa he was only able to visit Bonárpára (xxxviii), Halkáchar (xxxvii) and Jánkípur (xxxvi), when the whole party began to shew signs of being more or less prostrated by fever and over exertion, and he found it advisable to close work for the season on the 21st April at the last named station.

Captain Carter met with similar atmospheric difficulties in carrying on operations to those which had been previously experienced by Captain Thuillier. From the 15th November to within a few days of closing work there were only two slight showers of rain. During the month of December and up to the end of February a thick fog covered the whole country every night, only clearing away about 10 in the morning; thus no night angles were obtainable. At sunset the villagers drive in their cattle and at once set fire to the accumulation of refuse near their cattle sheds; every village is soon enveloped in smoke, and the country being thickly populated, observing to surrounding lamps became quite impossible. As the season advances the cultivators—preparatory to tilling the land for the rain crop—burn the grass on the low lands bordering the rivers, as also the rice stubble, which has been left standing in the fields, filling the atmosphere with a heavy smoke: this state of things continues till the end of March. About the 1st April the periodical N.W. storms commence; and when these occurred at night, the lamp men being obliged to remove their signals for safety, and unable to re-align them in the dark immediately after the storm had passed, observations could not be resumed till next day.

Minor triangulation was rendered almost impracticable by the number of villages and the luxuriant vegetation, which made the visibility impossible otherwise than by the cutting of rays which would have been excessively expensive; but it was found that a secondary series could be run along the banks of the old bed of the Brahmaputra river to fix the town of Mymensingh; and this undertaking was successfully carried out by Mr. Donnelly.

Captain Carter makes the following remarks regarding the inhabitants and the character of the country on both sides of the Brahmaputra. "The population is entirely Muham-"madan. The people appear industrious and well conducted, possessed of large herds of cattle "and comfortable villages; their crops are good and they live an easy independent life. The "men appear strong and healthy, and occupy themselves either as boat-men or agriculturists. "*Háts* (markets) are held at all the large villages at least once a week. Dwellings being all built "of bamboo and grass, which are readily procurable, fires are of constant occurrence and must "cause considerable loss of grain: mud huts are never seen as they would be washed away in

* On placing the signal on Soilábári T. S., it could not be plumbed over the mark, owing to the tower having slightly deflected. To remedy this difficulty a new mark was placed in the ground floor, the old one being however left undisturbed, and Captain Carter fell back on Mokimpur T.S. (xx), the next station to the south. Thus the Basalia polygon, when presented for reduction, had two stations at Soilábári, (xxiii), (or old) and (xxiv), (or new), and two at Párkoksa, (xxvi), (or old), and (xxvii), (or new). The reduction was made to include all the observed angles at these stations; but the linear and geodetic elements appertaining to the two new stations are alone given in the details of the results.

"the rains. In most zamíndári holdings one brick building exists, called the zamíndár's *Ka-*
"*chahri* (office). The low lands along the course of the river produce the best crops, one of
"the principal being jute, which is largely cultivated, especially in the Rungpore (Rangpur) district." It has previously been remarked that Serajgunj is the principal jute mart in this part of the country and has become a place of considerable importance.

Season 1873-74.

PERSONNEL.

Captain T. T. Carter, R.E., Officiating Deputy Superintendent, 2nd Grade.
Mr. L. H. Clarke, Surveyor, 2nd Grade.
„ D. Collins, Assist. Surveyor, 4th „

The party took the field early the following season, and by the 10th November had assembled at Bogra. Since the previous season the staff had entirely changed. Mr. Donnelly had died during the recess; Mr. Neuville had been pronounced by medical authority to be unfit for work in Lower Bengal, and Mr. Healy had resigned his appointment. Their places were supplied by Mr. Clarke, whose services became available on the completion of the Biláspur Series, and by Mr. Collins who had recently joined the Department.

After the usual preliminaries had been settled, Mr. Clarke was detached to build the scaffoldings at the stations which had to be observed from, and he was at the same time directed to fix by traverse with a theodolite and chain any permanent buildings or Revenue Survey marks within a radius of 4 miles from each station; and where these did not exist he was to fix the positions of the *háts*, which are generally under some old banyan or other tree, affording protection from heat or rain to buyers and sellers.

Leaving Bogra Captain Carter visited Kánchipára (XL) where he proposed to commence final observations. These began on the 24th November, but were not completed at this station till the 4th December, owing to haze and cloud. At the same time a bad form of fever attacked the party and carried off two heliotropers, prostrated the native doctor and several of the native establishment, while in the Bogra district it was almost an epidemic.

From Kánchipára he proceeded to Káshdaha (XLII) and thence to Borel (XLI), at which place observations were completed by the 19th December. He now visited the stations on the east flank of the Series and observed successively at Gáropára (XXXIX), Peshkárbhita (XLIII), Rangira (XLVI), Singmári (XLV) and Sámding (XXV of the Assam Longitudinal Series). Some delay was experienced at Rangira owing to bad weather, no observations being possible from the 4th to the 13th January from dense haze, which was ultimately dispersed by a heavy fall of rain. Further delay was experienced at Singmári owing to the ray to Alangjáni (XXII of the Assam Longitudinal Series) being obstructed. Captain Carter next returned to the western flank where he observed successively at Alangjáni, Gobindpur (XLVII) and Narsinghbanj (XLIV), and so completed the Series by the 6th March.

The season although somewhat short, had proved a particularly trying one. The whole party had continually to work against time in order to complete the triangulation before the unfavourable season commenced; meanwhile it suffered a great deal from fever to which five men succumbed.

A certain amount of secondary triangulation was executed this season, the principal object in view being the laying down of points for the Revenue Survey of that portion of the Goálpára district, which forms a narrow tongue, extending from the vicinity of the hill

station of Sámding southwards between the Gáro Hills and the left bank of the Brahmaputra River till it touches the Mymensingh district. In the execution of the secondary triangulation a connection was made with the Gáro Hill Survey conducted by Lieutenant (now Bt. Lieut.-Colonel) Woodthorpe, R.E., in the preceding season, when he accompanied the Police Force Expedition under Captain Williamson, Political Agent, against the refractory tribes inhabiting the unsurveyed portions of the Gáro Hills. The stations common to the two surveys are Sámding, Rangira, Borchi and Shekarpára. The principal stations of the triangulation executed this season lay partly in the Rungpore district and partly in the Gáro Hills, only secondary stations falling in the Goálpára district.

The portion of the Rungpore district included in the triangulation seems to have been thickly populated, and being somewhat more elevated than the country previously traversed, swamps were less numerous and locomotion easier.

The following information regarding the Gáro Hills is extracted from a report by Lieutenant Woodthorpe.

Physical Aspect of the Country, &c.—The Gáro Hills, the westernmost of the girt of hills forming the southern boundary of the valley of Assam (Assám), are also the lowest descending ranges to the plains on three sides. The highest range in the Gáro Hills is the Tura range running east and west, the highest point of which does not exceed 4,700 feet. This range descends precipitously on the south for nearly 3,000 feet, thence sending out long and very gradually descending spurs down to the Brahmaputra on the east and into the plains of Mymensingh on the south, these spurs being separated by deep ravines through which numberless streams thread their course. The southern face of this range presents an almost unbroken mass of fine dark-green foliage of huge forest trees; from this the yellow patch, which marks the position of Tura, stands out in bold relief. To the north the range sends out a series of long, lofty, and almost parallel spurs, the steep and well-wooded sides of which feed, with many streams and rivulets, the principal river of these hills, which cuts through this range to the east between Dorengo and Kailás, and is called by the Gáros "Samsang" or "Shamshang", and by the inhabitants of Mymensingh the "Sumasary." The lower slopes of these spurs are well cultivated, and dotted over with a tolerable number of villages. The next ranges in height and importance are the Arbela and Watrigiri, which possess somewhat similar features, being steep and well marked on one side, and fading away on the other in long spurs and a succession of rounded knolls.

The Sokadam and Mongiri are the next most clearly marked, the remainder of the Gáro country being a confused mass of low hills (gradually rising in general level towards the Khási Hills) and narrow valleys watered by numerous small streams. Out of this mass a few detached hills stand up prominently, such as Tingrith, Dalmong, Mongthrim, &c.

Rivers.—In many cases two rivers, rising within half a mile of each other, take an entirely different direction. Take, for instance, the Jangiál and Damrang rivers, which rise close to each other in the Arbela Hill, the former near Kiragiri, the latter at Tongbolgiri. At the northernmost of the Boldamgiri villages the Jangiál takes a bend as if it would join the Damrang, and there is nothing in the formation of the low country to prove from a little distance that it does not, yet it goes to Bengal Káta, while the Damrang flows out into the Goálpára plains by Jira. It was often only by actually following the rivers themselves that their courses could be determined.

The Samsang is a very rocky stream, a succession of falls and rapids, as far as below Kailás, whence it flows gently onwards by Durgapur; it is navigable for small "*dug-outs*" for a few miles between Rangrengiri and Shongmagiri. The rivers on the west, and the three principal ones on the north—the Jinjarám, the Damrang, and the Manda—are rocky for the first few miles of their course, when they be-

come sluggish streams flowing slowly over sandy beds. The eastern tributaries of the Samsang are generally rocky, with rather a rapid flow.

Cultivation.—The Gáro Hills are very thickly populated, and the numerous patches of cultivation pleasingly break the monotony of the dense tree and long grass jungle which covers the remainder. The principal object of cultivation is, and has long been, cotton. Indeed, even under the Mughal rule, the Gáros were large suppliers of the demand for cotton. The soil is a stiff red soil, and in the same field, cotton, summer rice, a kind of millet, with various other crops, as chillies, squashes, sweet potatoes, &c., all flourish together. Cotton can only be grown the first year, rice for two years, and then the field is allowed to lie fallow for a few years (five I think), during which it becomes overgrown with long grass and a tall weed with a lilac flower resembling heliotrope. When the five years are up, all this is burned and cultivation resumed. The burning never commences till they are sure of rain, the action of the rain on the ashes being necessary to perfect the soil. The fields in the flat valley towards Nibári are ploughed roughly and yield heavy crops of rice.

In every field are two or three *jum* houses constructed of bamboo, with grass-thatched roof, in which the crops are first stored, and in which live the men who look after them. These are raised to a great height, sometimes as much as 50 or 60 feet from the ground, as a protection against wild beasts, and also answer as watch-houses. They are built among the branches of strong trees, the trunk forming the principal upright; the floor is additionally supported by long bamboos either planted in the ground or secured at their lower ends to the trunk of the tree. One I saw, of which the outer ends of the floor were supported only by cane ropes from the top of the tree—a suspension house. Long frail ladders of bamboo give access to these houses, which, nestling in the foliage of the trees, and often covered by some large vine, have a very pleasing and picturesque appearance.

The Gáro Hills consist principally of granite and highly talcose rocks. In the fields immense quantities of talc are to be found, some of the flakes being of very great size. In many instances, the silvery scales glistening in the sun on the red soil of the fields, give the latter the appearance of being frosted. At Mering, a large mass of granite, standing apparently about 150 feet above the level of the surrounding country, is a landmark for many miles. I was obliged, much to my regret, to give up the idea of inspecting it, as it would have taken me too far out of my way, but I imagine it must be another exhibition of the geological fact thus mentioned by Dr. Oldham, *viz.*, "the occurrence of those huge blocks of rock embedded in, and of a similar character to, the mass, though much more highly indurated;" and, like the Kalang rock in the Khási Hills, though in a smaller scale, "no human hands have exposed the Mering stone, but the action of natural causes, continued for ages, has laid it bare."

From a distance it appears to be a huge conical mass, but like the Kalang, it is accessible from one side, though not easily so, perpendicular on the other, overhanging a cave. This rock is supposed by the Lengams (the men who inhabit the border country between the pure Gáros on one side and pure Khásias on the other) to be the abode of a very powerful and malicious demon. At one place on the Arbela range, near Makragiri, I noticed large masses of granite lying in the small furrows between the tilas and on the hill sides, as if thrown down from a height above—just as is the case at Nongkrem and elsewhere in the Khási Hills.

The southern face of the hills at Pandengru, Balpukram, &c., seems to be a continuation of the limestone beds of the South Khási Hills. Limestones and chalkstones are also found near Tura and in the Rangira Hills, and, as before mentioned, well-marked beds of good coal are found at the head of the Mahádeo valley. Another large bed of coal is said to exist in a hill near Gare Gittom. Iron exists in very large quantities in these hills, as evidenced in the streams both to the taste and vision, especially in those south of the Tura range. Mr. Eliot, who visited the hills in 1788-89, describes a mode the natives of the Mahádeo valley employed for extracting oil from the coal, which they applied as an ointment for cutaneous diseases. A large earthen vessel (*gharra*) was filled with coal, and the mouth stopped with grass; this was placed, inverted, in a shallow pan, the neck protruding through a hole in the bottom of it; this pan was supported at a

sufficient height from the ground by bricks, to allow of a receiver being placed beneath the neck of the *gharra*. Cowdung fuel being placed in the pan and lighted, the oil from the coal distilled through the grass into the receiver; the oil was extracted in the course of an hour.

Natural History.—Elephants abound in those hills, and very profitable *khedda* operations might be established there. Tigers are also found in the lower hills. Leopards, barking deer, and sámbar have their home there, and I believe, though I never saw them, that there are many wild dogs in the inner hills. Of birds, there are an immense number of peafowl, kalej pheasants, jungle fowl, a few partridges, and several varieties of green pigeons. Of small birds there are over one hundred varieties. Two varieties of thrush and cuckoo were obtained, which are supposed to be quite unknown. The Huluk monkey is heard nearly all over the hills. Captain Williamson, when out in the districts during the rains last year, discovered two entirely new tortoises which are now in the Museum at Calcutta, I believe.

Climate.—The climate of the Gáro Hills is very fine from November to January and of a very pleasant temperature, though rather warm in the middle of the day. The lower valleys are, however, generally visited at night by heavy mists, from which the upper ranges are entirely free. In January, in the valley of the Samsang, the houses were generally covered in the early morning with thick hoarfrost, and ice was found in our "*chilamchis*" metal hand-basins. From the middle of October to the middle of January, the atmosphere is singularly clear and favorable to triangulation; later it gets hazy, and the smoke of field fires covers the country as with a veil during the last half of March and beginning of April, when the rains have generally commenced, and triangulation is then a work of great anxiety and uncertainty. The weather also becomes very hot. In the lower hills and plains of Goálpára the average maximum height of the thermometer in the shade was 88°, seldom sinking below 74° even after sundown. Mosquitoes, midges, and leeches abound in almost incredible numbers from the beginning of April.

The whole of the Principal Triangulation of this Series was executed with Troughton and Simms' 24-inch Theodolite No. 2. The direct length of the Series, including the three triangles at the southern extremity, which form part of the Hatiára polygon of the East Calcutta Longitudinal Series, is about 190 miles. Prior to the reduction of the North-East Quadrilateral the closing discrepancies at Sámding in Latitude, Longitude and Azimuth as brought up from Calcutta *viâ* the East Calcutta Longitudinal and Brahmaputra Series, and *viâ* the Calcutta Meridional and Assam Longitudinal Series, and in side as brought up by the former route and compared with the value derived from the Sonakhoda Base-line through the Assam Longitudinal Series, were as follows:—

In Latitude	0″·129
„ Longitude	0 ·143
„ Azimuth	2 ·405
„ Side	2 ·8 inches per mile.

The magnitudes of the errors actually dispersed over the Brahmaputra Series by the Simultaneous Reduction of the North-East Quadrilateral were:—

In Latitude	— 0″·166
„ Longitude	— 0 ·001
„ Azimuth	+ 2 ·608
„ Side	Logarithm — 0·000,0011,7 giving a ratio of about 0·17 inch per mile.

August 1882. W. H. COLE.

BRAHMAPUTRA SERIES.

ALPHABETICAL LIST OF PRINCIPAL STATIONS.

BRAHMAPUTRA SERIES.

NUMERICAL LIST OF PRINCIPAL STATIONS.

XX	Maheshpur. (of the East Calcutta Longitudinal Series).
XXI	Pákdiha. (of the East Calcutta Longitudinal Series).
I	Harina.
II	Bághpur.
III	Saidpur.
IV	Gázitak.
V	Sonpácha.
VI	Gáskanchan.
VII	Bráhmangaon.
VIII	Khánkhánápur.
IX	Rámdiha.
X	Paipára.
XI	Tepri.
XII	Chámtia.
XIII	Bháranga.
XIV	Bani.
XV	Bangaon.
XVI	Belta.
XVII	Basail.
XVIII	Dúliabári.
XIX	Ichhápur.
XX	Mokimpur.
XXI	Basalia.
XXII	Banikátra.
XXIII	Soilábári (old).
XXIV	Soilábári (new).
XXV	Poelsa.
XXVI	Párkoksa (old).
XXVII	Párkoksa (new).
XXVIII	Bághmára.
XXIX	Rashídpur.
XXX	Aloákándi.
XXXI	Poerbári.
XXXII	Gaborgrám.
XXXIII	Sádipati.
XXXIV	Char Sherpur.
XXXV	Boládánga.
XXXVI	Jánkípur.
XXXVII	Halkáchar.
XXXVIII	Bonárpára.
XXXIX	Gáropára.
XL	Kánchipára.
XLI	Borel.
XLII	Káshdaha.
XLIII	Peshkárbhita.
XLIV	Narsinghbanj.
XLV	Singmári.
XLVI	Rangira.
XLVII	Gobindpur.
XXII	Alangjáni. (of the Assam Longitudinal Series).
XXV	Sámding. (of the Assam Longitudinal Series).

BRAHMAPUTRA SERIES.

DESCRIPTION OF PRINCIPAL STATIONS.

Of the Principal Stations of this Series, such as are situated on low ground are either hollow rectangular towers or perforated masonry pillars; but those on hills, are solid masonry pillars. The hollow rectangular towers, 14 in number, are externally about 17 feet by 13 feet at base, and 14 feet by 11 feet at top, with circular perforated masonry pillars—3¼ 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, having the usual circle and dot engraved thereon, is placed in the ground floor and another below it in the foundation. The perforated masonry pillars, 29 in number, are rectangular (about 7½ feet square) at base, and circular (about 3¼ feet in diameter) at top, with mark-stones as described for the preceding; around the pillars, for the accommodation of the observatory tent, *temporary* scaffolding platforms were erected. As regards the solid masonry pillars, 4 in number, these are circular 3¼ feet in diameter at top and from 3 to 5 feet in height, containing two or more mark-stones placed vertically over one another, and are surrounded by platforms of rubble masonry 19 feet square at base and 17 feet square at top: for the protection of the upper mark-stones at these stations, solid rectangular masonry pillars, bearing sufficiently accurate marks for Topographical and Revenue Survey purposes—as shown at page 74 of Vol. II of the "*Account of the Operations &c.*"—were constructed after the completion of the observations. In all the perforated pillars and hollow towers, access to the ground level mark is obtained by a passage (now bricked up) constructed for the purpose. For more detailed descriptions of all such structures, see pages 43 to 46 of the volume above quoted.

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, 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.

XX.—(*Of the East Calcutta Longitudinal Series*). Maheshpur Tower Station, lat. 23°17′, long. 89°49′—observed at in 1868 and 1869—is at the northern edge of the village of that name, and about 80 yards S. of a khál (rivulet) which skirts the village; thána Maksúdpur, pargana Telí Hátí, district Furreedpore.

The tower is hollow, and 38·25 feet in height 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; Hogládánga E.S.E., mile 0·75; Magorá W., mile 1; and the Habra Indigo Factory W.S.W., miles 1·88.

XXI.—(*Of the East Calcutta Longitudinal Series*). Pákdiha Tower Station, lat. 23° 17′, long. 90° 0′—observed at in 1868—is in open ground, and about 200 yards S.E. of the southern extremity of the village of Pákdiha; thána Maksúdpur, pargana Satara Hazár, district Furreedpore.

The tower is hollow, and 38·32 feet in height. It has two marks, the upper in the floor 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:—Baghádia S.E., mile 0·6; Dhobadí S.W., mile 0·5; and Agdia N.W., mile 1.

I. Harina Tower Station, lat. 23° 25′, long. 89° 54′—observed at in 1869—is at the northern extremity of the village of that name, and about 200 yards S. of the Sítalakkha nadi; thána Ainpur, pargana Haweli, district Furreedpore.

The pillar is perforated, and 35·68 feet in height. It has a mark in the ground floor and another 3½ feet below in the foundation. The azimuths and perambulated distances of the circumjacent villages are:—Chágaldi 265° 32′, mile 0·43; Kajália 348° 4′, miles 1·40; and Kálishpati 61° 52′, mile 0·64.

II. Bághpur Tower Station, lat. 23° 25′, long. 90° 4′—observed at in 1869—stands in a large open plain in the lands of the village of Bághpur which is about 1½ miles due N. of the station; thána Sadarpur, pargana Jalálpur, district Furreedpore.

The tower is hollow, and 40·48 feet in height. It has two marks, one in the floor which is 1 foot below ground level, and the other 2½ feet below in the foundation. The azimuths and perambulated distances of the circumjacent places are:—Lochanganj Indigo Factory (vats) 221° 7′, miles 1·49; Puráran village 296° 29′, mile 0·88; Fukarháti Hát 86° 24′, miles 1·07; and Barra village 127° 19′, mile 0·99.

III. Saidpur Tower Station, lat. 23° 25′, long. 89° 43′—observed at in 1869—is situated at the eastern edge of the large and well known village of Saidpur or Shodpur on the left bank of the Bárásia river; thána Bhushana, pargana Shatoir, district Furreedpore.

The tower is hollow, and 40·27 feet in height. It has a mark in the ground floor and another about 2½ feet below in the foundation. The directions and estimated distances of the circumjacent places are:—Bhushana thána S.W., mile ½; Dhobágháta N.W., miles 1½; Sotasi village S., mile ½; and Rámnagar E., miles 1½.

IV. Gázitak Tower Station, lat. 23° 33′, long. 90° 0′—observed at in 1869—is on an extensive char (island) near the left bank of the Búbaneswar river, and at the southern extremity of the village of Gázitak; thána Furreedpore, pargana Bhadrasan, district Furreedpore.

The tower is hollow, and 39·28 feet in height. It has a mark in the ground floor and another 2½ feet below in the foundation. The estimated bearings and distances of the circumjacent places are:—Bhadrasan Hát N.E., miles 4; and Gopálpur (on the right bank of the river) W., miles 2½.

V. Sonpácha Tower Station, lat. 23° 33′, long. 89° 49′—observed at in 1869—is situated in open ground, about 200 yards S.W. of the village of that name, 350 yards W. of the high road from Jessore to Furreedpore, and 5½ miles S.W. of the Civil Station at the latter named place; thána Furreedpore, pargana Dhúldi, district Furreedpore.

The tower is hollow, and 37·75 feet in height. It has two marks, one in the floor which is 1 foot below ground level, and the other 2½ feet below in the foundation. The azimuths and perambulated distances of the circumjacent places are:—Kánáipur Hát 35° 5′, mile 0·59; Aminnagar Hát 87° 46′, mile 0·42.

VI. Gáskanchan Tower Station, lat. 23° 41′, long. 89° 55′—observed at in 1869—is situated at the south-western extremity of the village of that name, on the left bank of the Ganges or Pudda river, and about ¼ mile inland; thána Harirámpur, pargana Nasibsháhi, sub-division Manickgunge, district Dacca.

The tower is hollow, and 39·68 feet in height. It has a mark in the ground floor and another about 2½ feet below in the foundation. The azimuths and perambulated distances of the circumjacent places are:—Jaypur village (paka house) 347° 57′, mile 0·51; Selimpur 236° 22′, mile 0·58; and Akúmkándi village (S. extremity) 183° 43′, mile 0·70.

VII. Bráhmangaon Tower Station, lat. 23° 41′, long. 90° 6′—observed at in 1869—is situated in open ground in the lands of the village of Bráhmangaon, and about 200 yards S.E. of it; thána Nawábganj, pargana Jahanabad, sub-division Manickgunge, district Dacca.

The tower is hollow, and 37·47 feet in height. It has a mark in the ground floor and another 2½ feet below in the foundation. The azimuths and perambulated distances of the circumjacent places are:—Bámnaháti 18° 37′, mile 0·21; Dighugrám 342° 5′, mile 0·71; Baruakháli Hát 251° 36′, mile 0·91; Nabográm village 207° 44′, mile 0·70; and Husainabad (Roman Catholic Chapel) 295° 10′, miles 3·59.

VIII. Khánkhánápur Tower Station, lat. 23° 41′, long. 89° 45′—observed at in 1869—is on a tank bank near the north-western extremity of one of the several hamlets comprising the village of Khánkhánápur on the right bank of the Ganges, and about ¼ mile inland; thána Goalundo, pargana Amírabad, district Furreedpore.

The tower is hollow, and 33·03 feet in height. It has two marks, one in the floor which is 1 foot below ground level, and the other about 2½ feet below in the foundation. The estimated bearings and distances of the circumjacent places are:—Phultala bazar N.N.E., mile ¾; and Betka thána N.N.E., miles 1½.

IX. Rámdiha Tower Station, lat. 23° 49′, long. 90° 0′—observed at in 1869—is situated at the south-western extremity of the small village of that name; thána Jáfarganj, pargana Chandprotáp, sub-division Manickgunge, district Dacca.

The tower is hollow, and 39·08 feet in height. It has a mark in the ground floor and another 2·17 feet below in the foundation. The azimuths and perambulated distances of the surrounding places are:—Nawágaon Hát 318° 51′, mile 0·22; Nawáchar or Tittikáta village 135° 29′, mile 0·61; Bahoja village 164° 47′, miles 1·16; and Baniajori temple 139° 25′, miles 2·42.

X. Paipára Tower Station, lat. 23° 49′, long. 89° 52′—observed at in 1869—is in open ground, about ½ a mile S. of the village of Paipára; thána Jáfarganj, pargana Chandprotáp, sub-division Manickgunge, district Dacca.

The pillar is perforated, and 38·25 feet in height. It has a mark in the ground floor and another 1·82 feet below in the foundation. The azimuths and perambulated distances of the circumjacent places are:—Amdola bazar 316° 22′, mile 0·29; Kasaduh village 76° 20′, mile 0·53; Arpára 136° 33′, mile 0·39; and Paipára Indigo factory (in ruins) 181° 36′, mile 0·83.

XI. Tepri Tower Station, lat. 23° 57′, long. 89° 55′—observed at in 1869—stands in the centre of the south-eastern hamlet of the village of Tepri, and 3¾ miles N.N.W. of the Ghior Hát on the right bank of the Dhaleshwari river; thána Jáfarganj, pargana Chandprotáp, sub-division Manickgunge, district Dacca.

The tower is hollow, and 39·93 feet in height. It has a mark in the ground floor and another 2·61 feet below. The azimuths and perambulated distances of the circumjacent places are:—Mirpur Hát 106° 13′, miles 1·23; Baura village 316° 23′, mile 0·61; Panchpir bazar 107° 38′, mile 0·42; Kharak Tepri village 182° 22′, mile 0·62; and Daulatpur (Revenue Survey pillar) 118° 14′, mile 0·99.

XII. Chámtia Tower Station, lat. 23° 57′, long. 90° 6′—observed at in 1869—stands at the north-eastern border of the small village of Chámtia, and about 1½ miles S.E. of the Shátúria Hát on the left bank of the Gájikháli river; thána Manickgunge, pargana Kásimnagar, sub-division Manickgunge, district Dacca.

The tower is hollow, and 35·00 feet in height. It has a mark in the ground floor and another 2·75 feet below. The azimuths and perambulated distances of the circumjacent villages are:—Handúlia 122° 58′, mile 0·24; Kandarpur 213° 3′, mile 0·37; and Boeltala 244° 25′, mile 0·64.

XIII. Bháranga Tower Station, lat. 23° 57′, long. 89° 44′—observed at in 1869—is situated on the right bank of the Jamoona or Brahmaputra river, at the south-eastern edge of the village of Bháranga; thána Mathura, pargana Sinduri, district Pubna.

The tower is hollow, and 38·32 feet in height. It has a mark in the ground floor and another 2·21 feet below. The estimated bearings and distances of the circumjacent places are:—Mathura thána S., 350 yards; and Rámnáráinpur village (on the river bank) E., mile ¾

XIV. Bani or Láoháti Tower Station, lat. 24° 5′, long. 90° 0′—observed at in 1869—is situated at the north-western corner of the hamlet of Bani of the village of Láoháti, and about 1¼ miles E.N.E. of the ruins of the Tátsirri Indigo factory on the left bank of the Elangjáni river; thána Átia, pargana Átia, district Mymensingh.

The tower is hollow, and 37·42 feet in height. It has a mark in the ground floor and another 2·00 feet below. The azimuths and perambulated distances of the circumjacent places are:—Harandpára hamlet 12° 18′, mile 0·53; Bowánipur village 207° 38′, mile 0·78; Láoháti hamlet 116° 58′, mile 0·66; and Pachúria village 42° 2′, mile 0·93.

XV. Bangaon Tower Station, lat. 24° 5′, long. 89° 51′—observed at in 1870—stands on the left bank of the Jamoona or Brahmaputra river, at the north-western edge of the southern hamlet of Bangaon village, and 1½ miles N. of the Salímabad Indigo factory; thána Átia, pargana Átia, district Mymensingh.

The tower is hollow, and 38·45 feet in height. It has a mark in the ground floor and another 1·83 feet below. The azimuths and distances of the circumjacent places are:—Salímabad Hát 355° 2′, miles 1·01; and Nágarpur (Sítanáth Shaha's house) 292° 20′, miles 4·61.

XVI. Belta Tower Station, lat. 24° 13′, long. 89° 55′—observed at in 1870—is situated on the left bank of the Jamoona or Brahmaputra river, at the edge of one of the numerous and scattered hamlets comprising the

village of Belta, and about 1½ miles S.W. of Santosh, the residence of the principal zamíndár (landholder) of this pargana; thána Átia, pargana Kágmári, district Mymensingh.

The pillar is perforated, and 40·50 feet in height. It has a mark in the ground floor and another 2·10 feet below. The azimuths and perambulated distances of the circumjacent villages are :—Porábári (S.W. extremity) 129° 40′, mile 0·51; Kabilapára 196° 18, mile 0·44; Sunhat 323° 14′, mile 0·71; and Rakhil Belta 225° 19′, mile 0·56.

XVII. Basail Tower Station, lat. 24° 14′, long. 90° 5′—observed at in 1870—is situated near the south-western extremity of the large village of Basail; thána and pargana Átia, district Mymensingh.

The tower is hollow, and 38·61 feet in height. It has a mark in the ground floor and another 1·58 feet below. The estimated bearings and distances of the circumjacent villages are :—Adájan S., miles 1¼; Birshura S.W., miles 1½; Kashil W., miles 2; Maijkhara N., miles 1½; and Kanchanpur S.E., miles 1½.

XVIII. Dúliabári Tower Station, lat. 24° 13′, long. 89° 46′—observed at in 1870—is situated in open ground, about ½ a mile S. of the village of that name; thána Shahzadpore, pargana Ishafsháhi, sub-division Serajgunj, district Pubna.

The pillar is perforated, and 38·15 feet in height. It has a mark in the ground floor and another 2·08 feet below. The azimuths and perambulated distances of the circumjacent places are :—Ináyatpur village 137° 48′, mile 0·99; Kúchgrám 59° 18′, mile 0·40; Basantpur house 321° 1′, miles 1·46; and Noápára Indigo factory (ruins of) 299° 8′, mile 0·92.

XIX. Ichháp ur Tower Station, lat. 24° 21′, long. 89° 59′—observed at in 1870—is situated at the western edge and nearly midway in the direction of north and south of the long and straggling village of Ichhápur, and about 2 miles N.E. of the police station of Elanga; thána Gopálpur, pargana Pukuria, district Mymensingh.

The pillar is perforated, and 38·43 feet in height. It has a mark in the ground floor and another 2·16 feet below. The azimuths and perambulated distances of the circumjacent places are :—Rajabári village 40° 53′, mile 0·98; Bhángábári 115° 0′, mile 0·80; and Mosinda 4° 38′, miles 1·29.

XX. Mokimpur Tower Station, lat. 24° 21′, long. 89° 46′—observed at in 1870 and 1873—is situated in open ground, on the right bank of the Jamoona or Brahmaputra river, and a short distance S.E. of the village of Mokimpur; thána Ullapára, pargana Ishafsháhi, sub-division Serajgunj, district Pubna.

The pillar is perforated, and 40·66 feet in height. It has a mark in the ground floor and another 2·15 feet below. The azimuths and perambulated distances of the circumjacent places are :—Belkuchi house 351° 4′, miles 1·84; Baigan village 14° 47′, mile 0·48; Agura village 23° 28′, miles 1·65; and Mokimpur Hát 69° 29′, mile 0·36.

XXI. Basalia Tower Station, lat. 24° 29′, long. 89° 53′—observed at in 1870 and 1873—is situated on the left bank of the Jamoona or Brahmaputra river, in the lands of the village of Basalia, and about 280 yards from the Lohajanga nadi; thána Gopálpur, pargana Pukuria, sub-division Tangail, district Mymensingh.

The pillar is perforated, and 38·49 feet in height. It has a mark in the ground floor and another 1·60 feet below. The azimuths and perambulated distances of the circumjacent places are :—Kutabpur village 299° 11′, mile 0·60; Tárai village 191° 3′, mile 0·74; Maijbári (W. hamlet) 227° 12′, mile 0·58; Mandia factory (highest chimney) 257° 25′, miles 2·67; and Bira factory (highest chimney) 176° 21′, miles 1·81.

XXII. Banikátra Tower Station, lat. 24° 28′, long. 90° 2′—observed at in 1870—is situated in open ground on the left bank of a small stream, about ¼ of a mile S. W. of the small village of Banikátra, and ¼ of a mile W. of the Garh Gujali forest; thána Gopálpur, pargana Pukuria, district Mymensingh.

The pillar is perforated, and 38 82 feet in height. It has a mark in the ground floor and another 1·71 feet below. The azimuths and perambulated distances of the circumjacent places are :—Kátra village 276° 31′, mile 0·64; Kháijáin village 333° 43′, mile 0·83; and Chámtára Hát 46° 59′, mile 0·76.

XXIII (old) and XXIV (new). Soilábári Tower Station, lat. 24° 30′, long. 89° 43′—observed at in 1870 and 1873—is situated on the left bank of the Ichchámati river, at the south-western edge of the village of that name in the zamíndári of Hari Prasád Sháha; thána Serajgunj, pargana Barabáju, sub-division Serajgunj, district Pubna.

The station is a perforated pillar 38·58 feet in height, and when built in 1870 contained two marks, one at the ground level and another 1·82 feet below. In 1873 the pillar was found so much deflected that the old mark could no larger be plumbed over; two new marks cut on bricks were therefore fixed 8 and 10 9 inches respectively above the ground level mark of 1870, and 3·83 inches to S.W. of the latter which is engraved on marble. Number XXIII refers to the marks of 1870 and XXIV to those of 1873. The azimuths and perambulated distances of the surrounding villages are :—Khaga 84° 46′, miles 1·24; Kam Soilábári 266° 56′, mile 0·76; Char Soilábári 282° 24′, mile 0·10; and Koksábári 313° 3′, mile 0 71.

XXV. Poelsa Tower Station, lat. 24° 37′, long. 89° 58′—observed at in 1870 and 1873—is situated in the eastern hamlet of the village of Poelsa, on the right bank of a small stream called Borian nadi (river) which skirts the village, and immediately opposite to the village of Saner. Char, in the zamíndári of Tarini Kanta Chaudri; thána Gopálpur, pargana Pukuria, sub-division Tangail, district Mymensingh.

The pillar is perforated, and 40·26 feet in height. It has a mark in the ground floor and another 1·83 feet below. The azimuths and perambulated distances of the circumjacent villages are:—Poelsa (W. hamlet) 73° 26′, mile 0·53; Muhammadpur 105° 0,′ miles 1·77; Chorer Bhita 318° 23′, mile 0·78; Simlábári 340° 3′, mile 0·67; and Amil 258° 23′, miles 1·82.

XXVI. Párkoksa Tower Station (old), lat. 24° 38′, long. 89° 46′—observed at in 1870—stood in open ground on the right bank of the Jamoona or Brahmaputra river, and about ¼ of a mile E. of the village of Párkoksa; thána Serajgunj, pargana Kágmári, sub-division Serajgunj, district Pubna.

The pillar was perforated, and 38·45 feet in height. It had a mark in the ground floor and another 1·83 feet below. The azimuths and perambulated distances of the circumjacent places are:—Mánikdaher Hát 14° 58′, miles 1·64; and Mánikdaher village (E. hamlet) 353° 19′, mile 0·83. This station was carried away by the river during the rains of 1872.

XXVII. Párkoksa Tower Station (new), lat. 24° 37′, long. 89° 46′—observed at in 1873—is situated in the lands of Párkoksa village and about 230 yards E. of it, and 110 yards W. of the right bank of the Jamoona or Brahmaputra river, in the zamíndári of Dwarka Náth Rái Chaudri; thána Serajgunj, pargana Kágmári, sub-division Serajgunj, district Pubna.

The pillar is perforated, and 40·09 feet in height. It has a mark in the ground floor and another 2·50 feet below. The azimuths and perambulated distances of the circumjacent villages are:—Kidhapur 2° 54′, miles 3·98; Char Manikdaher 44° 34′, mile 1·00; Kántnagar 88° 41′, mile 0·99; and Sámpmára 134° 56′, miles 1·90.

XXVIII. Bághmára Tower Station, lat. 24° 45′, long. 89° 52′—observed at in 1873—is situated about a mile S. of the Jhinái nadi, in a large open plain appertaining to the village lands of Bághmára in the zamíndári of Janhavi Chaudráni; thána Pinghna, pargana Kágmári, sub-division Tangail, district Mymensingh.

The pillar is perforated, and 38·40 feet in height. It has a mark in the ground floor and another 2·73 feet below. The azimuths and perambulated distances of the surrounding places are:—Jagannáthganj factory 31° 39′, miles 3·97; Bághmára village 137° 17′, mile 0·17; Barobaria village 217° 22′, miles 1·03; and Dhanáta shiwála (temple) 282° 52′, miles 1·44.

XXIX. Rashídpur Tower Station, lat. 24° 46′, long. 90° 2′—observed at in 1872—is situated on the lands of the village of Rashídpur in the zamíndári of the late Mr. K.S. Brody, at the south-western corner of Talanápára bíl (marsh), on the left bank of the Bangsha nadi (river), and about ¼ of a mile from it; thána Gopálpur, pargana Pukuria, district Mymensingh.

The pillar is perforated, and 38·65 feet in height. It has a mark in the ground floor and another 2·23 feet below. The azimuths and distances of the circumjacent villages are:—Rashídpur 9° 38′, miles 2·44; Rámdebári 33° 2′, miles 1·35; Pákúla 148° 54′, mile 0·98; and Rámnagar 309° 14′, miles 1·65.

XXX. Aloákándi Tower Station, lat. 24° 45′, long. 89° 41′—observed at in 1873—is situated about 80 yards N. of the centre of the village of Aloákándi, about 1 mile E. of the Mansa nadi (river), and ½ a mile W. of the Dáokoba (Brahmaputra) river, in the zamíndári of Rádha Raman Munshi and Rámkumár Ghose; thána Sháriakándi, pargana Pratápbáju, district Bogra.

The pillar is perforated, and 38·32 feet in height. It has a mark in the ground floor and another 2·28 feet below. The azimuths and perambulated distances of the surrounding villages are:—Isamára 113° 51′, miles 2·25; Panchbaboli 159° 7′, miles 1·77; Asanpára 226° 34′, mile 0·91; and Aloákándi Hát 303° 12′, mile 0·24.

XXXI. Poerbári Tower Station, lat. 24° 54′, long. 89° 56′—observed at in 1872—is situated on the village land of Poerbári in the zamíndári of Harish Chandra Chaudri, on the right bank of the Jhinái river, and about ½ a mile from it; thána Jamálpur, pargana Zafarsháhi, sub-division Jamálpur, district Mymensingh.

The pillar is perforated, and 38·38 feet in height. It has a mark in the ground floor and another 2·52 feet below. The azimuths and perambulated distances of the surrounding villages are:— Jhaugara 4° 8′, miles 1·41; Bágbári 71° 27′, miles 2·11; Poerbári 145° 53′, mile 0·61; Bhapki 182° 50′, mile 0·89; and Jamálpur Jail 230° 36′, miles 4·21.

XXXII. Gaborgrám Tower Station, lat. 24° 54′, long. 89° 45′—observed at in 1872-73—is situated on the left bank of the Dáokoba now the main channel of the Brahmaputra river, distant 1·35 miles from it, and about 50 yards N. of the Kharka bíl (marsh). It is in the lands of the long and straggling village of Gaborgram, and immediately E. of it; thána Jamálpur, pargana Zafarsháhi, sub-division Jamálpur, district Mymensingh.

The pillar is perforated, and 33·36 feet in height. It has a mark in the ground floor and another 2·56 feet below. The azimuths and perambulated distances of the circumjacent villages are:—Súknagári 28° 38′, miles 1·05; Madárganj 101° 9′, miles 2·12; Báljúri village and bazar 202° 0′, miles 1·03; and Júnáli 253° 14′, miles 1·53.

XXXIII. Sádipati Tower Station, lat. 25° 1′, long. 89° 50′—observed at in 1873—is situated on the southern bank of the Alar khál, at the centre of the long and straggling village of that name in the zamíndári of Káshínáth Rái and Girija Kantha Nehári; thána Jamálpur, pargana Zafarsháhi, sub-division Jamálpur, district Mymensingh.

The pillar is perforated, and 40·30 feet in height. It has a mark in the ground floor and another 2·40 feet below. The azimuths and perambulated distances of the circumjacent villages are:—Tegharia 15° 32′, mile 0·89; Rámbhadra 77° 24′, miles 3·14; Panchbária 153° 5′, miles 2·31; and Kulia 256° 18′, miles 1·39.

XXXIV. Char Sherpur Tower Station, lat. 25° 2′, long. 90° 1′—observed at in 1873—is situated in a large open plain appertaining to the lands of Char Sherpur village in the zamíndári of Harchandra Chaudri; thána and pargana Sherpur, sub-division Jamálpur, district Mymensingh.

The pillar is perforated, and 31·35 feet in height. It has a mark in the ground floor and another 2·54 feet below. The azimuths and perambulated distances of the surrounding villages are:—Char Sherpur 35° 8′, mile 0·47; Boistabnagar 110° 23′, miles 1·49; Jognimora 214° 25′, miles 1·94; and of Sherpur town (thána) 279° 52′, miles 1·98.

XXXV. Boládánga Tower Station, lat. 25° 2′, long. 89° 39′—observed at in 1873—is situated in the lands of the small village of that name in the zamíndári of Tára Mani Debya, on the right bank of the Dáokoba or Konai river (now the main channel of the Brahmaputra), and about ½ of a mile from the Chaluábári Ghát; thána Sháriakándi, pargana Islámabad, district Bogra.

The pillar is perforated, and 38·23 feet in height. It has a mark in the ground floor and another 2·41 feet below. The azimuths and perambulated distances of the circumjacent places are:—Chukainagar masjid (mosque) 57° 29′, miles 1·15; Boládánga 102° 49′, mile 0·19; Jumabári 125° 57′, miles 3·37; and Bangorgáchha 354° 55′, miles 2·41. This station was reported by the district officer in July 1875 to have been washed away by the Dáokoba river.

XXXVI. Jánkípur Tower Station, lat. 25° 10′, long. 89° 56′—observed at in 1873—is situated in the lands of the village of that name in the zamíndári of Gobinda Kumár Chaudri, Tára Sundari Chaudráni and Muni Kanya Chaudráni; thána and pargana Sherpur, sub-division Jamálpur, district Mymensingh.

The pillar is perforated, and 38·13 feet in height. It has a mark in the ground floor and another 2·60 feet below. The azimuths and perambulated distances of the circumjacent villages are:—Bináder Char 51° 25′, mile 1·00; Char Kauri 164° 4′, miles 1·09; Májpára 186° 27′, miles 1·15; and Jánkípur (N. hamlet) 342° 40′, mile 0·38.

XXXVII. Halkáchar Tower Station, lat. 25° 10′, long. 89° 45′—observed at in 1873—is situated in the lands of the village of Halkáchar on the left bank of the Konai or Brahmaputra river, and distant ½ mile from it, in the zamíndári of Prasanna Kumár Thákur; thána Diwánganj, pargana Pátiládaho, sub-division Jamálpur, district Mymensingh.

The pillar is perforated, and 40·38 feet in height. It has a mark in the ground floor and another 2·35 feet below. The azimuths and perambulated distances of the circumjacent villages are:—Berkursa 20° 0′, miles 2·82; Sikájáni 255° 2′, miles 3·05; Halkáchar 275° 48′, mile 0·39; and Morgachara 351° 3′, miles 1·55.

XXXVIII. Bonárpára Tower Station, lat. 25° 11′, long, 89° 34′—observed at in 1873—is situated in a large open plain appertaining to the lands of the village of that name, on the left bank of the Alai nadi (river), in the zamíndári of Shama Sundari Debya and Brahma Moyi Debya; thána Gobindganj, pargana Muktipur, sub-division Gaibanda, district Rungpore.

The pillar is perforated, and 38·17 feet in height. It has a mark in the ground floor and another 2·18 feet below. The azimuths and perambulated distances of the circumjacent villages are:—Bharat 196° 28′, miles 1·67; Raghupur 279° 17′, mile 0·47; Kálápáni 286° 29′, miles 1·33; and Bonárpára 348° 20′, mile 0·46.

XXXIX. Gáropára Hill Station, lat. 25° 21′, long. 89° 54′—observed at in 1873—is situated on the Dadobhita-Kandakona, a spur of the Karibári hills in the zamíndári of Gunamani Debya and Barada Sundari Debya; thána South Sálmara, outpost Kákripára, district Goálpára, Lower Assam. It is named from a small settlement of the Gáros called Dadobhita about ½ mile to E.S.E., and Kandakona was the name of an old village now in ruins; the best ascent to the station is from the village of Lipachati on the left bank of the Rokai nadi, a stream flowing all the year round.

The pillar is solid, and 4·50 feet in height. It contains three marks, one at the ground level, the second 2·25 feet above it, and the third flush with the upper surface of the pillar. The azimuths and estimated distances of the circumjacent villages are:—Chapaháti (Gáro clearing) 47°, miles 1½; Nágápára 101°, mile 1; Lipachati 108°, mile 1; and Káligaon Bhui (Rajbangsi) 117°, miles 1½.

XL. Kánchipára Tower Station, lat. 25° 19′, long. 89° 39′—observed at in 1873—is situated in the lands of the village of that name in the zamíndári of Prasanna Kumár Thákur and about 2½ miles N.W. of Káliganj, a calling station for the river steamers, on the right bank of the Brahmaputra river; thána Bhabániganj, pargana Pátiládaha, sub-division Bhabániganj, district Rungpore.

The pillar is perforated, and 40·54 feet in height. It has a mark in the ground floor and another 2·00 feet below. The azimuths and perambulated distances of the circumjacent villages are:—Haripur 33° 31′, miles 1·41; Hasanpur 137° 29′, mile 0·57; Kánchipára 172° 10′, mile 0·22; and Guldaha 195° 29′, mile 0·83.

XLI. Borel Tower Station, lat. 25° 27′, long. 89° 44′—observed at in 1873—is situated towards the northern extremity of the village of Ujan Bochágari on the right bank of the Borel khál (rivulet) and distant about 130 yards from it; in the zamíndári of Ráni Swarna Moyi, thána Sundarganj, pargana Báhárbanda, sub-division Bhabániganj, district Rungpore.

The pillar is perforated, and 35·81 feet in height. It has a mark in the ground floor and another 2·28 feet below. The azimuths and perambulated distances of the circumjacent village are:—Bháti Bochágari (semal tree marked +) 39° 49′, mile 0·54; Ujan Borel (gouj tree marked +) 164° 44′, mile 0·88; Barapatar (pipal tree marked +) 236° 50′, mile 0·72; and Bháti Borel (semal tree marked +) 326° 46′, mile 0·14.

XLII. Káshdaha Tower Station, lat. 25° 30′, long. 89° 34′—observed at in 1873—is situated in the lands of the village of Káshdaha in the zamíndári of Ráni Swarna Moyi; thána Sádullahpur, pargana Báhárbanda, sub-division Bhabániganj, district Rungpore.

The pillar is perforated, and 42·58 feet in height. It has a mark in the ground floor and another 2·33 feet below The azimuths and perambulated distances of the circumjacent villages are:—Káshdaha (N.W. hamlet) 117° 31′, mile 0·21; Bhabánipur (highest pipal tree marked +) 156° 54′, mile 0·80; Puranbári (mango tree marked +) 203° 43′, miles 1·17; Maruadaha (pipal tree marked +) 340° 11′, miles 1·40; and of Hingal Sirkár's masjid (centre of N. wall of mosque) 3° 52′, measured distance 176½ feet.

XLIII. Peshkárbhita Hill Station, lat. 25° 31′, long. 89° 56′—observed at in 1873-74—is situated on the western extremity of a small detached range of the Karaibári hills; in the zamíndári of Níl Komal Láhiri and Bhubaneswari Debya, thána South Sálmara, pargana Karaibári, sub-division Dhubri, district Goálpára (Lower Assam). The ascent to the station is from Peshkárbhita which is the best place for encampment, and supplies can be had either from Kákripára Hát, or from Manikár Char which is a well known place.

The pillar is solid, and 5·00 feet in height. It contains three marks, one at the ground level, another 2·50 feet above it, and the third flush with the upper surface of the pillar. The azimuths and estimated distances of the circumjacent villages are:—Peshkárbhita 41°, mile ½; Kákripára Hát and police out-post 44°, mile 1; and Manikár Char 129°, miles 1½.

XLIV. Narsinghbanj Tower Station, lat. 25° 37′, long. 89° 43′—observed at in 1874—is situated in the lands of the village of that name, on the southern side of the Tista nála, and 431 feet distant from it; in the zamíndári of Ráni Swarna Moyi, thána Olipur, pargana Báhárbanda, sub-division and district Rungpore.

The pillar is perforated, and 41·23 feet in height. It has a mark in the ground floor and another 2·67 feet below. The azimuths and perambulated distances of the circumjacent villages are:—Kamarchára Potimári (pipal tree marked +) 21° 44′, miles 1·03; Sirkárnibhita (pipal tree marked + at N.W. end of village) 41° 56′, mile 0·58; Modafar Bajra (pipal tree marked +) 67° 0′, mile 0·97; Sirdárpára (jack tree at N.W. end of village) 330° 31′, miles 1·30; Charchala bil (pakar tree marked + on N.E. side of marsh) 335° 15′, mile 0·91; and of the referring mark pillar 51° 25′, mile 0·47.

XLV. Singmári Hill Station, lat. 25° 44′, long. 89° 57′—observed at in 1874—is situated on a spur of the hill called Ulúpára on southern side of the Jingiram river, and distant about ¾ of a mile from it; in the zamíndári of Pratáp Chandra Barua, thána South Sálmara, pargana Aurungabad, sub-division Dhubri, district Goálpára (Lower Assam). The road to the station is from Singmári, and supplies can be had from Singmári Hát or from the zamíndár's kachahri (office) at Sukchar village.

The pillar is solid, and 4·50 feet in height. It has three marks, one at the ground level, another 2·25 feet above it, and the third flush with the upper surface of the pillar. The directions and estimated distances of the surrounding places are:—Singmári Hát and thána W., mile ¾; and Sukchar village W., miles 1½.

XLVI. Rangira Hill Station, lat. 25° 35′, long. 90° 10′—observed at in 1874—is situated on the eastern extremity of a very prominent and detached hill; district Gáro Hills. This is a station of the Revenue Survey as well as of the Gáro Hill Topographical Survey executed in season 1872-73. The road to the

station was made from the village of Harigaon passing through the Gáro village of Buripára.

The pillar is solid, and 3·00 feet in height. It contains two marks, the upper 3·00 feet above the lower which is at the ground level. The directions and estimated distances of the circumjacent places are :—Tura S.E., miles 6 ; and Buripára N., miles 2½.

XLVII. Gobindpur Tower Station, lat. 25° 48′, long. 89° 47′—observed at in 1874—is situated in the lands of the village of Gordhara, on a mound 8 feet high and 150 feet to S. of the Gordhara nála, and about ¼ mile N. of a small bíl (marsh) called Tákimári, between the rivers Dharlla and Brahmaputra ; in the zamíndári of Digambári Debya and Kishtendra Rai, thána Nágeshwari, pargana Bhitarbanda, sub-division and district Rungpore.

The pillar is perforated, and 40·08 feet in height. It has a mark in the ground floor and another 2·58 feet below. The azimuths and perambulated distances of the circumjacent places are :—Chitoli Sáthbhita (large semal tree marked +) 4° 17′, mile 0·93 ; Bwálipar (Pakar tree at W. end marked +)166° 42′, miles 1·10 ; Moisar Kamlar (jack tree marked +) 263° 37′, mile 0·53 ; and Majita Hát (banyan tree marked +) 340° 3′, miles 1·83.

XXII.—*(Of the Assam Longitudinal Series).* Alangjáni Tower Station, lat. 25° 59′, long. 89° 48′—observed at in 1857 and 1874—is in the lands of the village of that name, on the right bank of the Dudh Komári nadi (river), and distant about ¼ of a mile from it ; in the zamíndári of Digambári Debya and Kishtendra Rai, thána Nágeshwari, pargana Bhitarbanda, sub-division and district Rungpore.

The station as originally built in 1857 consisted of a perforated tower 24·92 feet in height of which the last or uppermost foot was only a pillar 3½ feet in diameter and this was surrounded by a scaffolding platform for the observatory tent. It contained one central mark at the ground level. When again visited in 1874 for the purpose of closing the Brahmaputra Series, the structure was found very shaky and partly crumbled down ; this was entirely removed and a perforated pillar 42·76 feet in height constructed over the original mark which was left undisturbed. The azimuths and perambulated distances of the circumjacent places are :—Dángi bíl (centre of N. side) 3° 32′, mile 0·62 ; Loseni village (N.E. end) 110° 59′, mile 0·44 ; Topamári bil (pipal tree at S.W. corner) 51° 32′, mile 0·89 ; and Muria Hát (pipal tree marked +) 124° 28′, miles 1·85.

XXV.—*(Of the Assam Longitudinal Series).* Sámding Hill Station, lat. 25° 53′, long. 90° 5′—observed at in 1856, 1857 and 1874—is about the centre of a small detached range of the Kálu Málupára hills some 400 feet above the level of the surrounding country, and about ¼ of a mile E. of the village of Sámding in the zamíndári of Prataáp Chandra Barua ; thána South Sálmara, pargana Kálu Málupára, sub-division Dhubri, district Goálpára. (Lower Assam).

The station of 1856 and 1857 consisted of a solid pillar 3 feet in height and contained two marks, one at its upper surface and another at the ground level. When again visited in 1874 for the purpose of closing the Brahmaputra Series, the old pillar was removed and another 5·00 feet in height, built over the original lower mark ; and two mark-stones were placed therein in the normal of the original one, *viz.* one at its upper surface and the other 2·50 below. The azimuths and estimated distances of the surrounding places are :—Sálmara Hát and zamíndár's kachahri (office) 137°, miles 2 ; and Shámnagar village 304°, miles 1¾.

June 1877.

J. B. N. HENNESSEY,

In charge of Computing Office.

BRAHMAPUTRA 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 sub-divisions in question is accordingly given in the following table, and is derived chiefly from the annual reports, up to 1881-82, made by the Civil Officials to whose care the stations have been committed. The statement also gives the 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 Construction and Condition of the Station	
XX	Maheshpur	Furreedpore	P. Teliháti, Thá. Maksúdpur	Maheshpur	...	...
XXI	Pákdiha	,,	P. Mohabbatpur, Thá. Maksúdpur	Pákdiha	...	...
I	Harina	,,	P. Haweli, Thá. Ainpur	Harina	...	...
II	Bághpur	,,	P. Jalálpur, Thá. Bhánga	Bághpur	...	...
III	Saidpur	,,	P. Shatoir, Thá. Bhushana	Saidpur	...	...
IV	Gázirtek	,,	P. Bhadrasan, Thá. Furreedpore	Gázirtek	...	...
V	Sonpácha	,,	P. Nasibsháhi, Thá. Furreedpore	Dignagar	...	...
VI	Kánchanpur	Dacca	P. Nasibsháhi, Thá. Harirámpur	Kánchanpur	...	...
VII	Bráhmangaon	,,	P. Jahánabad, Thá. Nawabgang	Bráhmangaon	...	...
VIII	Khánkhánápur	Furreedpore	P. Amírabad, Thá. Goalundo	Khánkhánápur	...	...
IX	Rámdiha	Dacca	P. Chandprotáp, Thá. Jáfarganj	Rámdiha	Mark-stone missing, and the tower slightly injured ás reported in 1875.	

NOTE.—Stations XX and XXI appertain to the East Calcutta Longitudinal 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 Construction and Condition of the Station
X	Paipára	Dacca	P. Chandprotáp, Thá. Jáfarganj	Paipára	Tower slightly injured as reported in 1878.
XI	Tepri	,,	Ditto.	Tepri	Ditto.
XII	Chámtia	,,	P. Chandprotáb, Thá. Manickgunge	Chámtia	... ...
XIII	Bháranga	Pubna	P. Sinduri, Thá. Mathura	Bháranga	... ...
XIV	Láohóti	Mymensingh	P. and Thá. Átia	Láohóti	Roof of tower fallen in as reported in 1878.
XV	...	,,	...	...	Washed away by the river Brahmaputra as reported in 1882. Previous to the destruction of this tower a new masonry pillar was constructed and fixed from the old station by Mr. Kraal of the Revenue Survey; for full particulars relating to the new station see pages 37—V and 38—V.
XVI	Belta	,,	P. Kágmári, Thá. Átia	Belta	... ...
XVII	Basail	,,	P. and Thá. Átia	Basail	Tower slightly injured as reported in 1875.
XVIII	Dúliabári	Pubna	P. Yusafsháhi, Thá. Shahzadpore	Dúliabári	... ...
XIX	Ichhápur	Mymensingh	P. Pukuria, Thá. Gopálpur	Ichhápur	Tower slightly injured as reported in 1875.
XX	Mokimpur	Pubna	P. Yusafsháhi, Thá. Ullapára	Mokimpur	... ...
XXI	Básália	Mymensingh	P. Pukuria, Thá. Gopálpur	Básália	... ...
XXII	Banikátra	,,	Ditto.	Banikátra	... ...
XXIII, XXIV	Soilábári (old) and (new)	Pubna	P. Barabáju, Thá. Serajgunj	Soilábári	... ...
XXV	Poelsa	Mymensingh	P. Pukuria, Thá. Gopálpur	Poelsa	... ...
XXVI	...	Pubna	...	...	Washed away by the river Brahmaputra in 1872.
XXVII	...	,,	...	...	Washed away by the river Brahmaputra as reported in 1874.
XXVIII	Bághmára	Mymensingh	P. Kágmári	Bághmára	... ...
XXIX	Rashídpur	,,	P. Pukuria, Thá. Gopálpur	Rashídpur	... ...

NOTE.—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 Construction and Condition of the Station
XXX	Aloákándi	Bogra	P. Pratápbáju, Thá. Sháriakándi	Aloákándi	"Pillar fallen into disrepair" as reported in 1875.
XXXI	Poerbári	Mymensingh	P. Zafarsháhi	Poerbári	... ...
XXXII	Gáborgrám	„	Ditto.	Gáborgrám	... ...
XXXIII	Sádipati	„	Ditto.	Sádipati	... ...
XXXIV	Char Sherpur	„	P. Sherpur	Char Sherpur	... ...
XXXV	...	Bogra	...	...	Washed away by the river Dáokoba as reported in 1875.
XXXVI	Jánakípur	Mymensingh	P. Sherpur	Jánakípur	... ...
XXXVII	...	„	...	...	Washed away by the river Brahmaputra as reported in 1878.
XXXVIII	Burj	Rungpore	P. Muktipur, Thá. Gobindganj	Bonárpára	... ...
XXXIX	...	Gáro Hills	P. Karaibári, Thá. Turágiri Hills	...	In 1873 a square protecting pillar of masonry was built over the circular pillar on which the large theodolite stood and which carries the true mark-stone. The square pillar is 3½ feet high, 28 inches square at base and 20 inches at top, and bears a sufficiently accurate mark for Topographical and Revenue Survey purposes, so that it is unnecessary to refer to the mark-stone which thus remains concealed and protected. A pyramidal pile of earth and stones, 7 feet square at base and 6 feet high, covers the protecting pillar. Platform tumbled down as reported in 1880.
XL	Burj	Rungpore	P. Pátiládaha, Thá. Bhabániganj	Kánchipára	... ...
XLI	„	„	P. Báhárbanda, Thá. Sundarganj	Ujan Bochágari	... ...
XLII	„	„	P. Báhárbanda, Thá. Sádullahpur	Káshdaha	... ...
XLIII	...	Gáro Hills	P. Karaibari, Thá. Turágiri Hills	Chamaibel	In 1874 a square protecting pillar of masonry was built over the circular pillar on which the large theodolite stood and which carries the true mark-stone. The square pillar is 3½ feet high, 28 inches square at base and 20 inches at top, and bears a sufficiently accurate mark for Topographical and Revenue Survey purposes, so that it is unnecessary to refer to the mark-stone which thus remains concealed and protected. A pyramidal pile of earth and stones, 7 feet square at base and 6 feet high, covers the protecting pillar. Pillar partly broken as reported in 1880.
XLIV	Burj	Rungpore	P. Báhárbanda, Thá. Olipur	Narsinghpur	... ...
XLV	...	Gáro Hills	P. Karaibári, Thá. Turágiri Hills	...	In 1874 a square protecting pillar of masonry was built over the circular pillar on which the large theodolite stood and which carries the true mark-stone. The square pillar is 3½ feet high, 28 inches square at base and 20 inches at top, and bears a sufficiently accurate mark for Topographical and Revenue Survey purposes, so that it is unnecessary to refer to the mark-stone which thus remains concealed and protected. A pyramidal pile of earth and stones, 7 feet square at base and 6 feet high, covers the protecting pillar.

NOTE.—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 Construction and Condition of the Station
XLVI	Chota Nera	Gáro Hills	P. Karaibári, Thá. Turágiri Hills	Harigaon	In 1874 a square protecting pillar of masonry was built over the circular pillar on which the large theodolite stood and which carries the true mark-stone. The square pillar is 3½ feet high, 28 inches square at base and 20 inches at top, and bears a sufficiently accurate mark for Topographical and Revenue Survey purposes, so that it is unnecessary to refer to the mark-stone which thus remains concealed and protected. A pyramidal pile of earth and stones, 7 feet square at base and 6 feet high, covers the protecting pillar.
XLVII	Burj	Rungpore	P. Bhitarbanda, Thá. Nágeshari	Gordhara	... ...
XXII	„	„	Ditto.	Alangjáni	... ...
XXV	Sámding	Goálpára	Thá. Dhubri, Tah. Ghurla	Sámding	In 1874 a square protecting pillar of masonry was built over the circular pillar on which the large theodolite stood and which carries the true mark-stone. The square pillar is 3½ feet high, 28 inches square at base and 20 inches at top, and bears a sufficiently accurate mark for Topographical and Revenue Survey purposes, so that it is unnecessary to refer to the mark-stone which thus remains concealed and protected. A pyramidal pile of earth and stones, 7 feet square at base and 6 feet high, covers the protecting pillar.

NOTE.—Stations XXII and XXV appertain to the Assam Longitudinal Series. P. stands for pargana, Thá. for thána, and Tah. for tahsíl.

December 1882.

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

BRAHMAPUTRA SERIES.

PRINCIPAL TRIANGULATION. TRIANGLES.

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle	Distance		
				Log. feet	Feet	Miles
		"	° ′ ″			
	Maheshpur, XX	·21	62 10 12·26	4·7506377	56316·8	10·666
1	Pákdiha, XXI	·20	53 50 8·70	4·7110701	51412·7	9·737
	Harina, I	·21	63 59 39·04	4·7576584	57234·6	10·840
	Maheshpur, XX	·22	66 51 54·49	4·7827525	60639·1	11·485
2	Harina, I	·22	61 54 17·65	4·7647127	58171·8	11·017
	Saidpur, III	·21	51 13 47·86	4·7110701	51412·7	9·737
	Harina, I	·24	59 56 48·76	4·7727804	59262·6	11·224
3	Saidpur, III	·24	57 43 10·31	4·7625673	57885·2	10·963
	Sonpácha, V	·24	62 20 0·93	4·7827525	60639·1	11·485
	Harina, I	·22	59 30 3·74	4·7559816	57014·0	10·798
4	Sonpácha, V	·22	59 28 37·86	4·7558750	57000·0	10·795
	Gázitak, IV	·23	61 1 18·40	4·7625673	57885·2	10·963
	Pákdiha, XXI	·21	58 42 46·64	4·7403870	55003·1	10·417
5	Harina, I	·21	60 14 37·10	4·7472278	55876·3	10·583
	Bághpur, II	·22	61 2 36·26	4·7506377	56316·8	10·666

NOTES.—1. The values of the side are given in the same line with the opposite angle.
2. Stations Maheshpur, XX and Pákdiha, XXI appertain to the East Calcutta Longitudinal Series.

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle	Distance		
				Log. feet	Feet	Miles
		"	° ′ ″			
	Harina, I	·20	54 24 32·41	4·7095668	51235·0	9·704
6	Bághpur, II	·20	64 46 55·32	4·7558750	57000·0	10·795
	Gázitak, IV	·20	60 48 32·27	4·7403870	55003·1	10·417
	Gázitak, IV	·24	62 55 26·05	4·7777998	59951·5	11·354
7	Sonpácha, V	·23	59 12 48·39	4·7622469	57842·5	10·955
	Gáskanchan, VI	·23	57 51 45·56	4·7559816	57014·0	10·798
	Sonpácha, V	·22	59 50 60·00	4·7552904	56923·3	10·781
8	Gáskanchan, VI	·22	54 32 45·28	4·7293522	53623·1	10·156
	Khánkhánápur, VIII	·22	65 36 14·72	4·7777998	59951·5	11·354
	Gáskanchan, VI	·22	69 42 37·54	4·7939983	62229·8	11·786
9	Khánkhánápur, VIII	·21	51 12 0·04	4·7135435	51706·3	9·793
	Paipára, X	·22	59 5 22·42	4·7552904	56923·3	10·781
	Gáskanchan, VI	·18	52 54 52·17	4·6772474	47560·6	9·008
10	Paipára, X	·18	66 56 32·24	4·7392280	54856·5	10·389
	Rámdiha, IX	·18	60 8 35·59	4·7135435	51706·3	9·793
	Gázitak, IV	·23	59 44 29·67	4·7654216	58266·9	11·035
11	Gáskanchan, VI	·24	61 13 28·99	4·7717868	59127·1	11·198
	Bráhmangaon, VII	·23	59 2 1·43	4·7622469	57842·5	10·955
	Gáskanchan, VI	·23	63 44 29·23	4·7766998	59799·8	11·326
12	Bráhmangaon, VII	·22	55 21 11·63	4·7392280	54856·5	10·389
	Rámdiha, IX	·23	60 54 19·14	4·7654216	58266·9	11·035
	Rámdiha, IX	·18	55 45 44·99	4·7082592	51081·0	9·674
13	Paipára, X	·19	73 54 25·83	4·7735440	59366·9	11·244
	Tepri, XI	·18	50 19 49·18	4·6772474	47560·6	9·008
	Paipára, X	·22	60 53 17·73	4·7616097	57757·7	10·939
14	Tepri, XI	·22	68 31 0·51	4·7889890	61516·1	11·651
	Bháranga, XIII	·21	50 35 41·76	4·7082592	51081·0	9·674
	Tepri, XI	·21	70 37 35·62	4·7926093	62031·1	11·748
15	Bháranga, XIII	·21	47 55 30·49	4·6884860	48807·4	9·244
	Bangaon, XV	·21	61 26 53·89	4·7616097	57757·7	10·939
	Tepri, XI	·18	56 24 19·75	4·6917883	49180·0	9·314
16	Bangaon, XV.	·18	67 50 12·88	4·7378212	54679·1	10·356
	Bani, XIV	·17	55 45 27·37	4·6884860	48807·4	9·244
	Rámdiha, IX	·24	63 28 49·22	4·7838101	60786·9	11·513
17	Tepri, XI	·23	55 36 25·98	4·7486444	56038·9	10·617
	Chámtia, XII	·24	60 54 44·80	4·7735440	59366·9	11·244
	Tepri, XI	·22	58 30 47·72	4·7534438	56681·8	10·735
18	Chámtia, XII	·22	55 20 56·29	4·7378212	54679·1	10·356
	Bani, XIV	·23	66 8 15·99	4·7838101	60786·9	11·513
	Bani, XIV	·19	61 58 22·04	4·7396287	54907·1	10·399
19	Bangaon, XV	·20	65 46 50·93	4·7537901	56727·0	10·744
	Belta, XVI	·19	52 14 47·03	4·6917883	49180·0	9·314
	Bangaon, XV	·20	54 14 39·38	4·7150331	51884·0	9·827
20	Belta, XVI	·21	66 34 24·67	4·7683760	58664·6	11·111
	Dúliabári, XVIII	·21	59 10 55·95	4·7396287	54907·1	10·399

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle			Distance		
						Log. feet	Feet	Miles
		"	°	′	"			
	Belta, XVI	·20	45	59	7·24	4·6925561	49267·0	9·331
21	Dúliabári, XVIII	·20	84	46	56·69	4·8339261	68222·3	12·921
	Mokimpur, XX	·20	49	13	56·07	4·7150331	51884·0	9·827
	Belta, XVI	·27	68	5	18·03	4·8407423	69301·4	13·125
22	Mokimpur, XX	·26	45	56	39·88	4·7298332	53082·6	10·167
	Ichhápur, XIX	·27	65	58	2·09	4·8339261	68222·3	12·921
	Bani, XIV	·23	59	15	36·32	4·7604684	57606·1	10·910
23	Belta, XVI	·23	62	55	11·07	4·7757947	59675·3	11·302
	Basail, XVII	·23	57	49	12·61	4·7537901	56727·0	10·744
	Belta, XVI	·22	64	11	10·64	4·7724736	59220·7	11·216
24	Basail, XVII	·22	54	41	21·31	4·7298332	53082·6	10·167
	Ichhápur, XIX	·22	61	7	28·05	4·7604684	57606·1	10·910
	Ichhápur, XIX	·27	57	56	24·14	4·7938046	62202·0	11·781
25	Mokimpur, XX	·26	51	17	12·90	4·7579232	57269·5	10·846
	Basalia, XXI	·27	70	46	22·96	4·8407423	69301·4	13·125
	Mokimpur, XX	·23	58	2	46·73	4·7589593	57406·3	10·872
26	Basalia, XXI	·23	55	7	16·31	4·7443260	55504·2	10·512
	Soilábári (new), XXIV	·23	66	49	56·96	4·7938046	62202·0	11·781
	Basalia, XXI	·21	47	27	59·05	4·6887352	48835·5	9·249
27	Soilábári (new), XXIV	·21	72	30	46·23	4·8007880	63210·3	11·972
	Párkoksa (new), XXVII	·21	60	1	14·72	4·7589593	57406·3	10·872
	Basalia, XXI	·26	67	29	52·05	4·8202649	66109·7	12·521
28	Párkoksa (new), XXVII	·25	50	27	12·22	4·7417711	55178·7	10·451
	Poelsa, XXV	·25	62	2	55·73	4·8007880	63210·3	11·972
	Ichhápur, XIX	·17	56	3	45·47	4·6943428	49470·1	9·369
29	Basalia, XXI	·17	50	6	19·41	4·6603718	45748·0	8·664
	Banikátra, XXII	·17	73	49	55·12	4·7579232	57269·5	10·846
	Basalia, XXI	·20	69	2	8·88	4·7744213	59486·9	11·266
30	Banikátra, XXII	·20	60	1	1·68	4·7417711	55178·7	10·451
	Poelsa, XXV	·20	50	56	49·44	4·6943428	49470·1	9·369
	Poelsa, XXV	·25	58	36	44·63	4·7595882	57489·6	10·888
31	Párkoksa (new), XXVII	·26	58	36	31·80	4·7850506	60960·8	11·546
	Bághmára, XXVIII	·26	67	46	43·57	4·8202649	66109·7	12·521
	Párkoksa (new), XXVII	·23	61	1	54·77	4·7628999	57929·5	10·971
32	Bághmára, XXVIII	·22	58	42	46·73	4·7526977	56584·5	10·717
	Aloákándi, XXX	·22	60	15	18·50	4·7595882	57489·6	10·888
	Bághmára, XXVIII	·22	54	30	28·79	4·7346672	54283·4	10·281
33	Aloákándi, XXX	·23	65	9	45·84	4·7817866	60504·4	11·459
	Gaborgrám, XXXII	·23	60	19	45·37	4·7628999	57929·5	10·971
	Bághmára, XXVIII	·23	58	51	3·81	4·7575162	57215·8	10·836
34	Gaborgrám, XXXII	·22	56	19	25·19	4·7453499	55635·2	10·537
	Poerbári, XXXI	·23	64	49	31·00	4·7817866	60504·4	11·459
	Poelsa, XXV	·24	58	27	32·30	4·7656367	58295·7	11·041
35	Bághmára, XXVIII	·24	58	30	46·92	4·7658880	58329·5	11·047
	Rashídpur, XXIX	·24	63	1	40·78	4·7850506	60960·8	11·546

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle	Distance		
				Log. feet	Feet	Miles
		"	° ′ ″			
	Bághmára, XXVIII	·23	61 38 8·78	4·7665079	58412·8	11·063
36	Rashídpur, XXIX	·22	56 56 25·42	4·7453499	55635·2	10·537
	Poerbári, XXXI	·23	61 25 25·80	4·7656367	58295·7	11·041
	Poerbári, XXXI	·21	57 9 39·17	4·7321135	53965·2	10·221
37	Gaborgrám, XXXII	·21	59 51 51·44	4·7446677	55547·9	10·520
	Sádipati, XXXIII	·21	62 58 29·39	4·7575162	57215·8	10·836
	Gaborgrám, XXXII	·24	64 57 9·08	4·7886637	61470·1	11·642
38	Sádipati, XXXIII	·23	62 21 33·48	4·7789282	60107·4	11·384
	Boládánga, XXXV	·23	52 41 17·44	4·7321135	53965·2	10·221
	Sádipati, XXXIII	·25	61 39 0·71	4·7875566	61313·6	11·612
39	Boládánga, XXXV	·24	56 25 38·57	4·7637838	58047·5	10·994
	Halkáchar, XXXVII	·25	61 55 20·72	4·7886637	61470·1	11·642
	Sádipati, XXXIII	·23	58 49 11·57	4·7578924	57265·4	10·846
40	Halkáchar, XXXVII	·23	61 2 30·93	4·7676453	58566·0	11·092
	Jánkípur, XXXVI	·23	60 8 17·50	4·7637838	58047·5	10·994
	Jánkípur, XXXVI	·31	81 27 24·50	4·9141572	82064·8	15·543
41	Halkáchar, XXXVII	·30	54 54 28·83	4·8318784	67901·3	12·860
	Gáropára, XXXIX	·30	43 38 6·67	4·7578924	57265·4	10·846
	Halkáchar, XXXVII	·40	70 56 54·79	4·9354292	86184·5	16·323
42	Gáropára, XXXIX	·39	44 53 15·65	4·8085257	64346·6	12·187
	Kánchipára, XL	·39	64 9 49·56	4·9141572	82064·8	15·543
	Poerbári, XXXI	·23	63 47 23·09	4·7772983	59882·3	11·341
43	Sádipati, XXXIII	·23	59 52 50·50	4·7614263	57733·3	10·934
	Char Sherpur, XXXIV	·22	56 19 46·41	4·7446677	55547·9	10·520
	Sádipati, XXXIII	·22	54 18 52·98	4·7330103	54076·7	10·242
44	Char Sherpur, XXXIV	·22	61 36 5·87	4·7676453	58566·0	11·092
	Jánkípur, XXXVI	·23	64 5 1·15	4·7772983	59882·3	11·341
	Boládánga, XXXV	·25	60 26 4·01	4·7855614	61032·5	11·559
45	Halkáchar, XXXVII	·25	58 39 45·45	4·7776648	59932·8	11·351
	Bonárpára, XXXVIII	·26	60 54 10·54	4·7875566	61313·6	11·612
	Halkáchar, XXXVII	·24	52 30 57·61	4·7446766	55549·1	10·521
46	Bonárpára, XXXVIII	·25	66 48 32·51	4·8085257	64346·6	12·187
	Kánchipára, XL	·25	60 40 29·88	4·7855614	61032·5	11·559
	Gáropára, XXXIX	·30	40 46 32·58	4·7511419	56382·2	10·678
47	Kánchipára, XL	·30	52 33 9·08	4·8359342	68538·4	12·981
	Borel, XLI	·31	86 40 18·34	4·9354292	86184·5	16·323
	Gáropára, XXXIX	·31	64 41 58·43	4·8475998	70404·4	13·334
48	Borel, XLI	·30	53 38 37·76	4·7973766	62715·7	11·878
	Peshkárbhita, XLIII	·31	61 39 23·81	4·8359342	68538·4	12·981
	Borel, XLI	·33	70 12 30·37	4·8855937	76841·1	14·553
49	Peshkárbhita, XLIII	·32	50 14 13·25	4·7977912	62775·7	11·889
	Narsinghbanj, XLIV	·33	59 33 16·38	4·8475998	70404·4	13·334
	Kánchipára, XL	·23	48 30 35·17	4·7331406	54092·9	10·245
50	Borel, XLI	·24	80 9 32·85	4·8521814	71151·1	13·476
	Káshdaha, XLII	·24	51 19 51·98	4·7511419	56382·2	10·678

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle			Distance		
						Log. feet	Feet	Miles
		″	°	′	″			
	Borel, XLI	·25	69	18	59·25	4·8250590	66843·5	12·660
51	Káshdaha, XLII	·25	61	28	31·35	4·7977912	62775·7	11·889
	Narsinghbanj, XLIV	·25	49	12	29·40	4·7331406	54092·9	10·245
	Peshkárbhita, XLIII	·43	67	16	19·52	4·9302298	85158·8	16·129
52	Narsinghbanj, XLIV	·43	56	23	46·29	4·8859188	76898·7	14·564
	Singmári, XLV	·43	56	19	54·19	4·8855937	76841·1	14·553
	Peshkárbhita, XLIII	·46	68	4	24·42	4·9463606	88381·3	16·739
53	Singmári, XLV	·46	58	6	32·97	4·9079066	80892·2	15·320
	Rangira, XLVI	·45	53	49	2·61	4·8859188	76898·7	14·564
	Singmári, XLV	·48	91	17	7·44	5·0536692	113153·8	21·431
54	Rangira, XLVI	·48	37	22	25·49	4·8369756	68703·0	13·012
	Sámding, XXV	·48	51	20	27·07	4·9463606	88381·3	16·739
	Singmári, XLV	·52	65	3	55·18	4·9962205	99133·5	18·775
55	Sámding, XXV	·52	75	59	59·31	5·0256179	106076·2	20·090
	Alangjáni, XXII	·52	38	56	5·51	4·8369756	68703·0	13·012
	Narsinghbanj, XLIV	·30	43	40	51·64	4·7707103	58980·8	11·171
56	Singmári, XLV	·31	50	37	25·69	4·8196347	66013·8	12·503
	Gobindpur, XLVII	·31	85	41	42·67	4·9302298	85158·8	16·129
	Singmári, XLV	·31	38	35	2·02	4·8472851	70353·4	13·325
57	Gobindpur, XLVII	·31	109	53	34·16	5·0256179	106076·2	20·090
	Alangjáni, XXII	·30	31	31	23·82	4·7707103	58980·8	11·171

NOTE.—Stations Alangjáni, XXII, and Sámding, XXV appertain to the Assam Longitudinal Series.

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

May 1880.

BRAHMAPUTRA 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			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″				Inch
58	Gázitak, IV	33 44 2	4·515024	32736	6·200	24
	Gáskanchan, VI	45 9 12	4·621112	41794	7·915	,,
	Furreedpore Kachahri		4·762247	57842	10·955	
59	Tepri, XI	11 46 43	4·318910	20841	3·947	,,
	Chámtia, XII	24 45 45	4·631068	42763	8·099	,,
	Dúrgrám House		4·783810	60787	11·513	
60	Tepri, XI	14 45 15	4·189951	15486	2·933	,,
	Chámtia, XII	73 41 43	4·766142	58364	11·054	,,
	Báliáti House		4·783810	60787	11·513	
61	Tepri, XI	43 45 33	4·625978	42265	8·005	,,
	Bani, XIV	72 45 38	4·766142	58364	11·054	,,
	Báliáti House		4·737821	54679	10·356	
62	Bani, XIV	21 29 26	4·392900	24712	4·680	,,
	Bangaon, XV	25 19 11	4·460114	28848	5·464	,,
	Nagarpur House No. 1.		4·691788	49180	9·314	
63	Tepri, XI	30 50 54	4·477595	30033	5·688	24
	Bani, XIV	38 8 59	4·558466	36180	6·852	,,
	Nagarpur House No. 2.		4·737821	54679	10·356	
64	Tepri, XI	25 33 26	4·351653	22473	4·256	,,
	Bangaon, XV	43 59 30	4·558466	36180	6·852	,,
	Nagarpur House No. 2.		4·688486	48807	9·244	
65	Bani, XIV	6 49 52	4·258615	18139	3·435	,,
	Belta, XVI	15 0 23	4·596453	39487	7·479	,,
	Átia Masjid		4·753790	56727	10·744	
66	Mokimpur, XX	52 21 33	4·692832	49298	9·337	,,
	Basalia, XXI	35 14 17	4·555344	35921	6·803	,,
	Serajgunj Jute Mills No. 1.		4·793805	62202	11·781	
67	Mokimpur, XX	52 4 15	4·691050	49096	9·299	,,
	Basalia, XXI	35 49 11	4·561431	36428	6·899	,,
	Serajgunj Jute Mills No. 2.		4·793805	62202	11·781	

NOTES.—1. Names followed by Roman Numerals are those of Principal Stations. 2. The values of the side are given in the same line with the opposite angle.

No. of Triangle	Station		Corrected Plane Angle	Distance			Theodolite used
				Log. feet	Feet	Miles	
			° ′ ″				Inch
	Gáropára, XXXIX		34 55 35	4·566543	36859	6·981	12
68	Peshkárbhita, XLIII		68 7 44	4·776309	59746	11·316	,,
	Chápri	h.s.	76 56 41	4·797377	62716	11·878	,,
					0		
	Peshkárbhita, XLIII		44 37 53	4·781650	60485	11·456	,,
69	Rangira, XLVI		25 20 54	4·566543	36859	6·981	,,
	Chápri	h.s.	110 1 13	4·907907	80892	15·320	,,
	Gáropára, XXXIX		31 36 22	4·499495	31586	5·982	,,
70	Chápri	h.s.	65 57 12	4·740672	55039	10·424	,,
	Rámbolatári	,,	82 26 26	4·776309	59746	11·316	,,
					0		
	Peshkárbhita, XLIII		45 49 11	4·499495	31586	5·982	,,
71	Chápri	h.s.	10 59 29	3·924148	8397	1·590	,,
	Rámbolatári	,,	123 11 20	4·566543	36859	6·981	,,
	Peshkárbhita, XLIII		60 0 46	3·904281	8022	1·519	,,
72	Rámbolatári	h.s.	54 56 13	3·879724	7581	1·436	,,
	Kakripára Hát	s.	65 3 1	3·924148	8397	1·590	,,
	Peshkárbhita, XLIII		40 33 20	3·749993	5623	1·065	,,
73	Rámbolatári	h.s.	35 35 50	3·701942	5034	0·953	,,
	Kakripára	,,	103 50 50	3·924148	8397	1·590	,,
	Peshkárbhita, XLIII		103 27 52	4·060725	11501	2·178	,,
74	Kakripára	h.s.	51 20 24	3·965406	9234	1·749	,,
	Mankachar Hát	s.	25 11 44	3·701942	5034	0·953	,,
	Peshkárbhita, XLIII		155 2 47	4·544591	35042	6·637	,,
75	Rámbolatári	h.s.	19 9 4	4·435352	27249	5·161	,,
	Rahumári Indigo Vat			3·924148	8397	1·590	
					17		
	Peshkárbhita, XLIII		114 29 27	4·472635	29692	5·623	,,
76	Kakripára	h.s.	56 37 59	4·435352	27249	5·161	,,
	Rahumári Indigo Vat			3·701942	5034	0·953	
	Gáropára, XXXIX		58 19 3	5·074913	118826	22·505	24
77	Peshkárbhita, XLIII		94 59 39	5·143346	139106	26·346	,,
	Tura Chalet			4·797377	62716	11·878	
					0		
	Peshkárbhita, XLIII		17 45 58	4·686069	48537	9·193	,,
78	Rangira, XLVI		131 40 2	5·074913	118826	22·505	,,
	Tura Chalet			4·907907	80892	15·320	
	Rangira, XLVI		137 59 41	5·192747	155864	29·520	,,
79	Sámding, XXV		12 56 20	4·717268	52152	9·877	,,
	Durama Hill Staff			5·053669	113154	21·431	
	Rangira, XLVI		108 37 22	5·177589	150518	28·507	,,
80	Sámding, XXV		25 56 48	4·841957	69496	13·162	,,
	Arbela Hill Staff			5·053669	113154	21·431	

No. of Triangle	Station		Corrected Plane Angle	Distance			Theodolite used
				Log. feet	Feet	Miles	
			° ′ ″				Inch
	Peshkárbhita, XLIII		19 7 31	4·450674	28228	5·346	12
81	Singmári, XLV		44 4 15	4·777610	59925	11·349	,,
	Borchi	h.s.	116 48 14	4·885919	76899	14·564	,,
					1		
	Peshkárbhita, XLIII		48 56 54	4·788028	61380	11·625	,,
82	Rangira, XLVI		47 24 45	4·777610	59925	11·349	24
	Borchi	h.s.	83 38 21	4·907907	80892	15·320	12
	Singmári, XLV		119 49 32	4·488780	30816	5·836	,,
83	Borchi	h.s.	7 33 2	3·669087	4668	0·884	,,
	Singmári Hát	s.	52 37 26	4·450674	28228	5·346	,,
	Singmári, XLV		142 7 35	4·551896	35637	6·749	,,
84	Borchi	h.s.	8 46 37	3·947304	8857	1·678	,,
	Shukchar	s.	29 5 48	4·450674	28228	5·346	,,
	Singmári, XLV		148 7 57	4·596857	39524	7·486	,,
85	Borchi	h.s.		4·101520	12633	2·393	
	Chalakandi	s.	22 9 7	4·450674	28228	5·346	,,
	Singmári, XLV		52 40 16	4·012124	10283	1·948	,,
86	Chalakandi	s.	49 39 53	3·993774	9858	1·867	,,
	Malakháwa Temple No. 1			4·101520	12633	2·393	
	Singmári, XLV		63 32 0	4·640520	43704	8·277	24
87	Borchi	h.s.	81 8 36	4·683394	48239	9·136	12
	Shekarpára	,,	35 19 24	4·450674	28228	5·346	,,
					2		
	Singmári, XLV		41 47 26	4·661638	45882	8·690	24
88	Sámding, XXV		44 28 43	4·683394	48239	9·136	,,
	Shekarpára	h.s.	93 43 51	4·836976	68703	13·012	12
	Singmári, XLV		16 16 8	4·188491	15434	2·923	,,
89	Shekarpára	h.s.		4·589396	38850	7·358	
	Khák	,,	118 53 19	4·683394	48239	9·136	,,
	Singmári, XLV		28 17 50	4·266686	18479	3·500	,,
90	Khák	h.s.	56 59 28	4·514413	32690	6·191	,,
	Jor Mandir Tree			4·589396	38850	7·358	
	Sámding, XXV		126 19 28	4·737152	54595	10·340	,,
91	Shekarpára	h.s.	11 3 32	4·113881	12998	2·462	,,
	Sálmára Well			4·661638	45882	8·690	

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	Poerbári, XXXI		20 46 49	4·578559	37893	7·177	12
92	Char Sherpur, XXXIV		11 56 26	4·344347	22098	4·185	,,
	Jamálpur Jail	s.	147 16 45	4·761426	57733	10·934	,,

NOTE.—Stations Sámding, XXV appertains to the Assam Longitudinal Series.

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″				Inch
	Poerbári, XXXI	20 58 29	3·904654	8029	1·521	12
93	Jamálpur Jail s.	59 9 16	4·284591	19257	3·647	„
	Chandra „	99 52 15	4·344347	22098	4·185	„
	Jamálpur Jail s.	49 6 5	3·806971	6412	1·214	„
94	Chandra „	59 43 18	3·864830	7325	1·387	„
	Guabária „	71 10 37	3·904654	8029	1·521	„
	Jamálpur Jail s.	49 58 59	3·766317	5839	1·106	„
95	Guabária „	56 6 3	3·801260	6328	1·198	„
	Pakkhimári Char „	73 54 58	3·864830	7325	1·387	„
	Guabária s.	46 26 10	3·795652	6247	1·183	„
96	Pakkhimári Char „	90 55 57	3·935492	8620	1·633	„
	Jamálpur, Magistrate's House „	42 37 53	3·766317	5839	1·106	„
	Pakkhimári Char s.	58 28 32	3·935937	8629	1·634	„
97	Jamálpur, Magistrate's House „	83 25 7	4·002413	10056	1·904	„
	Sáthpikia „	38 6 21	3·795652	6247	1·183	„
	Jamálpur, Magistrate's House s.	22 2 55	3·695773	4963	0·940	„
98	Sáthpikia „	117 12 47	4·070341	11758	2·227	„
	Kuturia „	40 44 18	3·935937	8629	1·634	„
	Sáthpikia s.	54 33 25	3·795562	6245	1·183	„
99	Kuturia „	85 5 37	3·882974	7638	1·447	„
	Buláí Char „	40 20 58	3·695773	4963	0·940	„
	Pakkhimári Char s.	38 44 39	3·832313	6797	1·287	„
100	Sáthpikia „	73 27 2	4·017473	10411	1·972	„
	Jamálpur, Dayamay's Shrine		4·002413	10056	1·904	
	Sáthpikia s.	136 25 31	4·127343	13407 4	2·539	„
101	Buláí Char „	20 27 12	3·832312	6797	1·287	„
	Jamálpur, Dayamay's Shrine		3·882974	7638	1·447	
	Kuturia s.	49 49 47	3·761775	5778	1·094	„
102	Buláí Char „	74 29 7	3·862487	7286	1·380	„
	Char Jahathpur No. 1. „	55 41 6	3·795562	6245	1·183	„
	Kuturia s.	37 39 36	3·688687	4883	0·925	„
103	Char Jahathpur No. 1. „	76 36 25	3·890689	7775	1·472	„
	Haripur „	65 43 59	3·862487	7286	1·380	„
	Char Jahathpur No. 1. s.	58 17 15	3·704555	5065	0·959	„
104	Haripur „	66 36 37	3·737541	5464	1·035	„
	Char Jahathpur No. 2. „	55 6 8	3·688687	4883	0·925	„
	Haripur s.	36 31 41	3·579660	3799	0·719	„
105	Char Jahathpur No. 2. „	90 57 15	3·804925	6382	1·209	„
	Jayrámpur „	52 31 4	3·704555	5065	0·959	„
	Char Jahathpur No. 2. s.	53 16 8	3·726983	5333	1·010	12
106	Jayrámpur „	91 55 7	3·822862	6651	1·260	„
	Rai Char „	34 48 45	3·579660	3799	0·719	„
	Haripur s.	112 41 49	3·829949	6760	1·280	„
107	Char Jahathpur No. 1. „	25 30 49	3·499155	3156	0·598	„
	Sharífpur Masjid		3·688687	4883 1	0·925	
	Char Jahathpur No. 1. s.	43 23 30	3·925699	8428	1·596	„
108	Rai Char „	33 26 22	3·829949	6760	1·280	„
	Sharífpur Masjid		4·077180 *	11945	2·262	
	Jayrámpur s.	29 35 23	3·470386	2954	0·559	„
109	Rai Char „	87 20 40	3·776381	5976	1·132	„
	Ahmidpur „	63 3 57	3·726983	5333	1·010	„
	Rai Char s.	74 40 15	3·916654	8254	1·563	„
110	Ahmidpur „	85 8 19	3·930822	8527	1·615	„
	Bhawániganj „	20 11 26	3·470386	2954	0·559	„
	Rai Char s	24 11 14	3·583782	3835	0·726	„
111	Bhawániganj „	41 27 32	3·792208	6197	1·174	„
	Lakhi Char No. 1. „	114 21 14	3·930822	8527	1·615	„
	Bhawániganj s.	68 34 53	3·916904	8259	1·564	„
112	Lakhi Char No. 1. „	85 48 15	3·946818	8847	1·676	„
	Ulghi Char „	25 36 52	3·583782	3835	0·726	„
	Lakhi Char No. 1. s.	18 7 13	3·556062	3598	0·681	„
113	Ulghi Char „	27 25 50	3·726677	5329	1·009	„
	Lakhi Char No. 2. „	134 26 57	3·916904	8259	1·564	„
	Ulghi Char s.	104 20 31	3·765671	5830	1·104	„
114	Lakhi Char No. 2. „	38 56 14	3·577705	3782	0·716	„
	Rai Gujairia „	36 43 15	3·556062	3598	0·681	„
	Ulghi Char s.	69 46 34	3·715664	5196	0·984	„
115	Rai Gujairia „	67 8 50	3·707798	5103	0·966	„
	Khás Gujairia „	43 4 36	3·577705	3782	0·716	„
	Rai Gujairia s.	41 33 9	3·658991	4560	0·864	„
116	Khás Gujairia „	89 21 19	3·837250	6875	1·302	„
	Bháti Gujairia „	49 5 32	3·715664	5196	0·984	„
	Khás Gujairia s.	77 22 56	3·825757	6695	1·268	„
117	Bháti Gujairia „	60 57 34	3·778023	5998	1·136	„
	Kosundra „	41 39 30	3·658991	4560	0·864	„
	Bháti Gujairia s.	75 28 36	3·889973	7762	1·470	„
118	Kosundra „	47 54 32	3·774528	5950	1·127	„
	Ghára Mára „	56 36 52	3·825757	6695	1·268	„

* Base deduced by two sides and included angle.

No. of Triangle	Station		Corrected Plane Angle	Distance			Theodolite used
				Log. feet	Feet	Miles	
			° ′ ″				Inch
	Kosundra	s.	65 27 14	3·953772	8990	1·703	12
119	Ghára Mára	,,	62 47 34	3·943985	8790	1·665	,,
	Narindi	,,	51 45 12	3·889973	7762	1·470	,,
	Ghára Mára	s.	67 11 7	3·970380	9341	1·769	,,
120	Narindi	,,	50 17 38	3·891874	7796	1·477	,,
	Tulsi Char No. 1	,,	62 31 15	3·953772	8990	1·703	,,
	Narindi	s.	57 54 36	3·929684	8505	1·611	,,
121	Tulsi Char No. 1	,,	53 35 10	3·907351	8079	1·530	,,
	Mírapur	,,	68 30 14	3·970380	9341	1·769	,,
	Tulsi Char No. 1	s.	45 41 34	3·795042	6238	1·181	,,
122	Mírapur	,,	56 57 53	3·863786	7308	1·384	,,
	Tulsi Char No. 2	,,	77 20 33	3·929684	8505	1·611	,,
	Mírapur	s.	58 46 21	3·780259	6029	1·142	,,
123	Tulsi Char No. 2	,,	59 0 36	3·781346	6044	1·145	,,
	Etail	,,	62 13 3	3·795042	6238	1·181	,,
	Tulsi Char No. 2	s.	80 8 55	3·891335	7786	1·475	,,
124	Etail	,,	50 7 48	3·782865	6065	1·149	,,
	Madhua Char	,,	49 43 17	3·780259	6029	1·142	,,
	Etail	s.	47 48 6	3·799198	6298	1·193	,,
125	Madhua Char	,,	65 51 48	3·889750	7758	1·469	,,
	Peárpur Factory	,,	66 20 6	3·891335	7786	1·475	,,
	Madhua Char	s.	57 1 32	3·868474	7387	1 399	,,
126	Peárpur Factory	,,	77 18 47	3·934022	8591	1·627	,,
	Náráyan Khola	,,	45 39 41	3·799198	6298	1·193	,,
	Peárpur Factory	s.	46 9 21	3·748310	5602	1·061	,,
127	Náráyan Khola	,,	61 49 55	3·835493	6847	1·297	,,
	Bhári Ghágri	,,	72 0 44	3·868474	7387	1·399	,,
	Náráyan Khola	s.	50 20 0	3·785675	6105	1·156	,,
128	Bhári Ghágri	,,	84 43 52	3·897475	7897	1·496	,,
	Rehái Astodhar	,,	44 56 8	3·748310	5602	1·061	,,
	Bhári Ghágri	s.	63 37 10	3·854952	7161	1·356	,,
129	Rehái Astodhar	,,	66 34 57	3·865380	7335	1·389	,,
	Sánar Char	,,	49 47 53	3·785675	6105	1·156	,,
	Rehái Astodhar	s.	67 31 55	3·937724	8664	1·641	,,
130	Sánar Char	,,	62 40 24	3·920618	8329	1·578	,,
	Dabar Char	,,	49 47 41	3·854952	7161	1·356	,,
	Sánar Char	s.	55 3 40	3·906222	8058	1·526	,,
131	Dabar Char	,,	63 7 23	3·942889	8768	1·661	,,
	Char Tárapur	,,	61 48 57	3·937724	8664	1·641	,,
	Dabar Char	s.	45 3 8	3·927043	8454	1·601	,,
132	Char Tárapur	,,	92 31 23	4·076741	11933	2·260	,,
	Mirdhapára	,,	42 25 29	3·906222	8058	1·526	,,
	Char Tárapur	s.	66 49 41	4·081100	12053	2·283	,,
133	Mirdhapára	,,	73 1 21	4·098278	12539	2·375	,,
	Char Dari Kustia No. 1	,,	40 8 58	3·927043	8454	1·601	,,
	Mirdhapára	s.	38 14 45	3·872817	7461	1·413	,,
134	Char Dari Kustia No. 1	,,	51 38 52	3·975533	9452	1·790	,,
	Jáfar Mandalpára	,,	90 6 23	4·081100	12053	2·283	,,
	Char Dari Kustia No. 1	s.	62 48 1	3·893158	7819	1·481	,,
135	Jáfar Mandalpára	,,	59 7 37	3·877695	7546	1·429	,,
	Char Dari Kustia No. 2	,,	58 4 22	3·872817	7461	1·413	,,
	Jáfar Mandalpára	s.	42 45 1	3·786757	6120	1·159	,,
136	Char Dari Kustia No. 2	,,	77 6 31	3·943925	8789	1·665	,,
	Sámrámpur	,,	60 8 28	3·893158	7819	1·481	,,
	Char Dari Kustia No. 2	s.	53 3 19	3·812972	6501	1·231	,,
137	Sámrámpur	,,	78 8 46	3·900947	7961	1·508	,,
	Char Dari Kustia No. 3	,,	48 47 55	3·786757	6120	1·159	,,
	Sámrámpur	s.	44 32 33	3·757523	5722	1·084	,,
138	Char Dari Kustia No. 3	,,	82 36 59	3·907918	8089	1·532	,,
	Char Hasadia No. 1	,,	52 50 28	3·812972	6501	1·231	,,
	Char Dari Kustia No. 3	s.	52 32 34	3·779930	6025	1·141	,,
139	Char Hasadia No. 1	,,	78 31 43	3·871451	7438	1·409	,,
	Baiganbári Factory	,,	48 55 43	3·757523	5722	1·084	,,
	Char Hasadia No. 1	s.	72 29 14	3·820296	6611	1·252	,,
140	Baiganbári Factory	,,	47 10 10	3·706229	5084	0·963	,,
	Char Hasadia No. 2	,,	60 20 36	3·779930	6025	1·141	,,
	Baiganbári Factory	s.	41 5 58	3·856845	7192	1·362	,,
141	Char Hasadia No. 2	,,	101 43 17	4·029885	10712	2·029	,,
	Jailkhána Char No. 1	,,	37 10 45	3·820296	6611	1·252	,,
	Char Hasadia No. 2	s.	32 11 6	3·606931	4045	0·766	,,
142	Jailkhána Char No. 1	,,	76 32 55	3·868405	7386	1·399	,,
	Sirta	,,	71 15 59	3·856845	7192	1·362	,,
	Jailkhána Char No. 1	s.	94 23 9	3·858255	7215	1·367	,,
143	Sirta	,,	51 37 42	3·753845	5673	1·075	,,
	Jailkhána Char No. 2	,,	33 59 9	3·606931	4045	0·766	,,
	Sirta	s.	26 0 48	3·500414	3165	0·599	,,
144	Jailkhána Char No. 2	,,	62 41 47	3·807066	6413	1·215	,,
	Nukhi Ulghi Char	,,	91 17 25	3·858255	7215	1·367	,,

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″				Inch
	Jailkhána Char No. 2 s.	54 54 31	3·860728	7257	1·374	12
145	Nukhi Ulghi Char „	104 10 50	3·934410	8598	1·628	„
	Bar Char „	20 54 39	3·500414	3165	0·599	„
	Jailkhána Char No. 2 s.	33 2 21	3·872914	7463	1·413	„
146	Bar Char „	108 2 50	4·114438	13015	2·465	„
	Mymensingh „	38 54 49	3·934410	8598	1·628	„
	Bar Char s.	36 40 3	3·649065	4457	0·844	„
147	Mymensingh „	52 26 15	3·772070	5917	1·121	„
	Digri Char (Lakhipur) „	90 53 42	3·872914	7463	1·413	„
	Nukhi Ulghi Char s.	34 52 51	3·768233	5865	1·111	„
148	Bar Char „	100 4 42	4·004180	10097	1·912	„
	Mymensingh, Debtors' Jail		3·860728	7257	1·374	
				1		
	Bar Char s.	65 32 50	3·804651	6378	1·208	„
149	Digri Char (Lakhipur) „	56 50 0	3·768233	5865	1·111	„
	Mymensingh, Debtors' Jail		3·772070	5917	1·121	
	Bar Char s.	22 27 17	3·783734	6078	1·151	„
150	Digri Char (Lakhipur) „	135 43 0	4·045708	11110	2·104	„
	Mymensingh Kachahri		3·772070	5917	1·121	

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″		1		Inch
	Mymensingh s.	88 2 37	3·783735	6078	1·151	12
151	Digri Char (Lakhipur) „	44 49 18	3·632117	4287	0·812	„
	Mymensingh Kachahri		3·649065	4457	0·844	
	Mymensingh s.	103 40 58	3·946269	8836	1·674	„
152	Digri Char (Lakhipur) „	46 58 10	3·822684	6648	1·259	„
	Mymensingh Temple No. 1		3·649065	4457	0·844	
				1		
	Bar Char s.	25 25 39	3·946269	8836	1·674	„
153	Digri Char (Lakhipur) „	137 51 52	4·140088	13806	2·615	„
	Mymensingh Temple No. 1		3·772070	5917	1·121	
	Nukhi Ulghi Char s.	22 11 12	4·152355	14202	2·690	„
154	Bar Char „	146 41 19	4·315016	20655	3·912	„
	Mymensingh Temple No. 2		3·860728	7257	1·374	
				8		
	Bar Char s.	18 56 13	3·945343	8817	1·670	„
155	Digri Char (Lakhipur) „	148 29 8	4·152355	14202	2·690	„
	Mymensingh Temple No. 2		3·772070	5917	1·121	

May 1880.

J. B. N. HENNESSEY,

In charge of Computing Office.

BRAHMAPUTRA 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
AHMIDPUR S.			
Jairámpur	S.	133 26 0	109
Rai Char	„	196 29 57	109
Bhawániganj	„	281 38 16	110
ALANGJANI, XXII*			
Gobindpur, XLVII		3 28 26·88	57
Sámding, XXV*		293 0 56·72	55
Singmári, XLV		331 57 2·75	55
ALOAKANDI, XXX			
Gaborgrám, XXXII		205 17 30·69	33
Bághmára, XXVIII		270 27 16·76	32
Párkoksa (new), XXVII		330 42 35·48	32
BAGHMARA, XXVIII			
Párkoksa (new), XXVII		31 48 53·01	31
Aloákándi, XXX		90 31 39·96	32
Gaborgrám, XXXII		145 2 8·98	33
Poerbári, XXXI		203 53 13·02	34
BAGHMARA, XXVIII		° ′ ″	
Rashídpur, XXIX		265 31 22·02	35
Poelsa, XXV		324 2 9·18	31
BAGHPUR, II			
Pákdiha, XXI†		25 40 4·74	5
Harina, I		86 42 41·22	5
Gázitak, IV		151 29 36·74	6
BAIGANBARI FACTORY S.			
Char Dari Kustia No. 3	S.	134 0 2	139
Char Hasadia No. 1	„	182 55 45	139
Char Hasadia No. 2	„	230 5 55	140
Jailkhána Char No. 1	„	271 11 53	141
BANGAON, XV			
Bháranga, XIII		38 1 28·90	15
Dúliabári, XVIII		148 42 51·02	20
Belta, XVI		202 57 30·61	19
Bani, XIV		268 44 21·74	16
BANGAON, XV		° ′ ″	
Nagarpur House No. 2		292 35 5	64
Nagarpur House No. 1		294 3 33	62
Tepri, XI		336 34 34·80	15
BANI, XIV			
Tepri, XI		33 2 30·71	16
Nagarpur House No. 1		67 18 32	62
Nagarpur House No. 2		71 11 30	63
Bangaon, XV		88 47 58·25	16
Belta, XVI		150 46 20·49	19
Átia Masjid		157 36 12	65
Basail, XVII		210 1 57·03	23
Baliati House		320 16 53	61
Chámtia, XII		326 54 14·49	18
BANIKATRA, XXII			
Ichhápur, XIX		23 39 6·04	29
Basalia, XXI		97 29 1·34	29
Poelsa, XXV		157 30 3·22	30

* Of the Assam Longitudinal Series. † Of the East Calcutta Longitudinal Series.

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
Bar Char s.			
Mymensingh, Debtors' Jail		11 45 57	148
Jailkhána Char No. 2	s.	90 56 0	145
Nukhi Ulghi Char	,,	111 50 39	145
Digri Char (Lakhipur)	,,	306 13 7	147
Mymensingh Temple No. 2		325 9 20	154
Mymensingh Kachahri		328 40 24	150
Mymensingh Temple No. 1		331 38 46	153
Mymensingh	s.	342 53 10	146
Basail, XVII			
Bani, XIV		30 4 9·08	23
Belta, XVI		87 53 21·92	23
Ichhápur, XIX		142 34 43·44	24
Basalia, XXI			
Mokimpur, XX		38 18 4·11	25
Serajgunj Jute Mills No. 1		73 32 21	66
Serajgunj Jute Mills No. 2		74 7 15	67
Soilábári (new), XXIV		93 25 20·66	26
Párkoksa, (new), XXVII		140 53 19·92	27
Poelsa, XXV		208 23 12·23	28
Banikátra, XXII		277 25 21·30	29
Ichhápur, XIX		327 31 40·89	25
Belta, XVI			
Bangaon, XV		22 59 5·27	19
Dúliabári, XVIII		89 33 30·15	20
Mokimpur, XX		135 32 37·59	21
Ichhápur, XIX		203 37 55·89	22
Basail, XVII		267 49 6·75	23
Átia Masjid		315 43 55	65
Bani, XIV		330 44 18·05	19
Bharanga, XIII			
Bangaon, XV		217 58 41·27	15
Tepri, XI		265 54 11·96	14
Paipára, X		316 29 53·93	14
Bhari Ghagri s.			
Peárpur Factory	s.	78 5 46	127
Náráyan Khola	,,	150 6 30	127
Rehái Astodhar	,,	234 50 22	128
Sánar Char	,,	298 27 32	129
Bhati Gujairia s.			
Khás Gujairia	s.	51 29 37	116
Rai Gujairia	,,	100 35 9	116
Ghára Mára	,,	275 3 27	118
Kosundra	,,	350 32 3	117

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
Bhawaniganj s.			
Ahmidpur	s.	101 38 53	110
Rai Char	,,	121 50 19	110
Lakhi Char No. 1	,,	163 17 51	111
Ulghi Char	,,	231 52 44	112
Boladanga, XXXV			
Bonárpára, XXXVIII		154 15 21·04	45
Halkáchar, XXXVII		214 41 25·30	39
Sádipati, XXXIII		271 7 4·12	38
Gaborgrám, XXXII		323 48 21·80	38
Bonarpara, XXXVIII			
Kánchipára, XL		206 50 37·27	46
Halkáchar, XXXVII		273 19 10·03	45
Boládánga, XXXV		334 13 20·81	45
Borchi h.s.			
Peshkárbhita, XLIII		25 37 31	81
Chalakandi	s.	132 42 49	85
Shukchar	,,	133 39 8	84
Singmári Hát	,,	134 52 43	83
Singmári, XLV		142 25 45	81
Shekarpára	h.s.	223 34 21	87
Rangira, XLVI		301 59 10	82
Borel, XLI			
Kánchipára, XL		29 11 11·48	47
Káshdaha, XLII		109 20 44·57	50
Narsinghbanj, XLIV		178 39 44·07	49
Peshkárbhita, XLIII		248 52 14·77	48
Gáropára, XXXIX		302 30 52·84	47
Brahmangaon, VII			
Gázitak, IV		36 0 8·91	11
Gáskanchan, VI		95 2 10·57	11
Rámdiha, IX		150 23 22·42	12
Bulai Char s.			
Kuturia	s.	63 2 15	99
Jamálpur, Dayamayi's Shrine		82 56 1	101
Sáthpikia	s.	103 23 13	99
Char Jahathpur No. 1	,,	348 33 8	102
Chalakandi s.			
Malakháwa Temple No. 1		240 51 31	86
Singmári, XLV		290 31 24	85
Borchi	h.s.	312 40 31	85

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
Chamtia, XII			
Rámdiha, IX		30 40 48·76	17
Tepri, XI		91 35 33·80	17
Dúrgrám House		116 21 19	59
Bani, XIV		146 56 30·31	18
Baliati House		165 17 17	60
Chandra s.			
Poerbári, XXXI		29 30 33	93
Guabária	s.	229 55 0	94
Jamálpur Jail	,,	289 38 18	93
Chapri h.s.			
Gáropára, XXXIX		42 16 5	68
Rámbolatári	h.s.	108 13 17	70
Peshkárbhita, XLIII		119 12 46	68
Rangira, XLVI		229 13 59	69
Char Dari Kustia No. 1 s.			
Char Tárapur	s.	147 11 9	133
Mirdhapára	,,	187 20 7	133
Jáfar Mandalpára	,,	238 58 59	134
Char Dari Kustia No. 2	,,	301 47 0	135
Char Dari Kustia No. 2 s.			
Char Dari Kustia No. 1	s.	121 47 29	135
Jáfar Mandalpára	,,	179 51 51	135
Sámrámpur	,,	256 58 22	136
Char Dari Kustia No. 3	,,	310 1 41	137
Char Dari Kustia No. 3 s.			
Char Dari Kustia No. 2	s.	130 2 9	137
Sámrámpur	,,	178 50 4	137
Char Hasadia No. 1	,,	261 27 3	138
Baiganbári Factory	,,	313 59 37	139
Char Hasadia No. 1 s.			
Baiganbári Factory	s.	2 55 46	139
Char Dari Kustia No. 3	,,	81 27 29	138
Sámrámpur	,,	134 17 57	138
Char Hasadia No. 2	,,	290 26 32	140
Char Hasadia No. 2 s.			
Baiganbári Factory	s.	50 6 18	140
Char Hasadia No. 1	,,	110 26 54	140

Name of station with azimuths of surrounding points			No. of triangle giving distance
Char Hasadia No. 2	s.	° ′ ″	
Sirta	s.	276 11 55	142
Jailkhána Char No. 1	„	308 23 1	141
Char Jahathpur No. 1	s.		
Sharífpur Masjid		10 44 53	107
Haripur	s.	36 15 42	103
Kuturia	„	112 52 7	102
Bulái Char	„	168 33 13	102
Rai Char	„	327 21 23	108
Char Jahathpur No. 2	„	337 58 27	104
Char Jahathpur No. 2	s.		
Jayrámpur	s.	11 55 14	105
Haripur	„	102 52 29	104
Char Jahathpur No. 1	„	157 58 37	104
Rai Char	„	318 39 6	106
Char Sherpur, XXXIV			
Jamálpur Jail	s.	17 47 15	92
Poerbári, XXXI		29 43 40·94	43
Sádipati, XXXIII		86 3 27·57	43
Jánkípur, XXXVI		147 39 33·67	44
Char Tarapur	s.		
Sánar Char	s.	106 0 37	131
Dabar Char	„	167 49 34	131
Mirdhapára	„	260 20 57	132
Char Dari Kustia No. 1	„	327 10 38	133
Dabar Char	s.		
Sánar Char	s.	50 56 49	130
Rehái Astodhar	„	100 44 30	130
Mirdhapára	„	302 46 18	132
Char Tárapur	„	347 49 26	131
Digri Char (Lakhipur)	s.		
Mymensingh	s.	35 19 47	147
Mymensingh Debtor's Jail		69 23 29	149
Bar Char	„	126 13 29	147
Mymensingh Temple No. 2		337 44 21	155
Mymensingh Temple No. 1		348 21 37	152
Mymensingh Kachahri		350 30 29	150
Duliabari, XVIII			
Mokimpur, XX		184 42 43·32	21
Belta, XVI		269 29 40·22	20
Bangaon, XV		328 40 36·37	20

Name of station with azimuths of surrounding points			No. of triangle giving distance
Etail	s.	° ′ ″	
Mírapur	s.	88 7 32	123
Tulsi Char No. 2	„	150 20 35	123
Madhua Char	„	200 28 23	124
Peárpur Factory	„	248 16 29	125
Gaborgram, XXXII			
Aloákándi, XXX		25 19 16·45	33
Boládánga, XXXV		143 51 4·49	38
Sádipati, XXXIII		208 48 13·80	37
Poerbári, XXXI		268 40 5·45	34
Bághmára, XXVIII		324 59 30·86	33
Garopara, XXXIX			
Halkáchar, XXXVII		36 55 34·14	41
Kánchipára, XL		81 48 50·18	42
Borel, XLI		122 35 23·06	47
Peshkárbhita, XLIII		187 17 21·80	48
Rámbolatári	h.s.	190 36 35	70
Chápri	„	222 12 57	68
Tura Chalet		245 36 25	77
Jánkípur, XXXVI		353 17 27·17	41
Gaskanchan, VI			
Furreedpore Kachahri		21 20 41	58
Sonpácha, V		34 3 14·64	7
Khánkhánápur, VIII		88 36 0·14	8
Paipára, X		158 18 37·90	9
Rámdiha, IX		211 13 30·25	10
Bráhmangaon, VII		274 57 59·71	11
Gázitak, IV		336 11 28·85	7
Gazitak, IV			
Harina, I		32 16 24·49	4
Sonpácha, V		93 17 43·11	4
Furreedpore Kachahri		122 29 7	58
Gáskanchan, VI		156 13 9·39	7
Bráhmangaon, VII		215 57 39·30	11
Bághpur, II		331 27 52·01	6
Ghara Mara	s.		
Kosundra	s.	38 27 2	118
Bháti Gujairia	„	95 3 54	118
Tulsi Char No. 1	„	268 28 21	120
Narindi	„	335 39 28	119
Gobindpur, XLVII			
Narsinghbanj, XLIV		19 3 23·95	56
Alangjáni, XXII*		183 28 6·51	57
Singmári, XLV		293 21 40·97	56

Name of station with azimuths of surrounding points			No. of triangle giving distance
Guabaria	s.	° ′ ″	
Chandra	s.	49 55 22	94
Pakkhimári Char	„	282 38 42	95
Jamálpur, Magistrate's House	„	329 4 52	96
Jamálpur Jail	„	338 44 45	94
Halkachar, XXXVII			
Boládánga, XXXV		34 44 6·42	39
Bonárpára, XXXVIII		93 23 52·12	45
Kánchipára, XL		145 54 49·97	42
Gáropára, XXXIX		216 51 45·15	41
Jánkípur, XXXVI		271 46 14·29	40
Sádipati, XXXIII		332 48 45·45	39
Harina, I			
Maheshpur, XX†		30 53 3·46	1
Saidpur, III		92 47 21·33	2
Sonpácha, V		152 44 10·32	3
Gázitak, IV		212 14 14·29	4
Bághpur, II		266 38 46·90	5
Pákdiha, XXI†		326 53 24·21	1
Haripur	s.		
Kuturia	s.	150 31 30	103
Char Jahathpur No. 1	„	216 15 29	103
Char Jahathpur No. 2	„	282 52 6	104
Jayrámpur	„	319 23 47	105
Sharífpur Masjid		328 57 18	107
Ichhapur, XIX			
Belta, XVI		23 39 31·61	22
Mokimpur, XX		89 37 33·97	22
Basalia, XXI		147 33 58·37	25
Banikátra, XXII		203 37 44·01	29
Basail, XVII		322 32 3·34	24
Jafar Mandalpara	s.		
Char Dari Kustia No. 1	s.	58 59 28	134
Mirdhapára	„	149 5 51	134
Sámrámpur	„	317 6 50	136
Char Dari Kustia No. 2	„	359 51 51	135
Jailkhana Char No. 1	s.		
Baiganbári Factory	s.	91 12 42	141
Char Hasadia No. 2	„	128 23 27	141
Sirta	„	204 56 22	142
Jailkhána Char No. 2	„	299 19 31	143
Jailkhana Char No. 2	s.		
Jailkhána Char No. 1	s.	119 19 54	143

* Of the Assam Longitudinal Series. † Of the East Calcutta Longitudinal Series.

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
Jailkhana Char No. 2 s.			
Sirta	s.	153 19 3	143
Nukhi Ulghi Char	„	216 0 50	144
Bar Char	„	270 55 21	145
Mymensingh	„	303 57 42	146
Jamalpur Jail s.			
Poerbári, XXXI		50 29 37	92
Chandra	s.	109 38 53	93
Guabária	„	158 44 58	94
Char Sherpur, XXXIV		197 46 22	92
Pakkhimári Char	„	208 43 57	95
Jamalpur, Magistrate's House s.			
Guabária	s.	149 5 12	96
Pakkhimári Char	„	191 43 5	96
Sáthpikia	„	275 8 12	97
Kuturia	„	297 11 7	98
Jankipur, XXXVI			
Sádipati, XXXIII		31 42 21·48	40
Halkáchar, XXXVII		91 50 39·20	40
Gáropára, XXXIX		173 18 4·01	41
Char Sherpur, XXXIV		327 37 20·10	44
Jayrampur s.			
Haripur	s.	139 24 6	105
Char Jahathpur No. 2	„	191 55 10	105
Rai Char	„	283 50 17	106
Ahmidpur	„	313 25 40	109
Kakripara Hat s.			
Peshkárbhita, XLIII		224 59 47	72
Rámbolatári	h.s.	290 2 48	72
Kakripara h.s.			
Rahumári Indigo Vat		148 54 37	76
Mankachar Hát	s.	154 12 12	74
Peshkárbhita, XLIII		205 32 36	73
Rámbolatári	h.s.	309 23 26	73
Kanchipara, XL			
Bonárpára, XXXVIII		26 32 32·52	46
Káshdaha, XLII		160 38 27·63	50
Borel, XLI		209 9 3·04	47
Gáropára, XXXIX		261 42 12·43	42
Halkáchar, XXXVII		325 52 2·39	42
Kashdaha, XLII			
Narsinghbanj, XLIV		227 48 13·37	51
Borel, XLI		289 16 44·97	50
Kánchipára, XL		340 36 37·19	50

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
Khak h.s.			
Singmári, XLV		62 38 58	89
Jor Mandir Tree		119 38 26	90
Shekarpára	h.s.	303 45 39	89
Khankhanapur, VIII			
Paipára, X		217 19 53·89	9
Gáskanchan, VI		268 31 54·15	8
Sonpácha, V		334 8 9·09	8
Khas Gujairia s.			
Ulghi Char	s.	99 3 26	115
Rai Gujairia	„	142 8 2	115
Bháti Gujairia	„	231 29 21	116
Kosundra	„	308 52 17	117
Kosundra s.			
Khás Gujairia	s.	128 52 38	117
Bháti Gujairia	„	170 32 8	117
Ghára Mára	„	218 26 40	118
Narindi	„	283 53 54	119
Kuturia s.			
Jamálpur, Magistrate's House	s.	117 11 55	98
Sáthpikia	„	157 56 13	98
Bulái Char	„	243 1 50	99
Char Jahathpur No. 1	„	292 51 37	102
Haripur	„	330 31 13	103
Lakhi Char No. 1 s.			
Rai Char	s.	97 39 0	111
Lakhi Char No. 2	„	239 22 18	113
Ulghi Char	„	257 29 31	112
Bhawániganj	„	343 17 46	111
Lakhi Char No. 2 s.			
Lakhi Char No. 1	s.	59 22 39	113
Rai Gujairia	„	245 59 28	114
Ulghi Char	„	284 55 42	113
Madhua Char s.			
Etail	s.	20 28 35	124
Tulsi Char No. 2	„	70 11 52	124
Náráyan Khola	„	257 35 15	126
Peárpur Factory	„	314 36 47	125
Maheshpur XX*			
Saidpur, III		143 59 16·54	2
Harina, I		210 51 11·25	1
Pákdiha, XXI*		273 1 23·71	1

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
Mankachar Hat s.			
Peshkárbhita, XLIII		309 0 4	74
Kakripára	h.s.	334 11 48	74
Mirapur s.			
Narindi	s.	83 52 36	121
Tulsi Char No. 1	„	152 22 50	121
Tulsi Char No. 2	„	209 20 43	122
Etail	„	268 7 4	123
Mirdhapara s.			
Char Dari Kustia No. 1	s.	7 20 14	133
Char Tárapur	„	80 21 35	132
Dabar Char	„	122 47 4	132
Jáfar Mandalpára	„	329 5 29	134
Mokimpur, XX			
Dúliabári, XVIII		4 43 1·32	21
Soilábári (new), XXIV		160 12 24·78	26
Serajgunj Jute Mills No. 1		165 53 39	66
Serajgunj Jute Mills No. 2		166 10 57	67
Basalia, XXI		218 15 11·74	25
Ichhápur, XIX		269 32 24·91	22
Belta, XVI		315 29 5·06	21
Mymensingh s.			
Jailkhána Char No. 2	s.	123 58 31	146
Bar Char	„	162 53 20	146
Digri Char (Lakhipur)	„	215 19 35	147
Mymensingh Kachahri		303 22 12	151
Mymensingh Temple No. 1		319 0 33	152
Narayan Khola s.			
Peárpur Factory	s.	31 56 12	126
Madhua Char	„	77 35 53	126
Rehái Astodhar	„	279 46 17	128
Bhari Ghágri	„	330 6 17	127
Narindi s.			
Kosundra	s.	103 54 33	119
Ghára Mára	„	155 39 45	119
Tulsi Char No. 1	„	205 57 23	120
Mírapur	„	263 51 59	121
Narsinghbanj, XLIV			
Káshdaha, XLII		47 52 6·82	51
Gobindpur, XLVII		199 1 41·80	56
Singmári, XLV		242 42 33·74	52
Peshkárbhita, XLIII		299 6 20·46	49
Borel, XLI		358 39 37·17	49

* Of the East Calcutta Longitudinal Series.

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
Nukhi Ulghi Char s.			
Jailkhána Char No. 2	s.	36 0 58	144
Sirta	„	127 18 23	144
Bar Char	„	291 50 8	145
Mymensingh Temple No. 2		314 1 20	154
Mymensingh Debtors' Jail		326 42 59	148
Paipara, X			
Khánkhánápur, VIII		37 22 37·62	9
Bháranga, XIII		136 32 58·60	14
Tepri, XI		197 26 16·55	13
Rámdiha, IX		271 20 42·57	10
Gáskanchan, VI		338 17 14·99	9
Pakdiha, XXI*			
Maheshpur, XX*		93 5 26·08	1
Harina, I		146 55 34·98	1
Bághpur, II		205 38 21·84	5
Pakkhimari Char s.			
Jamálpur, Magistrate's House	s.	11 43 11	96
Jamálpur Jail	„	28 44 10	95
Guabária	„	102 39 8	95
Sáthpikia	„	313 14 39	97
Jamálpur, Dayamayi's Shrine		351 59 18	100
Parkoksa (new), XXVII			
Soilábári (new), XXIV		20 51 35·26	27
Aloákándi, XXX		150 44 40·81	32
Bághmára, XXVIII		211 46 35·80	31
Poelsa, XXV		270 23 7·86	28
Basalia, XXI		320 50 20·33	27
Pearpur Factory s.			
Etail	s.	68 17 1	125
Madhua Char	„	134 37 7	125
Náráyan Khola	„	211 55 54	126
Bhári Ghágri	„	258 5 15	127
Peshkarbhita, XLIII			
Gáropára, XXXIX		7 17 59·10	48
Kakripára	h.s.	25 32 46	73
Kakripára Hát	s.	45 0 12	72
Borel, XLI		68 57 23·22	48
Narsinghbanj, XLIV		119 11 36·80	49
Mankachar Hát	„	129 0 38	74
Rahumári Indigo Vat		140 2 13	75
Singmári, XLV		186 27 56·74	52
Borchi	h.s.	205 35 28	81
Rangira, XLVI		254 32 21·62	53
Tura Chalet		272 18 20	77
Chápri	„	299 10 15	68
Rámbolatári	„	344 59 26	71

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
Poelsa, XXV			
Basalia, XXI		28 25 10·37	28
Párkoksa (new), XXVII		90 28 6·36	28
Bághmára, XXVIII		144 4 51·24	31
Rashídpur, XXIX		202 32 23·79	35
Banikátra, XXII		337 28 20·73	30
Poerbari, XXXI			
Bághmára, XXVIII		23 54 55·76	34
Gaborgrám, XXXII		88 44 26·99	34
Sádipati, XXXIII		145 54 6·37	37
Chandra	s.	209 29 50	93
Char Sherpur, XXXIV		209 41 29·69	43
Jamálpur Jail	„	230 28 19	92
Rashídpur, XXIX		322 29 29·74	36
Rai Char s.			
Ahmidpur	s.	16 30 1	109
Jayrámpur	„	103 50 41	106
Sharífpur Masjid		113 55 31	108
Char Jahathpur No. 2	„	138 39 26	106
Char Jahathpur No. 1	„	147 21 53	108
Lakhi Char No. 1	„	277 38 32	111
Bhawániganj	„	301 49 46	110
Rai Gujairia s.			
Ulghi Char	s.	29 16 37	114
Lakhi Char No. 2	„	65 59 52	114
Bháti Gujairia	„	280 34 38	116
Khás Gujairia	„	322 7 47	115
Rambolatari h.s.			
Gáropára, XXXIX		10 37 22	70
Kakripára Hát	s.	110 3 23	72
Kakripára	h.s.	129 23 46	73
Rahumári Indigo Vat		145 50 32	75
Peshkárbhita, XLIII		164 59 36	71
Chápri	„	288 10 56	70
Ramdiha, IX			
Gáskanchan, VI		31 15 33·63	10
Paipára, X		91 24 9·40	10
Tepri, XI		147 9 54·57	13
Chámtia, XII		210 38 44·02	17
Bráhmangaon, VII		330 21 14·26	12
Rangira, XLVI			
Chápri	h.s.	49 17 35	69
Peshkárbhita, XLIII		74 38 28·86	53
Borchi	„	122 3 14	82
Singmári, XLV		128 27 31·92	53
Sámding, XXV†		165 49 57·89	54

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
Rangira, XLVI			
Arbela Hill Staff		274 27 20	80
Tura Chalet		302 58 27	78
Durama Hill Staff		303 49 39	79
Rashidpur, XXIX			
Poelsa, XXV		22 34 5·15	35
Bághmára, XXVIII		85 35 46·17	35
Poerbári, XXXI		142 32 11·81	36
Rehai Astodhar s.			
Bhári Ghágri	s.	54 50 45	128
Náráyan Khola	„	99 46 53	128
Dabar Char	„	280 43 53	130
Sánar Char	„	348 15 48	129
Sadipati, XXXIII			
Gaborgrám, XXXII		28 50 13·09	37
Boládánga, XXXV		91 11 46·80	38
Halkáchar, XXXVII		152 50 47·75	39
Jánkípur, XXXVI		211 39 59·55	40
Char Sherpur, XXXIV		265 58 52·76	43
Poerbári, XXXI		325 51 43·48	37
Saidpur, III			
Sonpácha, V		214 59 52·32	3
Harina, I		272 43 2·87	2
Maheshpur, XX*		323 56 50·94	2
Samding, XXV†			
Singmári, XLV		37 8 13·80	54
Alangjáni, XXII†		113 8 13·63	55
Sálmára Well		118 58 59	91
Arbela Hill Staff		319 50 58	80
Durama Hill Staff		332 51 26	79
Rangira, XLVI		345 47 46·25	54
Shekarpára	h.s.	352 39 31	88
Samrampur s.			
Char Dari Kustia No. 2	s.	76 58 49	136
Jáfar Mandalpára	„	137 7 17	136
Char Hasadia No. 1	„	314 17 30	138
Char Dari Kustia No. 3	„	358 50 3	137
Sanar Char s.			
Bhári Ghágri	s.	118 28 2	129
Rehái Astodhar	„	168 15 55	129
Dabar Char	„	230 56 19	130
Char Tárapur	„	285 59 59	131

* Of the East Calcutta Longitudinal Series. † Of the Assam Longitudinal Series.

Name of station with azimuths of surrounding points			No. of triangle giving distance
SATHPIKIA s.		° ′ ″	
Jamálpur, Dayamayi's Shrine		59 48 10	100
Jamálpur, Magistrate's House	s.	95 8 51	97
Pakkhimári Char	,,	133 15 12	97
Buláí Char	,,	283 22 39	99
Kuturia	,,	337 56 4	98
SHEKARPARA h.s.			
Borchi	h.s.	43 36 44	87
Singmári, XLV		78 56 8	87
Khák	,,	123 46 41	89
Sálmára Well		161 36 27	91
Sámding, XXV*		172 39 59	88
SHUKCHAR s.			
Singmári, XLV		284 31 17	84
Borchi	h.s.	313 37 5	84
SINGMARI, XLV			
Peshkárbhita, XLIII		6 28 37·70	52
Narsinghbanj, XLIV		62 48 32·32	52
Singmári Hát	s.	82 13 55	83
Shukchar	,,	104 31 58	84
Chalakandi	,,	110 32 20	85
Gobindpur, XLVII		113 25 58·32	56
Alangjáni, XXII*		152 1 0·65	55
Malakháwa Temple No. 1		163 12 36	86
Jor Mandir Tree		214 18 24	90
Sámding, XXV*		217 4 56·35	54

Name of station with azimuths of surrounding points			No. of triangle giving distance
SINGMARI, XLV		° ′ ″	
Khák	h.s.	242 36 14	89
Shekarpára	,,	258 52 22	87
Rangira, XLVI		308 22 4·27	53
Borchi	,,	322 24 23	81
SINGMARI HAT s.			
Singmári, XLV		262 13 33	83
Borchi	h.s.	314 50 59	83
SIBTA s.			
Jailkhána Char No. I	s.	24 56 30	142
Char Hasadia No. 2	,,	96 12 29	142
Nukhi Ulghi Char	,,	307 18 0	144
Jailkhána Char No. 2	,,	333 18 48	143
SOILABARI (NEW), XXIV			
Párkoksa (new), XXVII		200 50 17·01	27
Basalia, XXI		273 21 3·45	26
Mokimpur, XX		340 11 0·63	26
SONPACHA, V			
Saidpur, III		35 2 17·92	3
Khánkhánápur, VIII		154 9 49·83	8
Gáskanchan, VI		214 0 50·05	7
Gázitak, IV		273 13 38·67	4
Harina, I		332 42 16·75	3

Name of station with azimuths of surrounding points			No. of triangle giving distance
TEPRI, XI		° ′ ″	
Paipára, X		17 27 23·38	13
Bháranga, XIII		85 58 24·11	14
Bangaon, XV		156 35 59·94	15
Nagarpur House No. 2		182 9 26	63
Bani, XIV		213 0 19·86	16
Báliáti House		256 45 53	60
Dúrgrám House		259 44 25	59
Chámtia, XII		271 31 7·80	17
Rámdiha, IX		327 7 34·02	13
TULSI CHAR No. 1 s.			
Narindi	s.	25 57 42	120
Ghára Mára	,,	88 28 57	120
Tulsi Char No. 2	,,	286 40 58	122
Mírapur	,,	332 22 32	121
TULSI CHAR No. 2 s.			
Mírapur	s.	29 20 57	122
Tulsi Char No. 1	,,	106 41 30	122
Madhua Char	,,	250 11 26	124
Etail	,,	330 20 21	123
ULGHI CHAR s.			
Bhawáníganj	s.	51 53 16	112
Lakhi Char No. 1	,,	77 30 8	112
Lakhi Char No. 2	,,	104 55 58	113
Rai Gujairia	,,	209 16 29	114
Khás Gujairia	,,	279 3 3	115

* Of the Assam Longitudinal Series.

June 1880.

J. B. N. HENNESSEY,

In charge of Computing Office.

BRAHMAPUTRA 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, 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. Certain points, distinguished here by †, were fixed from principal or secondary stations by traversing with a small theodolite and perambulator or chain. 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.
Ahmidpur s. (*Mymensingh*) Is about 15 yards N.W. of road from Jamálpur to Mymensingh and opposite to Sri Rám Daju Fakír's garden. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ inscribed on them, one imbedded at the ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide. ° ′ ″ λ 24 52 33·47 L 90 3 14·46 No. 109	**Aloákándi, XXX.** (*Vide page 7—V.*) ° ′ ″ λ 24 45 29·80 L 89 41 9·37 H 88 *h* 38 No. 32	**Átia Thána.** (*Mymensingh*) Flag on Pipal tree at W. edge of thána. ° ′ ″ λ 24 10 39 L 89 57 14
Ahmidpur Solitary Palm Tree. (*Mymensingh*) On right bank of the Brahmaputra river. λ 24 52 22 L 90 3 35	**Arbela Hill Staff.** (*Gáro Hills*) Station of Gáro Hills Survey of 1872-73. λ 25 33 41·23 L 90 22 27·43 H 3305 No. 80	**Bághmára, XXVIII.** (*Vide page 7—V.*) λ 24 45 24·87 L 89 51 37·87 H 88 *h* 38 No. 31
Alangjáni, XXII.* (*Vide page 10—V.*) λ 25 59 6·81 L 89 48 8·37 H 143 *h* 43 Nos. 55, 57	**Astodhar Tamarind Tree.** (*Mymensingh*) Flag on large tamarind tree on N. side of village. λ 24 52 29 L 90 14 50	**Bághpur, II.** (*Vide page 4—V.*) λ 23 25 15·16 L 90 3 53·72 H 50 *h* 41 No. 5
	Átia Kachahri. (*Mymensingh*) λ 24 10 57·3 L 89 57 14·8	**Bagoria Hát.†** (*Rungpore*) Is marked by a mound of earth 3½ feet high and 5 feet in diameter, covering two bricks with ⊙ engraved on each, one at ground level and the other 1 foot below: the mound is surrounded by a ditch 2 feet deep and 1½ feet wide. λ 25 20 12 L 89 38 54
	Átia Masjid, (*Mymensingh*) Spire. λ 24 11 0·4 L 89 57 18·1 No. 65	

* Of the Assam Longitudinal Series.

Name of station, district, description, co-ordinates &c.

Baiganbári Factory s.
(*Mymensingh*) On roof of two storied paka house at Baiganbári Factory. The S.W. corner of roof is 47½ feet, S.E. corner 34½ feet, N.W. corner 37½ feet, N.E. corner 18½ feet, and the chimney which is to the W., 5½ feet. The Brahmaputra river is about 200 yards to N. The station is marked by ⊙.

	°	′	″
λ	24	47	53·60
L	90	21	29·05

No. 139

Bakshiganj Kachahri.†
(*Mymensingh*) Flag on roof of Zamíndár's paka Kachahri; point marked by ⊙.

λ	25	10	57
L	89	54	41

Báliáti House.
(*Dacca*) Centre of front gable of Dínanáth Chaudhri's paka house.

λ	23	59	36·5
L	90	4	51·9

Nos. 60, 61

Banderája Hill Tree.
(*Gáro Hills*) Flag on tree marked with × cut on it.

λ	25	29	33
L	89	59	30
H	521		

Bangaon, XV.
(*Vide page* 5—V.)

λ	24	4	48·22
L	89	51	9·98
H	68		
h	39		

No. 15

Bani, XIV.
(*Vide page* 5—V.)

λ	24	4	58·68
L	90	0	0·62
H	64		
h	37		

Nos. 16, 18

Baniajori Temple,
(*Dacca*) Spire.

λ	23	50	46·3
L	89	58	56·8

Banikátra, XXII.
(*Vide page* 6—V.)

λ	24	28	11·49
L	90	2	12·59
H	76		
h	39		

No. 29

Name of station, district, description, co-ordinates &c.

Bar Char s.
(*Mymensingh*) Is 100 yards W. of village so called and about 200 yards from left bank of the Brahmaputra river. It is marked by a paka pillar 3 feet square at base and 1½ feet high containing two bricks with ⊙ inscribed on them, one imbedded at its upper surface and the other 1½ feet below.

	°	′	″
λ	24	47	22·47
L	90	25	52·27

No. 145

Basail, XVII.
(*Vide page* 6—V.)

λ	24	13	30·45
L	90	5	23·31
H	71		
h	39		

No. 23

Basalia, XXI.
(*Vide page* 6—V.)

λ	24	29	15·06
L	89	53	21·57
H	79		
h	39		

No. 25

Belta, XVI.
(*Vide page* 5—V.)

λ	24	13	9·08
L	89	55	1·37
H	76		
h	41		

No. 19

Berubári-banda Hát.†
(*Rungpore*) Is marked by a mound of earth 3½ feet high and 5 feet in diameter, covering two bricks with ⊙ engraved on each, one at ground level and the other 1 foot below: the mound is surrounded by a ditch 2 feet deep and 1½ feet wide.

λ	25	57	21
L	89	47	0

Bhanjamára Hill Tree.
(*Gáro Hills*) Flag on tree marked with × cut on it.

λ	25	46	17
L	90	4	44
H	555		

Bháranga, XIII.
(*Vide page* 5—V.)

λ	23	56	43·92
L	89	44	18·03
H	63		
h	38		

No. 14

Name of station, district, description, co-ordinates &c.

Bhári Ghágri s.
(*Mymensingh*) Is N. of Bhári Ghágri village which lies immediately S. of road Jamálpur to Mymensingh. The Brahmaputra river is about 500 yards to the N. and the Kálibári bazar lies to the W.S.W. The station is on lands called Bandabasti Char Tárapur, and is marked by a paka pillar 3 feet square at base and 1½ feet high containing two bricks with ⊙ inscribed on them, one imbedded at the ground level and the other 1½ feet below.

	°	′	″
λ	24	52	57·87
L	90	14	19·82

No. 127

Bhasarpára, Dolmancha Shiwála.†
(*Rungpore*) Flag on paka floor under the large dome; point marked by ⊙.

λ	25	19	16
L	89	39	37

Bháti Gujairia s.
(*Mymensingh*) Is in open ground on left bank of the Brahmaputra river, and 575 yards S. of Rái Gujairia village. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ inscribed on them, one imbedded at the ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24	53	31·25
L	90	7	31·34

No. 116

Bhawáníganj s.
(*Mymensingh*) On roof of paka boiling house of an old Indigo Factory at Bhawáníganj bazar, and is 658 yards W. and N.E. respectively of Khurkhuria and Naudena villages. Bhawáníganj village is about 141 yards to N.E. The station is marked by ⊙.

λ	24	52	16·97
L	90	4	42·25

No. 110

Bhawánípur. †
(*Rungpore*) Is on the site occupied by a kacha trijunction pillar of Bazarpára, Kekaikáshdaha, and Bhawánípur villages, and is marked by a mound of earth 3½ feet high and 5 feet in diameter, covering two bricks with ⊙ engraved on each, one at ground level and the other 1 foot below: the mound is surrounded by a ditch 2 feet deep and 1½ feet wide.

λ	25	30	18
L	89	34	48

Bodir Hát.†
(*Rungpore*) Is marked by a masonry pillar 2 feet square, covering two bricks with ⊙ engraved on each, one at ground level and the other 1 foot below: the centre of the pillar corresponds with the upper mark.

λ	25	26	37
L	89	42	38

Name of station, district, description, co-ordinates &c.

Boládánga, XXXV.
(*Vide page* 8—V.)

	°	′	″
λ	25	1	36·65
L	89	38	55·74
H	92		
h	38		

No. 38

Bonárpára, XXXVIII.
(*Vide page* 8—V.)

λ	25	10	31·36
L	89	34	12·34
H	104		
h	38		

No. 45

Borchi h.s.
(*Gáro Hills*) On a low range of hills in mauza Dhánu, about 2 miles E. of the village of that name and ½ a mile S. of Jánkípára village. The lower mark-stone is identical with that of Borchi Station of the Gáro Hills Survey of 1872-73. It is marked by a platform of stones 9 feet square, surrounding an isolated masonry pillar 1 foot high and 32 inches in diameter, containing two mark-stones with ⊙ inscribed on them, one at the upper surface of the pillar and the other at ground level.

λ	25	39	57·62
L	90	0	22·10
H	540		
h	1		

Nos. 81, 82

Borel, XLI.
(*Vide page* 9—V.)

λ	25	26	51·41
L	89	43	42·23
H	113		
h	36		

No. 47

Bráhmangaon, VII.
(*Vide page* 4—V.)

λ	23	40	35·29
L	90	5	44·47
H	59		
h	38		

No. 11

Bulái Char s.
(*Mymensingh*) On N.W. bank of the Brahmaputra river and ½ of a mile S. of Bulái Char village. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ inscribed on them, one imbedded at the ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24	55	37·28
L	90	2	1·13

No. 99

Name of station, district, description, co-ordinates &c.

Chalakandi s.
(*Goálpára*) Is about ½ a mile N.E. of the village of that name and ½ of a mile W. of Shukchar village. It is marked by a masonry pillar 1 foot high and 32 inches in diameter, containing two mark-stones with ⊙ inscribed on them, one at the upper surface of the pillar and the other at ground level. The pillar is now covered with a mound of earth 4 feet high and 6 feet in diameter which is surrounded by a ditch 2 feet deep and 2 feet wide.

	°	′	″
λ	25	44	23·10
L	89	55	4·48
H	79		

No. 85

Chámtia, XII.
(*Vide page* 5—V.)

λ	23	57	8·10
L	90	5	34·31
H	56		
h	35		

No. 17

Chandra s.
(*Mymensingh*) On roof of Shám Kishor Hor's paka house on E. side and in village of Chandra. The station is marked by ⊙.

λ	24	56	34·81
L	89	57	25·60

No. 93

Chandra Báisa Paka Kothi.†
(*Bogra*) Flag on roof; point marked by ⊙.

λ	24	47	50
L	89	39	39

Chápri h.s.
(*Gáro Hills*) On a peak conspicuous by being a little higher than the surrounding low hills, it is in pargana Kakripára, and about 3 miles E. of Nokmán village. It is supposed to be identical with Chápri Station of the Khási and Gáro Hills Survey of 1869-70, but no mark-stone was forthcoming. It is now marked by a platform of stones 9 feet square, surrounding an isolated masonry pillar 1 foot high and 32 inches in diameter, containing two mark-stones with ⊙ inscribed on them, one at the upper surface of the pillar and the other at ground level.

λ	25	28	4·25
L	90	1	30·39
H	518		

Nos. 68, 69

Char Dari Kustia No. 1 s.
(*Mymensingh*) Is about ½ a mile E. of village of that name. The road from Jamálpur to Mymensingh is about ½ a mile to S. S. W. and the Brahmaputra river 211 yards to N. N. W. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ inscribed on them, one imbedded at the ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24	50	14·90
L	90	18	15·17

No. 133

Name of station, district, description, co-ordinates &c.

Char Dari Kustia No. 2 s.
(*Mymensingh*) On S. bank of a branch of the Brahmaputra river. A hamlet of Char Dari Kustia lies 100 yards to W. and another about the same distance to S. S. E. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ inscribed on them, one imbedded at the ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

	°	′	″
λ	24	49	35·52
L	90	19	24·80

No. 135

Char Dari Kustia No. 3 s.
(*Mymensingh*) Is ½ of a mile S. of road on which to E. lies the village of Baiganbári. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ inscribed on them, one imbedded at the ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24	48	44·79
L	90	20	30·97

No. 137

Char Hasadia No. 1 s.
(*Mymensingh*) Is some distance from the left bank of the Brahmaputra river, about ½ of a mile N.W. of a hamlet of Char Hasadia village and 289 yards S.S.W. of that of Char Shámrámpur. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ inscribed on them, one imbedded at the ground level and the other 1½ feet below; the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24	48	53·21
L	90	21	32·39

No. 138

Char Hasadia No. 2 s.
(*Mymensingh*) Is 289 yards S.E. of a hamlet of Char Hasadia village. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ inscribed on them, one imbedded at the ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24	48	35·62
L	90	22	24·10

No. 140

Char Jahathpur No. 1. s.
(*Mymensingh*) On the Char between two branches of the Brahmaputra river, and is 215 yards W. of Char Jahathpur village. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ inscribed on them, one imbedded at the ground level and the other 1½ feet below; the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24	54	41·18
L	90	2	13·59

No. 102

Name of station, district, description, co-ordinates &c.

Char Jahathpur No. 2 s.
(*Mymensingh*) On the Char between two branches of the Brahmaputra river, and is about 347 yards from the easternmost hamlet of Char Jahathpur village. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ inscribed on them, one imbedded at the ground level and the other 1½ feet below; the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

	°	′	″
λ	24	53	50·99
L	90	2	35·85

No. 104

Char Sherpur, XXXIV.
(*Vide page* 8—V.)

λ	25	2	5·53
L	90	0	53·54
H	89		
h	31		

No. 43

Char Tárapur s.
(*Mymensingh*) On right bank of the Brahmaputra river, and is 282 yards W. of Char Tárapur village, and ¼ of a mile N.N.W. of that of Jáfar Char. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ inscribed on them, one imbedded at the ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24	51	59·30
L	90	17	1·38

No. 131

Dabar Char s.
(*Mymensingh*) Is about ½ a mile E.S.E. of Dabar Char village and the same distance S.E. of that of Rámbhadrapur. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ inscribed on them, one imbedded at the ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24	53	17·33
L	90	16	42·92

No. 130

Deár Char Tamarind Tree,
(*Mymensingh*) Large, in village.

λ	24	53	9
L	90	48	40

Dhánu Hill Tree.
(*Gáro Hills*) Flag on tree marked with × cut on it.

λ	25	40	25
L	90	0	8
H	567		

Dibru Hill Tree,
(*Gáro Hills*) Single.

λ	25	53	59
L	90	10	30
H	602		

Name of station, district, description, co-ordinates &c.

Digri Char (Lakhipur) s.
(*Mymensingh*) Is about 150 yards from left bank of the Brahmaputra river. The village of Digri Char (Lakhipur) is 300 yards to E.S.E. and Digri Char (Raghurámpur) about ¼ of a mile to N. It is marked by a paka pillar 1½ feet high and 3 feet square at base, covering two bricks with ⊙ inscribed on them, one imbedded at the upper surface and the other 1½ feet below.

	°	′	″
λ	24	46	47·84
L	90	26	44·07

No. 147

Diwánganj Kachahri. †
(*Mymensingh*) Flag on roof of Zamíndár's paka Kachahri; point marked by ⊙.

λ	25	9	55
L	89	48	46

Dúliabári, XVIII.
(*Vide page* 6—V.)

λ	24	13	4·83
L	89	45	40·85
H	69		
h	38		

No. 20

Durama Hill Staff.
(*Gáro Hills*) Station of Gáro Hills Survey of 1872-73.

λ	25	29	47·5
L	90	17	43·6
H	4056		

No. 79

Dúrgrám House.
(*Dacca*) S.W. angle of turret of a paka house.

λ	23	58	39·7
L	90	2	12·9

No. 59

Etail s.
(*Mymensingh*) On right bank of the Brahmaputra river, and is ¼ of a mile N.E. of a hamlet of Etail village, the same distance N.W. of that of Chechánbári and 100 yards S. of road from Jamálpur to Mymensingh. The Brahmaputra river is about 120 yards to the North. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ inscribed on them, one imbedded at the ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24	52	15·43
L	90	11	48·79

No. 128

Furreedpore Kachahri.
(*Furreedpore*) Revenue Survey Station on the Magistrate's Kachahri.

λ	23	36	23·5
L	89	53	11·8

No. 58

Name of station, district, description, co-ordinates &c.

Gaborgrám, XXXII.
(*Vide page* 7—V.)

	°	′	″
λ	24	53	35·96
L	89	45	21·27
H	88		
h	33		

No. 38

Gáropára, XXXIX.
(*Vide page* 8—V.)

λ	25	20	46·09
L	89	54	12·30
H	545		
h	5		

No. 41

Gáskañchan, VI.
(*Vide page* 4—V.)

λ	23	41	25·62
L	89	55	19·95
H	63		
h	40		

No. 7

Gázitak, IV.
(*Vide page* 4—V.)

λ	23	32	41·22
L	89	59	30·91
H	62		
h	39		

Nos. 4, 6

Ghára Mára s.
(*Mymensingh*) Is 80 yards S. of village of that name, about 15 yards from left bank of the Brahmaputra river and 500 yards from the present stream. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ inscribed on them, one imbedded at the ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24	53	26·05
L	90	8	35·72

No. 118

Ghoráhát Hill Tree.
(*Gáro Hills*) Flag on tree marked with × cut on it.

λ	25	29	37
L	89	58	23
H	401		

Gobindpur, XLVII.
(*Vide page* 10—V.)

λ	25	47	31·21
L	89	47	21·72
H	132		
h	40		

No. 56

Name of station, district, description, co-ordinates &c.

Gopálpur Gola.
(*Mymensingh*)

	° ′ ″
λ	24 33 44
L	89 58 14

Guabária s.
(*Mymensingh*) Is on char lands belonging to the village of Guabária and about 1¼ miles N.W. of the town of Jamálpur. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1¼ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24 57 15·71
L	89 58 18·91

No. 94

Hábra Indigo Factory. †
(*Furreedpore*) Revenue Survey station on roof of drying house of the Indigo Factory.

λ	23 16 52
L	89 47 42

Hádur Mandir, †
(*Rungpore*) Centre of dome.

λ	25 29 46
L	89 35 11

Halkáchar, XXXVII.
(*Vide page* 8—V.)

λ	25 9 55·94
L	89 45 15·60
H	103
h	40

No. 39

Harina, I.
(*Vide page* 4—V.)

λ	23 24 43·59
L	89 54 4·12
H	54
h	36

No. 1

Haripur s.
(*Mymensingh*) Is about 10 yards from S.W. bank of the Brahmaputra river, 15 yards N. E. of road from Jamálpur to Mymensingh and ¼ of a mile from Haripur village. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1¼ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24 54 2·17
L	90 1 42·22

No. 103

Hingal Sarkár's Masjid, †
(*Rungpore*) Spire of centre dome.

λ	25 29 47
L	89 34 25

Name of station, district, description, co-ordinates &c.

Ichhápur, XIX.
(*Vide page* 6—V.)

	° ′ ″
λ	24 21 16·28
L	89 58 54·10
H	74
h	38

Nos. 22, 24

Jáfar Mandalpára s.
(*Mymensingh*) Is in open ground about 80 yards N. of the Brahmaputra river, ¼ of a mile S.S.W. of Jáfar Mandalpára (Borar Char) village and 352 yards S.W. of the village so called. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1¼ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24 50 52·99
L	90 19 24·60

No. 134

Jailkhána Char No. 1 s.
(*Mymensingh*) Is about 50 feet S. of right bank of the Brahmaputra river and 200 yards N. of Duládeir village. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1¼ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24 47 51·38
L	90 23 25·29

No. 141

Jailkhána Char No. 2 s.
(*Mymensingh*) Is about 20 yards from old bank of the Brahmaputra river which is 500 yards away, and about ¼ of a mile W. of the hamlet of Kagdar Char. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1¼ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24 47 23·85
L	90 24 18·97

No. 143

Jamálpur, Dayamayi's Shrine.
(*Mymensingh*) Flag on roof of room over gateway; point marked by ⊙.

λ	24 55 20·9
L	89 59 36·6

Nos. 100, 101

Jamálpur Jail s.
(*Mymensingh*) On roof of N. páka building in Jail enclosure; point marked by ⊙.

λ	24 56 8·07
L	89 58 47·76
H	77

No. 92

Name of station, district, description, co-ordinates &c.

Jamálpur Magistrate's House s.
(*Mymensingh*) On roof of the house occupied by the Deputy Magistrate on S. W. bank of the Brahmaputra river; point marked by ⊙.

	° ′ ″
λ	24 56 2·45
L	89 59 7·03

No. 96

Jánkípára Hill Tree.
(*Gáro Hills*)

λ	25 37 36
L	90 3 32

Jánkípur, XXXVI.
(*Vide page* 8—V.)

λ	25 9 38·05
L	89 55 38·65
H	104
h	38

Nos. 40, 44

Játrapur Hát. †
(*Rungpore*) Is about 24 yards N.N.E. of Chandi Mandir. It is marked by a masonry pillar 2 feet square and 1 foot high, covering 2 bricks with ⊙ engraved on each, one imbedded at ground level and the other 1 foot below: the centre of the pillar corresponds with the upper mark.

λ	25 49 15
L	89 47 36

Jayrámpur s.
(*Mymensingh*) Is N. E. of Jayrámpur village and between the road from Jamálpur to Mymensingh and the Brahmaputra river, about 20 yards from the former and 40 yards from the latter. Jayrámpur village stretches along S.W. side of road. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1¼ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24 53 14·17
L	90 2 27·33

No. 105

Jingrínth Hill Tree,
(*Gáro Hills*) Single.

λ	25 48 37
L	90 21 40
H	1380

Jor Mandir Tree.
(*Gáro Hills*) Flag on tree on temple which is completely covered by the roots of the tree. The temple is 25½ feet high, and is in very good preservation; point marked on tree.

λ	25 48 6·7
L	90 0 35·5
H	98

No. 90

Name of station, district, description, co-ordinates &c.

Kágmári Pipal Tree.
(*Mymensingh*) Flag on Pipal Tree at N. E. corner of bazar.

	° ′ ″
λ	24 13 47
L	89 56 15

Kakripára Hát s.
(*Godlpára*) Is in the centre of hát in Kakripára village, about 92 yards S.S.E. of the Zamíndár's Kachahri and 64 yards N.N.E. of the police station. It is marked by a masonry pillar 1 foot high and 32 inches in diameter, containing two mark-stones with ⊙ inscribed on them, one at the upper surface of the pillar and the other at ground level. The pillar is covered with a mound of earth 4 feet high and 6 feet in diameter which is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	25 30 9·23
L	89 54 40·65
H	79

No. 72

Kakripára h.s.
(*Godlpára*) Is on a low spur of the range of hills on which Rámbolatári h.s. is situated, about ½ a mile S. of Chamávil village and ¾ of a mile E. of Kakripára village. It is marked by a pile of stones covering a mark-stone with ⊙ imbedded at the surface of the ground.

λ	25 30 17·34
L	89 55 15·47
H	254

No. 73

Kálibári Pipal Tree.
(*Mymensingh*) Large tree in bazar, 15 yards N. of road.

λ	24 52 36
L	90 14 54

Kámárjáni, Zamíndár's Kachahri. †
(*Rungpore*) Flag on roof of Prasanna Kumár Thákur's paka Kachahri; point marked by ⊙.

λ	25 23 35
L	89 41 17

Kánchipára, XL.
(*Vide page* 9—V.)

λ	25 18 43·72
L	89 38 42·57
H	111
h	41

Nos. 42, 46

Káshdaha, XLII.
(*Vide page* 9—V.)

λ	25 29 48·63
L	89 34 25·12
H	120
h	43

No. 50

Name of station, district, description, co-ordinates &c.

Káshdaha Jama Masjid, †
(*Rungpore*) Spire of centre dome, in village.

	° ′ ″
λ	25 29 25
L	89 34 0

Khák h.s.
(*Gáro Hills*) Is on W. end of the range of hills on which Shekarpára h.s. is situated, about 1 mile N. of Bandhabu village and 2 miles N. E. of Golgaon village. It is marked by a platform of stones 9 feet square surrounding an isolated masonry pillar 1 foot high and 32 inches in diameter, containing two mark-stones with ⊙ inscribed on them, one at the upper surface of the pillar and the other at ground level.

λ	25 46 36·15
L	90 3 31·25
H	472

No. 89

Khánkhánápur, VIII.
(*Vide page* 5—V.)

λ	23 41 11·51
L	89 45 7·67
H	60
h	33

No. 8

Khás Gujairia s.
(*Mymensingh*) Is about 246 yards E. of Khás Gujairia village and 100 yards from the right bank of the Brahmaputra river. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24 53 3·12
L	90 6 52·58

No. 115

Kosundra s.
(*Mymensingh*) Is on right bank of the Brahmaputra river and on old road to Mymensingh, 289 yards N. of village so called and 576 yards E. of Táraganj bazar. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24 52 25·83
L	90 7 43·30

No. 117

Kustia Tamarind Tree,
(*Mymensingh*) Large, in village.

λ	24 49 18
L	90 18 16

Name of station, district, description, co-ordinates &c.

Kuturia s.
(*Mymensingh*) Is about 20 yards inland on S.W. bank of the Brahmaputra river, 30 yards N. E. of the road from Jamálpur to Mymensingh and 274 yards N.E. of Kuturia village. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

	° ′ ″
λ	24 55 9·22
L	90 1 0·66

No. 98

Lakhi Char No. 1. s.
(*Mymensingh*) Is in open ground on N. E. bank of the Brahmaputra river, between 3 hamlets of Lakhi Char village. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24 52 53·36
L	90 4 30·28

No. 111

Lakhi Char No. 2. s.
(*Mymensingh*) Is 334 yards E. of a hamlet of Lakhi Char village and 723 yards S. of Char Gujairia village. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24 53 20·25
L	90 5 20·09

No. 113

Lálchamár Hát. †
(*Rungpore*) Is marked by a masonry pillar 2 feet square and 1 foot high, covering 2 bricks with ⊙ engraved on each, one imbedded at ground level and the other 1 foot below: the centre of the pillar corresponds with the upper mark. The pillar is on N. side of the hát.

λ	25 28 43
L	89 42 7

Madárganj Shiwála. †
(*Rungpore*) Spire of temple in centre of village.

λ	25 57 23
L	89 50 35

Madhua Char s.
(*Mymensingh*) Is on left bank of the Brahmaputra river, ½ a mile S.W. of Madhua Char village and ½ of a mile N.W. of the eastern extremity of Kázi Char village. It is marked by a mound of earth 4 feet high and 10 feet in diameter, covering 3 bricks with ⊙ engraved on each, one imbedded at ground level, one at top and the third midway between them. The upper mark is covered by a mound of earth to the height of 3 feet: which is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24 53 27·69
L	90 12 18·37

No. 124

Name of station, district, description, co-ordinates &c.

Maheshpur, XX*.

(*Vide page 3—r.*)

	°	′	″
λ	23	17	26·32
L	89	49	21·02
H	58		
h	38		

No. 1

Malakháwa Temple No. 1.

(*Godlpára*) Spire of temple in village.

λ	25	45	12·7
L	89	56	42·7
H	84		

No. 86

Malakháwa Temple No. 2.

(*Godlpára*) On centre of roof of Bhawáni Mandal's paka Thákurbári 10 feet 10 inches above ground; point marked by ⊙.

λ	25	45	6·5
L	89	56	38·3
H	98		

Mankachar Hát s.

(*Godlpára*) Is on E. side of hát, about 300 yards N. W. of the Zamíndár's Kachahri, and 350 yards N.N.W. of the circuit bungalow. It is marked by a masonry pillar 1 foot high and 32 inches in diameter, containing two mark-stones with ⊙ inscribed on them, one at the upper surface of pillar and the other at ground level. The pillar is covered with a mound of earth 4 feet high and 6 feet in diameter which is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	25	31	59·90
L	89	54	20·83
H	81		

No. 74

Mírapur s.

(*Mymensingh*) Is about ¼ of a mile N.E. of village so called and 10 yards S. of road from Jamálpur to Mymensingh. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24	52	13·46
L	90	10	43·19

No. 121

Mirdhapára s.

(*Mymensingh*) Is about ¼ of a mile N.W. of Mirdhapára (Borar Char) village, ½ of a mile S. of Digripára (Borar Char) village and ¼ of a mile E. of the Brahmaputra river. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24	52	13·33
L	90	18	31·88

No. 132

Name of station, district, description, co-ordinates &c.

Mohanganj Hát.†

(*Rungpore*) Is marked by a masonry pillar 1 foot high and 2 feet square, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1 foot below: the centre of the pillar corresponds with the upper mark. The pillar is on W. side of the hát.

	°	′	″
λ	25	27	26
L	89	46	6

Mokimpur, XX.

(*Vide page 6—r.*)

λ	24	21	11·29
L	89	46	24·62
H	78		
h	41		

No. 21

Monibar Hát.†

(*Godlpára*) Is marked by a masonry pillar 1 foot high and 2 feet square, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1 foot below: the centre of the pillar corresponds with the upper mark.

λ	25	46	2
L	89	47	59

Moria Hát.†

(*Rungpore*) Is marked by a masonry pillar 1 foot high and 2 feet square, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1 foot below: the centre of the pillar corresponds with the upper mark.

λ	25	58	2
L	89	46	51

Muktágácha Temple No. 1.†

(*Mymensingh*) Spire of Amarta Bábu's temple in village.

λ	24	46	5
L	90	17	58

Muktágácha Temple No. 2.†

(*Mymensingh*) Spire of Súraj Kánt Bábu's temple (easternmost) in village.

λ	24	46	2
L	90	17	59

Mymensingh, Debtors' Jail,

(*Mymensingh*) Flag on roof; point marked by ⊙.

λ	24	46	25·6
L	90	25	39·3

Nos. 148, 149

Mymensingh Kachahri,

(*Mymensingh*) Flag on roof of clock tower; point marked by ⊙.

λ	24	45	48·5
L	90	26	54·9

Nos. 150, 151

Name of station, district, description, co-ordinates &c.

Mymensingh s.

(*Mymensingh*) Is about ¼ of a mile E. of the graveyard, on roof of a small room at upper end of staircase leading to top of a large double storied paká house at its S. E. corner. The house which is owned by Bábu Hari Zamíndár is on S. bank of a branch of the Brahmaputra river. It is marked by ⊙.

	°	′	″
λ	24	46	11·81
L	90	26	16·10

No. 146

Mymensingh Temple No. 1.

(*Mymensingh*) Spire of Parán Sukh Burchith's temple.

λ	24	45	22·1
L	90	27	3·4

Nos. 152, 153

Mymensingh Temple No. 2.

(*Mymensingh*) Spire of Deota Dín Tewári's Shiwála.

λ	24	45	27·0
L	90	27	20·3

Nos. 154, 155

Nagarpur House No. 1.

(*Mymensingh*) N.W. angle of a paka house with castellated turret.

λ	24	3	8·4
L	89	55	13·5

No. 62

Nagarpur House No. 2.

(*Mymensingh*) Turret of N.W. paka house.

λ	24	3	22·7
L	89	54	53·9

Nos. 63, 64

Nagarpur House No. 3.

(*Mymensingh*) Flag on centre of turret of paka house of Síta Náth Sháh Dallál.

λ	24	3	16·6
L	89	55	12·7

Nageshwari Police Station.†

(*Rungpore*) Is marked by a masonry pillar 1 foot high and 2 feet square, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1 foot below: the centre of the pillar corresponds with the upper mark.

λ	25	58	10
L	89	44	28

Náráyan Khola s.

(*Mymensingh*) Is on left bank of the Brahmaputra river, 134 yards S. of a hamlet of Náráyan Khola village, about 2 miles S.W. of main portion of village so called and ¼ a mile S. E. of Char Bhawáni village. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24	53	45·98
L	90	13	49·50

No. 126

* Of the East Calcutta Longitudinal Series.

Name of station, district, description, co-ordinates &c.

Narindi Bar Tree.
(*Mymensingh*) Flag on Bar tree S. of Rám Kumár Sen's house.

	° ′ ″
λ	24 51 41
L	90 10 19

Narindi s.
(*Mymensingh*) Is about ½ a mile N.N.W. of a hamlet of Narindi village, W.N.W. of main portion of village so called, and 55 yards N. of road from Jamálpur to Mymensingh. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24 52 4·91
L	90 9 15·96

No. 119

Narsinghbanj, XLIV.
(*Vide page 9—V.*)

λ	25 37 13·09
L	89 43 26·21
H	126
h	41

Nos. 49, 51

Nokrekh Hill, Large Tree.
(*Gáro Hills*)

λ	25 27 39
L	90 21 52
H	4672

Nukhi Ulghi Char s.
(*Mymensingh*) Is on village lands of Nukhi Ulghi Char, on N. bank of the Brahmaputra river. One portion of the village is about 340 yards to W. and another about the same distance to E. of the station. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below; the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24 47 49·21
L	90 24 39·17

No. 144

Paipára, X.
(*Vide page 5—V.*)

λ	23 49 21·63
L	89 51 54·13
H	62
h	38

No. 9

Pákdiha, XXI.*
(*Vide page 4—V.*)

λ	23 16 56·08
L	89 59 34·10
H	52
h	38

No. 1

Name of station, district, description, co-ordinates &c.

Pakkhimári Char s.
(*Mymensingh*) Is about 200 yards from N.E. bank of the Brahmaputra river, and is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

	° ′ ″
λ	24 57 3·04
L	89 59 20·82

No. 95

Pánchgáchi Hát. †
(*Rungpore*) Is marked by a masonry pillar 1 foot high and 2 feet square, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1 foot below: the centre of the pillar corresponds with the upper mark.

λ	25 49 7
L	89 45 7

Pára Hill Tree.
(*Goálpára—Gáro Hills*) Flag on tree marked with × cut on it.

λ	25 29 28
L	89 55 38

Párkoksa (new), XXVII.
(*Vide page 7—V.*)

λ	24 37 20·80
L	89 46 9·40
H	85
h	40

No. 27

Peárpur Factory s.
(*Mymensingh*) Is on roof of paka house occupied by Mr. Biggle in 1873. It is marked by ⊙ which is 33 feet from N.E. corner of roof, 19 feet from S.E. corner, 32 feet from N.W. corner and 17 feet from S.W. corner. The house is about 20 yards S. of road and 50 yards S. of river.

λ	24 52 43·87
L	90 13 7·06

No. 125

Peshkárbhita, XLIII.
(*Vide page 9—V.*)

λ	25 31 2·33
L	89 55 39·17
H	277
h	5

No. 48

Poelsa, XXV.
(*Vide page 7—V.*)

λ	24 37 15·92
L	89 58 5·88
H	88
h	40

Nos. 28, 30

Name of station, district, description, co-ordinates &c.

Poerbári, XXXI.
(*Vide page 7—V.*)

	° ′ ″
λ	24 53 48·77
L	89 55 42·57
H	92
h	38

Nos. 34, 36

Puthimári Hát. †
(*Rungpore*) It is marked by a mound of earth 3½ feet high and 5 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1 foot below: the mound is surrounded by a ditch 2 feet deep and 1½ feet wide.

λ	25·17 46
L	89 39 7

Rabibári Hát Tree.
(*Goálpára*) Flag on tree in centre of hát, marked with × cut on it.

λ	25 37 32
L	89 55 34
H	143

Rahumári Indigo Vat.
(*Rungpore*) Point marked by ⊙.

λ	25 34 29·2
L	89 52 28·0
H	95

Nos. 75, 76

Rai Char s.
(*Mymensingh*) Is on left bank of the Brahmaputra river and about ½ of a mile from Rai Char village. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide. The station is on lands of Jayrámpur village.

λ	24 53 1·53
L	90 3 23·57

No. 106

Rai Gujairia s.
(*Mymensingh*) Is about 100 yards from left bank of the Brahmaputra river and 100 yards S. of Rai Gujairia village. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24 53 43·75
L	90 6 17·94

No. 114

* Of the East Calcutta Longitudinal Series.

Name of station, district, description, co-ordinates &c.

Rámbolatári h.s.
(*Gáro Hills*) Is on an elevated portion of a low range of hill, about 1 mile S. of Peshkárbhita village. The lower mark is identical with Rámbolatári station of the Khási and Gáro Hills Survey of 1869-70. It is marked by a platform of stones 9 feet square surrounding an isolated masonry pillar 1 foot high and 32 inches in diameter, containing 2 mark-stones with ⊙ inscribed on them, one at the upper surface of the pillar and the other at ground level.

	° ′ ″
λ	25 29 41·98
L	89 56 2·91
H	395

Nos. 70, 71

Rámdiha, IX.
(*Vide page 5—V.*)

λ	23 49 10·33
L	90 0 26·23
H	60
h	39

Nos. 10, 12

Rangira, XLVI.
(*Vide page 9—V.*)

λ	25 34 35·25
L	90 9 50·75
H	2208
h	3

No. 53

Rániganj Hát.†
(*Rungpore*) Is marked by a masonry pillar 1 foot high and 2 feet square, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1 foot below: the centre of the pillar corresponds with the upper mark.

λ	25 38 17
L	89 42 8

Rasalpur, Gopál's Shiwála.†
(*Rungpore*) Is marked by ⊙ on S. side of platform of temple, a little E. of the steps.

λ	25 19 26
L	89 40 11

Rashídpur, XXIX.
(*Vide page 7—V.*)

λ	24 46 9·59
L	90 2 8·50
H	85
h	39

No. 35

Rehái Astodhar s.
(*Mymensingh*) Is S.S.W. of village so called, on N. bank of the Brahmaputra river and about a mile S.S.E. of Náráyan Khola village. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide,

λ	24 53 32·70
L	90 15 14·03

No. 128

Name of station, district, description, co-ordinates &c.

Rotar Hát.†
(*Rungpore*) Is marked by a masonry pillar 1 foot high and 2 feet square, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1 foot below; the centre of the pillar corresponds with the upper mark.

	° ′ ″
λ	25 44 9
L	89 47 32

Sádipati, XXXIII.
(*Vide page 8—V.*)

λ	25 1 24·35
L	89 50 3·98
H	97
h	40

No. 37

Saidpur, III.
(*Vide page 4—V.*)

λ	23 25 12·46
L	89 43 13·76
H	62
h	40

No. 2

Sálmára Well.
(*Godálpára*) Is marked by ⊙ on E. rim of easternmost of two paka wells near Zamíndár's kachahri.

λ	25 53 44·3
L	90 2 43·0
H	101

No. 91

Sámding, XXV.*
(*Vide page 10—V.*)

λ	25 52 41·92
L	90 4 47·49
H	374
h	5

No. 54

Sámrámpur s.
(*Mymensingh*) Is in open ground about ½ a mile W.N.W. of village so called, the same distance S. of Char Sirgaldi village and about 400 yards N.E. of the Brahmaputra river. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24 49 49·18
L	90 20 29·53

No. 136

Sánar Char s.
(*Mymensingh*) Is 319 yards N.W. of Sánar Char village, ½ of a mile N.N.E. of Báliápára village and ½ of a mile S. of the Brahmaputra river. It is marked by a paka pillar 3 feet square at base and 1½ feet high, covering 2 bricks with ⊙ inscribed on them, one imbedded at the ground level and the other 1½ feet below. The station is on lands of Bandabasti char Tárapur.

λ	24 52 23·24
L	90 15 29·85

No. 129

Name of station, district, description, co-ordinates &c.

Sáthpikia s.
(*Mymensingh*) Is on ground covered with scattered Jungle, on N.E. bank of the Brahmaputra river, about ¼ a mile from village so called. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

	° ′ ″
λ	24 55 54·79
L	90 0 40·40

No. 97

Serajgunj House No. 1.
(*Pubna*) Flag on roof of single storied paka house of Mr. Murdoch.

λ	24 27 42·8
L	89 45 55·5

Serajgunj House No. 2.
(*Pubna*) Flag on roof of double storied paka house of Dr. Mc'Donnel.

λ	24 27 51·1
L	89 46 1·1

Serajgunj Jute Mills No. 1.
(*Pubna*) Southern and higher chimney.

λ	24 26 56·4
L	89 44 49·9

No. 66

Serajgunj Jute Mills No. 2.
(*Pubna*) Northern and lower chimney.

λ	24 27 1·7
L	89 44 50·5

No. 67

Shábázpur Bar Tree.†
(*Mymensingh*) Flag on Bar tree in old hát or bazar in village.

λ	24 51 8
L	90 0 41

Sharífpur Masjid.
(*Mymensingh*) Flag on N. side of roof and N. of three domes of Mulla Mánji's Masjid; point marked by ⊙.

λ	24 53 35·4
L	90 1 59·9

Nos. 107, 108

Shekarpára h.s.
(*Gáro Hills*) Is on E. end of a low range of hills, about 2 miles N. of Bhanjamára village. It is identical with Shekarpára station of the Gáro Hills Survey of 1872-73, and is marked by ⊙ on top of stump of a tree 10 feet in height above ground. The lower part of the stump, to a height of about 4 feet, is surrounded by a platform of stones 10 feet square.

λ	25 45 11·17
L	90 5 51·62
H	626
h	10

Nos. 87, 88

* Of the Assam Longitudinal Series.

Name of station, district, description, co-ordinates &c.

Shukchar s.
(*Godálpára*) Is about ¼ of a mile S. of the village of that name, and is marked by a masonry pillar 1 foot high and 32 inches in diameter, containing two mark-stones with ⊙ inscribed on them, one at the upper surface of the pillar and the other at ground level. The pillar is covered with a mound of earth 4 feet high and 6 feet in diameter which is surrounded by a ditch 2 feet deep and 2 feet wide.

	o	′	″
λ	25	44	1·22
L	89	55	40·10
H	84		

No. 84

Singmári, XLV.
(*Vide page 9—V.*)

λ	25	43	39·21
L	89	57	13·87
H	291		
h	5		

No. 52

Singmári Hát s.
(*Gáro Hills*) Is on the E. side of Singmári hát, 75 yards N.N.E. of the police station and about 73 yards E.S.E. of the present post office. It is marked by a masonry pillar 1 foot high and 32 inches in diameter, containing two mark-stones with ⊙ inscribed on them, one at the upper surface of the pillar and the other at ground level. The pillar is covered with a mound of earth 4 feet high and 6 feet in diameter which is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	25	43	32·96
L	89	56	23·29

No. 83

Sirta s.
(*Mymensingh*) Is about 312 yards N. E. of village so called and 20 yards from a branch of the Brahmaputra river. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24	48	27·72
L	90	23	43·80

No. 142

Name of station, district, description, co-ordinates &c.

Soilábári (new), XXIV.
(*Vide page 6—V.*)

	o	′	″
λ	24	29	48·66
L	89	43	1·12
H	81		
h	39		

No. 26

Sonpácha, V.
(*Vide page 4—V.*)

λ	23	33	13·36
L	89	49	19·11
H	63		
h	38		

No. 3

Subarnakháli Pipal Tree.
(*Mymensingh*)

λ	24	33	20
L	89	52	2

Tepri, XI.
(*Vide page 5—V.*)

λ	23	57	24·45
L	89	54	39·17
H	67		
h	40		

No. 13

Thána Kamál Hát. †
(*Rungpore*) Is marked by two bricks with ⊙ cut on them, one imbedded at ground level and the other 1 foot below it, protected by a masonry pillar 1 foot high and 2 feet square, the centre of which corresponds with the upper mark.

λ	25	34	48
L	89	42	18

Thána Kamál Masjid, †
(*Rungpore*) Spire of centre dome.

λ	25	35	47
L	89	42	29

Name of station, district, description, co-ordinates &c.

Tulsi Char No. 1 s.
(*Mymensingh*) Is in open ground about ¼ a mile S. S. W. of village so called. A hamlet of Tulsi Char is about ¼ of a mile to E., another ¼ a mile S.E., and Doár village is about 282 yards N. N. E. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

	o	′	″
λ	24	53	28·10
L	90	10	0·37

No. 120

Tulsi Char No. 2 s.
(*Mymensingh*) Is in open ground about 246 yards E.N.E. of village so called and ¼ of a mile W.S.W. of Kázi Char village. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24	53	7·33
L	90	11	16·39

No. 122

Tura Chalet.
(*Gáro Hills*) Centre of Captain Williamson's chalet above Tura.

λ	25	30	13·4
L	90	17	15·2
H	3943		

Nos. 77, 78

Ulghi Char s.
(*Mymensingh*) Is on a Char between two branches of the Brahmaputra river, 100 yards S. E. of the main branch and to N. W. of Gobindpur or Ulghi Char village. It is marked by a mound of earth 4 feet high and 6 feet in diameter, covering two bricks with ⊙ engraved on each, one imbedded at ground level and the other 1½ feet below: the mound is surrounded by a ditch 2 feet deep and 2 feet wide.

λ	24	53	11·07
L	90	5	57·85

No. 112

June 1880.

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

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BRAHMAPUTRA SERIES.

OPERATIONS FOR FIXING A NEW STATION IN THE VICINITY OF BANGAON, XV, PRINCIPAL STATION (TOWER).

The District Officer of Mymensingh having reported that the principal station (tower) of Bangaon, XV, was in great danger of being washed away by the encroachments of the river Jamuna, a new station was established on a safer site, by transfer from the old one, with all practicable accuracy, as follows.

The measurements were made in June 1882 by Mr. C. S. Kraal, Assistant Surveyor, No. 6 Party, Revenue Survey, Major S. H. Cowan Assistant Superintendent being in charge, under the orders of Lieut.-Colonel J. Sconce, Deputy Surveyor General. Mr. Kraal used a 7-inch theodolite by Messrs. Troughton and Simms, and a 66-foot chain, the latter having been compared with the standard steel bars immediately before it was used: his signals were, it is understood, suitable opaque objects.

Generally speaking, to the east of Bangaon XV Station and at about 0·8 mile, Mr. Kraal established two stations, the southern or Pillar station and the northern or Prism station, described hereafter. The pillar station is the substitute intended for Bangaon XV, and in order to connect these two, it was required to measure

(1) The base-line from Pillar station to Prism station.

(2) The angles of the triangle Bangaon XV Station, Pillar station, and Prism station.

(3) The azimuth at Bangaon XV Station of Pillar station.

This was done as follows:—

The base-line was chained three times with the following results:—

1st	measurement	= 65·41 chains
2nd	„	= 65·39 „
3rd	„	= 65·35 „
	Mean used	= 65·383 chains = 4315·278 feet and log feet = 3·6350087.

Of the triangle in question, the angle at Pillar station and that at Prism station were measured twice on each of 8 zeros: the mean values will be found stated further on: the third angle of the triangle, *i.e.* at Bangaon XV Station, was not measured.

As regards azimuth, in course of the operations of the Brahmaputra Series the N. W. angle of a castellated turret on a paka building in Nagarpur had been observed at Bangaon XV Station, so that the azimuth of this line was known. Mr. Kraal having identified this turret, ascended the tower at Bangaon XV Station and then measured, once on each of 4 zeros, the angle between the N. W. angle of the turret and Pillar station: the mean value of this angle thus obtained is 23° 3′ 25″ and applied to the azimuth 294° 3′ 33″ of the turret, gives 317° 6′ 58″ as azimuth at Bangaon XV Station of Pillar station; this azimuth and the

latitude and longitude of Bangaon XV Station from page 28—V. were used in computing the coordinates of Pillar station and Prism station hereafter given.

The old tower station on Bangaon XV, was washed away by the Jamuna in July 1882.

No. of Triangle	Station	Angle	Distance		
			Log feet	Feet	Miles
		° ′ ″			
	Bangaon Prism s.	59 52 25	3·634857	4314	0·817
156	„ Pillar „	60 13 6	3·636363	4329	0·820
	„ XV		3·635009	4315	0·817

Name of station with azimuth of surrounding points	No. of triangle giving distance	Name of station with azimuth of surrounding points	No. of triangle giving distance	Name of station with azimuth of surrounding points	No. of triangle giving distance
At Bangaon XV ° ′ ″		At Bangaon Pillar s. ° ′ ″		At Bangaon Prism s. ° ′ ″	
Bangaon Prism s. 257 12 29	156	Bangaon XV 137 7 11	156	Bangaon Pillar s. 17 20 23	156
Bangaon Pillar „ 317 6 58	156	Bangaon Prism s. 197 20 17	156	Bangaon XV 77 12 48	156

Bangaon Pillar station, lat. 24° 4′, long. 89° 52′—observed at in 1882—is the substitute for Bangaon XV Tower Station, washed away by the Jamuna river in July 1882, and is situated about ¾ of a mile east of the left bank of the Jamuna or Brahmaputra river, on the high land in a patch of jungle to the west of and close to the hamlet of Nakhalia, and east of Bangaon village, in mauza Bangaon, thána and pargana Átia, district Mymensingh. The station consists of a stone prism, 3 feet high of which 2 feet are sunk below ground level, having on its upper surface the following inscription $\underset{1882}{\overset{\text{G.T.S.}}{\wedge}}$; the observations were referred to the point of the arrow. The prism is enclosed in a masonry pillar 3 feet square at foundation and 2 feet at top, rising 4 feet in height, around which a mound of earth, rising 2 feet above top of pillar, was raised.

Of Bangaon Pillar station.

λ 24° 4′ 16″·90
L 89 51 41 ·66

Bangaon Prism station, lat. 24° 5′, long. 89° 52′—observed at in 1882—is situated about ¾ of a mile east of the left bank of the Jamuna or Brahmaputra river and about a mile east of the village of Bangaon, on the high *mer* (dividing ridge) between two fields, in thána and pargana Átia, district Mymensingh. It consists of a stone prism as described for the preceding station, and is surrounded by an earthen platform.

Bangaon Prism station.

λ 24° 4′ 57″·71
L 89 51 55 ·54

November, 1882.

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

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° 3′ and 24° 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° 3′ 5″; 24° 7′ 11″; and 29° 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.

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