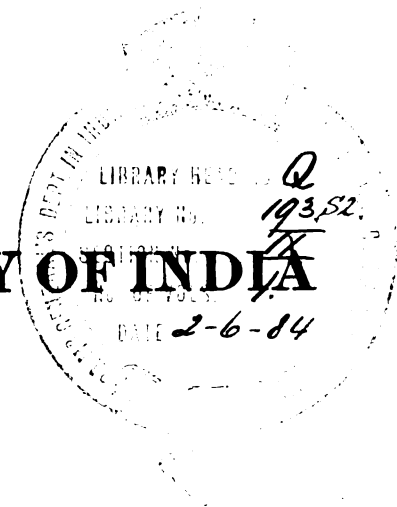


SYNOPSIS OF THE RESULTS OF THE OPERATIONS OF
THE GREAT TRIGONOMETRICAL SURVEY OF INDIA
VOLUME XVII.



DESCRIPTIONS AND CO-ORDINATES
OF THE

PRINCIPAL AND SECONDARY STATIONS AND OTHER FIXED POINTS OF

THE GURWANI MERIDIONAL SERIES

OR SERIES N

AND THE GORA MERIDIONAL SERIES

OR SERIES O

OF THE

NORTH-EAST QUADRILATERAL.

BY LIEUT.-GENERAL J. T. WALKER, C.B., R.E., F.R.S., &c., &c.,
SURVEYOR GENERAL OF INDIA, AND SUPERINTENDENT OF THE TRIGONOMETRICAL SURVEY,
AND HIS ASSISTANTS.



Dehra Dun:

PRINTED AT THE OFFICE OF THE TRIGONOMETRICAL BRANCH, SURVEY OF INDIA.

B. V. HUGHES.

1883.

CONTENTS.



DIAGRAM OF THE NORTH-EAST QUADRILATERAL	Facing title page.
ERRATA ET ADDENDA	v
REFERENCES	vi
PREFACE	vii

GURWANI MERIDIONAL SERIES.

Introduction	iii— <i>N.</i>
Alphabetical List of Principal Stations	1— <i>N.</i>
Numerical do. do.	2— <i>N.</i>
Description of Principal Stations	3— <i>N.</i>
Addendum to Description of Principal Stations	9*— <i>N.</i>
Principal Triangles	9— <i>N.</i>
Secondary Triangles connecting Principal-Auxiliary Stations and Intersected Points	12— <i>N.</i>
„ Jaunpur Series	21— <i>N.</i>
„ Oudh Series	22— <i>N.</i>
Azimuths of Surrounding Stations and Points, at Principal, Principal-Auxiliary and Secondary Stations	23— <i>N.</i>
Co-ordinates and Descriptions of all Stations and Points	32— <i>N.</i>
Supplementary List of Co-ordinates and Description of Stations and Points	47— <i>N.</i>

CHART

GORA MERIDIONAL SERIES.

Introduction	iii— <i>O.</i>
Alphabetical List of Principal Stations	1— <i>O.</i>
Numerical do. do.	2— <i>O.</i>

GORA MERIDIONAL SERIES—(Continued).

	PAGE.
Description of Principal Stations	3—0.
Addendum to Description of Principal Stations	9*—0.
Principal Triangles	9—0.
Secondary Triangles connecting Principal-Auxiliary Stations and Intersected Points ..	12—0.
Azimuths of Surrounding Stations and Points, at Principal, Principal-Auxiliary and Secondary Stations	16—0.
Co-ordinates and Descriptions of all Stations and Points	20—0.
CHART	

ERRATA ET ADDENDA.



PAGE

VII—*N.*

After last para. but one from bottom *Add* Subsequently, in October 1848, a party of the Huriláong Meridional Series determined the course of the Ganges River further eastwards to Chunar. This triangulation was executed by Mr. G. W. Armstrong working on one bank with a 12-inch, and Mr. G. Terry on the other bank with a 7-inch theodolite: it emanated from Bindháchal s. (Ganges River No. 47 s.) and closed on the side Murli h.s. to Chunar Fort Flagstaff; between the finally determined position-values of which the triangulation has been adjusted. Besides fixing the position of some permanent temples and buildings on both sides of the river, the operation also determined several important points in Mirzapur. The results have for convenience been exhibited in the Synoptical Volume of the Gurwáni Meridional Series: they will be found included in the Supplementary Co-ordinate List.

33—*N.* Batawa Building. *Note.*—Since this Volume was passed through the press it has been discovered that this point is identical with Batawa Bungalow in the Supplementary Co-ordinate List, and the data given for Batawa Bungalow on page 47—*N.* are to be preferred as more accurate.

35—*N.* line 1, col. 2 *for* Ganges River No. 7 s. *read* Ganges River No. 7* s.

„ at bottom of page *Add* footnote as follows:—* The preceding portion of this triangulation will be found in the Co-ordinate List of the Karára Meridional Series, Synoptical Vol. XVI.

37—*N.* line 1, col. 2 *for* Ganges River No. 49 s. *read* Ganges River No. 49* s.

„ at bottom of page *Add* footnote as follows: * The continuation of this triangulation will be found in the Supplementary Co-ordinate List, page 48—*N.*

42—*N.* Mirzapur Court House. *Note.*—Since this Volume was passed through the press it has been found that this point is identical with Ganges River No. 55 s. in the Supplementary Co-ordinate List, and the data given on page 48—*N.* are to be preferred as more accurate.

GORA MERIDIONAL SERIES.

20—*O.* in description of Bahradal Hill Mark *for* Dadhi *read* Dúdhi

31—*O.* Rámgarh Temple. *Note.*—Since this Volume was passed through the press it has been discovered that this point is identical with a similarly named point in the Supplementary Co-ordinate List of the Gurwáni Series, and the data as furnished in the latter are to be preferred as being more accurate.

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

March, 1883.

W. H. COLE,

In charge of Computing Office.

P R E F A C E .

The Gurwáni and the Gora Meridional Series are the fifth and the sixth 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. Gurhágárh Meridional Series.
- V. Rahún Meridional Series.
- VI. Jogi-Tíla and Sutlej Series.
- VII. North-West Himalaya Series.

For those forming the South-East Quadrilateral,

- VIII. Great Arc, Section 18° to 24° .
- IX. Jabalpur Meridional Series.
- X. Bider Longitudinal Series.
- XI. Biláspur Meridional Series.
- XII. Calcutta Longitudinal Series.
- XIII. East Coast Series.

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

- XIV. Budhon Meridional Series.
- XV. Rangír Meridional Series.
- XVI. Amua and Karára Meridional Series.

} Already published.

The present is the 17th Synoptical Volume and the fourth of those appertaining to the North-East Quadrilateral; and it has been made to include both the Gurwáni and the Gora Meridional Series, partly because portions of the same districts enter both series and it is therefore convenient to have all the results in one volume, and partly 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 15, 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—*N*. and 2—*N*., and 1—*O*. and 2—*O*., as well as the Names and Descriptions of the Principal Stations of the Gora Series, pages 3—*O*. to 8—*O*., 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 Gurwani Meridional Series has the subscript *N*, and that to the Gora Meridional Series the subscript *O*.

The data given in this volume are the following:—

First (pages 1—*N*., 1—*O*.), 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—*N*., 2—*O*.), numerical lists giving the names corresponding to the numbers.

Third (pages 3—*N*., 3—*O*.), descriptions of the principal stations—of their structure and positions—as taken from the original records of the observations, and supplemented by Addenda (pages 9*—*N*., 9*—*O*.) giving the most recent information of their condition which has been received up to date.

Fourth (pages 9—*N*., 9—*O*.), the angles and sides of the principal triangles, numbered and arranged in order from south to north.

Fifth (pages 12—*N*., 12—*O*.), 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 23—*N*., 16—*O*.), the azimuths of surrounding stations and points, at principal, principal-auxiliary, and secondary stations, the latter arranged in alphabetical order.

Seventh (pages 32—*N*., 20—*O*.), the co-ordinates and descriptions of all stations and points arranged in alphabetical order.

The heights of the stations of the Gurwani Meridional Series depend in the first instance on the finally determined values of the stations of Chapri and Pokra of the Calcutta Longitudinal Series (of the South-East

Quadrilateral), and on the spirit-leveled height of Saibara of the North-East Longitudinal Series, whilst those of the Gora Meridional Series depend on the finally determined values of the stations of Gora and Sewádhi of the Calcutta Longitudinal and on the spirit-leveled height of Gharbaria and on the fixed height of Dharamsingua of the North-East Longitudinal Series. In addition to these fixed heights, the heights of Stations VII, VIII, XXII, XXIV and XXV of the Gurwáni Meridional Series, and the heights of Stations VIII, IX, X, XII, XIV, XV, XVII, XVIII, XX, XXII, XXIV and XXVI of the Gora Meridional Series were determined by the Spirit-leveling Operations of this Branch of the Department, and those of Stations XIX and XXIII of the former series were determined by similar operations of the Revenue Branch. The manner in which the heights of the remaining stations have been made to accord with those above designated, is explained in 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 Lists, commencing on pages 32—*x*. and 20—*o*. respectively.

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 264 triangles for the Gurwáni Meridional Series and of 80 triangles for the Gora Meridional Series, which were selected as most likely to be still in existence and of future use, and the azimuths of all these sides, have been given; but for a number of other points the co-ordinates only have been given. With the aid of Nos. X, XI and XII of the *Auxiliary Tables to facilitate calculations of the Survey Department of India*, Dehra Doon 1868, local surveyors, working on a system of rectangular co-ordinates, can readily transform the spheroidal co-ordinates here given to suit their own requirements.

The Longitudes depend on an astronomically determined value of the longitude of the Madras Observatory, $80^{\circ} 17' 21''$, which was deduced about the year 1815. There has long been reason to believe that this value was about 3' too great; but, pending the final determination of the longitude of the Madras Observatory, it has not been considered desirable to alter the value, which has therefore been maintained up to the present time. An electro-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. $5^{\text{h}} 20^{\text{m}} 59^{\text{s}}.42 = 80^{\circ} 14' 51''.30$. Thus the following precept may be accepted with considerable confidence,—

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

As regards the orthography of Indian names in the present volume. The Alphabetical and Numerical Lists of Principal Stations, at the commencement of the volume, 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 Lists for the North-West Provinces and Oudh. As a general rule the pronunciations of the vowels are as follows:—*a* has a variable sound as in woman, rural, paltry; *á* as in tartan; *í* as in bit; *í* as in ravine; *u* as in bull; *ú* as in rural; *o* as in note; *e* as *a* in say; *au* as *ou* in cloud; *ai* as *i* in ride.

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

PREFACE.

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; 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 Mr. Hennessey, M.A., F.R.S., Major Herschel, B.E., F.R.S., and Mr. Cole, M.A. Major Herschel moreover supervised the Simultaneous Reduction of the North-East Quadrilateral of which these Series form a portion, while the Introductions to them were written by Colonel B. R. Branfill. Great pains have been taken to secure the utmost accuracy in preparing the data and passing them through the press.

(for GENERAL J. T. WALKER)

DEHRA DUN, }
 March, 1883. }

J. B. N. HENNESSEY,
Offg. Dy. Surveyor General,

In charge Great Trigonometrical Survey of India.

GURWANI MERIDIONAL SERIES.

GURWANI MERIDIONAL SERIES—(LONG. 82° 20').

INTRODUCTION.

In the Autumn of 1844 the Hon'ble Court of Directors of the East India Company expressed a desire that the Gurwani Meridional Series, the next in order east of the Karára Meridional Series, should be taken up and completed as soon as possible, together with the other alternate series adjacent, which had been omitted, or purposely deferred in the first instance, as these series were now urgently needed for the completion of the Atlas of India.

Accordingly in August 1845, when reporting the completion of the Karára Series, the Surveyor General, then Captain A. S. Waugh, Bengal Engineers, stated to the Government that he purposed employing the two parties that had been engaged in that work, upon the Gurwani and the East Coast Series, assigning the former to the party under Captain J. S. Du'Vernet.

The Series was begun towards the end of 1845, and successfully brought to a conclusion in two seasons by the 24th of May 1847 by this officer and his assistants.

The Gurwani Meridional Series was so called because it was carried along the meridian of Gurwani Hill Station (of the Calcutta Longitudinal Series), at which the initial Azimuth of the Series was observed. Its linear and other geodetic values were derived in the first instance from those of the side Chapri-Pokra of the Calcutta Longitudinal Series, in the Native State of Rewah (Lat. 24° 19'), whence it extends northwards in a single series of thirty-two triangles along the meridian of 82° 20' to the side Saibara-Bansídila of the North-East Longitudinal Series in the Gonda district of Oudh, N.W. Provinces, in Lat. 27° 26', a total distance of 211 miles, traversing the districts of Mirzapur, Allahabad, Jaunpur, Partabgarh, Sultanpur, Fyzabad, and Basti. The six southernmost stations lie in the hilly tract of the Kaimúr range and its outliers south of the Ganges midway between Allahabad and Mirzapur, about the Son (Soane) river.

The rest of the Series lies wholly in the plains for about 160 miles, crossing the rivers Ganges, Gumti, and Gogra (Ghágra), and consists of 26 tower stations averaging 25 feet in height, the rays between each pair of which required to be laboriously traced and cleared.

Concurrently with the principal triangulation a great many secondary stations and landmarks were fixed, and many villages and points of a tertiary order determined for topographical or geographical purposes.

The positions of the important towns of Allahabad, Mirzapur, Jaunpur, Fyzabad, and Oudh (Ajodhya) were determined, the course of the river Ganges laid down for a distance of

95 miles, and some years subsequently that of the Gogra or Sarju for about 70 miles in a direct line.

Having suffered severely from jungle fever, contracted whilst finishing the northern part of the Karára Series, Captain Du'Vernet was sent away on sick leave to the Mussooree Hills for three months during the recess of 1845, and only returned to the Surveyor General's head quarters at Allahabad on 15th September when he received charge of the Gurwáni Series. Before the end of the month he had despatched his assistants to com-

Season 1845-46.

PERSONNEL.

Captain J. S. Du'Vernet, 1st Assistant.
Mr. J. Mulheran, Senior 1st Class Sub-Assistant.
" W. Glynn, Junior " "
" F. C. Blewitt, 3rd Class "

mence the preliminary operations, but he himself remained in the Surveyor General's Office at Allahabad on account of his health till the middle of October. Meanwhile the Surveyor General proceeded with a portion of the party to Sora T.S. of the Karára Meridional Series; here he observed an astronomical Azimuth and took a series of observations to test the merits of the 18-inch theodolite by Saiyad Mir Mohsin† in use with this party, which shewed that the angles measured with this instrument were liable to peculiar errors, apparently of graduation, to eliminate which needed special precautions.

On the 18th October Captain Du'Vernet proceeded to superintend the laying out of the Gurwáni Series, and by the middle of December the approximate series throughout the hilly tract being complete, commenced the final observing by taking an astronomical Azimuth at Gurwáni, which was successfully finished by the 2nd of January 1846. He then proceeded to observe at the undermentioned hill stations in the following order:—Chapri (XXIX)*, Pokra (XXXI)*, Murchia (I), Kasda (II), Jamaura (III), Katra (IV), Tikor (V), and Meja (VI), completing the Series south of the Ganges by the 9th March, after which he connected the secondary series for laying down the course of the river between Allahabad and Mirzapur, and then continued the final observations at the following tower stations, north of the river:—Baripur (VII), Ganeshpur (VIII), Marár (XI), Seona (IX), and Birua (X), taking a set of star observations for Azimuth at Marár, between the 3rd and 19th of April, after which he went into recess quarters at Allahabad on the 5th of May.

The out-turn of work completed this first season consisted of eleven new principal stations (five of them towers) selected, built, and finally observed at; extending the Series to Marár (XI) 94 miles north of its origin by a single series of 11 large symmetrical triangles, two astronomical Azimuths, and a large proportion of secondary triangulation, which will be noticed in detail hereafter.

The principal observations hitherto, were made with Saiyad Mir Mohsin's 18-inch theodolite† which Captain Du'Vernet had previously used in the North-East Longitudinal, and in the Karára Series. But in view of the liability to error detected in this instrument, abovementioned, it was now discarded and has not again been used.

Before taking the field for the ensuing season 1846-47, the 24-inch theodolite (No. 1) designed by Captain Waugh‡, with five horizontal micrometers instead of three, was issued for

* Of the Calcutta Longitudinal Series.

† For a description of this instrument see page 67 of the Appendices to Vol. II.

‡ For a description of this instrument see pages 55 to 57 of the Appendices to Vol. II.

use, and all the remaining principal angles of the Gurwáni Series were measured by it; and, although more than half the former season's triangulation lay in the hills, whilst that of the next season lay in the plains, with tower stations throughout, and presumably worse rays and signals, the average triangular error was reduced from 2".2 to 1".3.

The party took the field about the middle of October, and, leaving the big theodolite in store at Allahabad, proceeded to complete the approximate series, from the point at which the principal observations had been concluded the previous season. This proved a more difficult task than had been anticipated, owing to the swampy and wooded state of the country. The clearing of each 11- or 12-mile ray occupied nearly a week, an unusually slow rate of progress for the Officers engaged on

Season 1846-47.
PERSONNEL.
Captain J. S. Du'Vernet, 1st Assistant.
Mr. J. Mulheran, 1st Class Sub-Assistant.
" T. Olliver, " (vice
" W. Glynn resigned).
" F. C. Blewitt, 3rd Class "

this Series; but with perseverance, good arrangements, and good fortune, the towers were built, and the rays cleared in time for the principal observations to be begun soon after the middle of February 1847.

Captain Du'Vernet himself took part in the approximate series, working northwards until the Series was well advanced towards its terminus, when he retraced his steps about the middle of December, inspecting the tower-building and ray-clearing in progress, on his way to get the big theodolite, with which he returned to Bisaul (XXIII), his first station for the final observations, by the middle of January. Here he observed an astronomical Azimuth to λ Ursæ Minoris at both elongations, between 20th January and the 5th of February. This done, he took up the final observations to the northward first, in the district of Gonda, in order to get away from that unhealthy part of the country as early as possible, and completed the work with the 24-inch theodolite at the undermentioned tower stations as follows:—

at Bisaul	(XXIII)	between	January	19th	and	February	23rd
„ Kumeria	(XXV)	„	February	26th	„	March	3rd
„ Sabanjot	(XXVII)	„	March	4th	„	„	6th
„ Mánapára	(XXIX)	„	„	8th	„	„	13th
„ Bansídíla	(XLV)†	„	„	14th	„	„	15th
„ Saibara	(XLIII)†	„	„	16th	„	„	17th

the two last forming the terminal side of this Series on the north. He now returned southwards and continued the final observing without interruption, as follows:—

at Gurúnagar	(XXX)	between	March	19th	and	March	21st
„ Kopa	(XXVIII)	„	„	22nd	„	„	24th
„ Mánapára	(XXIX)	„	„	25th	„	„	26th (second visit)
„ Tikeria	(XXVI)	„	„	27th	„	„	30th
„ Orejhár	(XXIV)	„	April	1st	„	April	4th

† Of the N.E. Longitudinal Series.

at Bisaul	(XXIII)	between April	7th	and April	9th	(second visit)
„ Ráhet	(XXII)	„	10th	„	11th	
„ Nansa	(XXI)	„	12th	„	13th	
„ Rarauli	(XX)	„	18th	„	20th	
„ Sirwára	(XVIII)	„	21st	„	May 2nd	
„ Dopáp	(XVII)	„	May 3rd	„	6th	
„ Newa	(XVI)	„	7th	„	9th	
„ Saifabad	(XV)	„	10th	„	14th	
„ Parípura	(XIV)	„	15th	„	17th	
„ Newáda	(XIII)	„	18th	„	19th	
„ Rámapura	(XII)	„	19th	„	21st	
„ Marár	(XI)	„	22nd	„	23rd	
„ Birua	(X)	„	23rd	„	25th	

This was an uncommonly good season's work consisting of twenty-one tower stations in a low, flat, and swampy country, forming a single chain of triangles by which the Series was carried to its terminus, a distance of 120 miles on the meridian, covering an area of some 1200 square miles of thickly inhabited country, besides a large amount of secondary triangulation by which the position of a great number of places was duly fixed*.

On the completion of the Simultaneous Reduction of the North-East Quadrilateral, it was found that the following errors had been actually dispersed over the Gurwáni Series, between its origin Chapri-Pokra of the Calcutta Longitudinal Series, and its terminus, Saibara-Bansídíla of the North-East Longitudinal Series:—

In Logarithm of the side	— 0·000016 2,2 = — 2·38 inches per mile.
„ Azimuth	„ + 1"·317
„ Latitude of Bansídíla	— 0·312
„ Longitude	„ — 0·210

The heights of the Gurwáni Series were computed in the first instance from the trigonometrical values of the side of origin Chapri-Pokra northwards to the terminal side Saibara-Bansídíla. Subsequently, the height above mean sea level of eight stations of the Series (VII, VIII, XIX, XXII, XXIII, XXIV, XXV, and Saibara) was determined by the spirit-leveling operations of the department; these shew that the trigonometrical height of Barípur (VII) was erroneous by — 10·2 feet, that of Kumeria (XXV) by — 13·2 feet (the maximum cumulative error disclosed throughout the Series, 211 miles in length), and that of the closing station Saibara by — 11·6.

The largest error detected here by the spirit-leveling, on any line between adjacent stations, amounted in one instance (between Barípur and Ganeshpur) to 5·3 feet.

The actual corrections which were made eventually to the trigonometrical heights of the thirty-two stations of the Series, to make them correspond with the spirit-leveled values, averaged 5 feet to each of the eight southernmost stations, extending for a distance of 68

* "Thus finishing the Gurwáni Series in the unprecedented short space of two seasons—a brilliant achievement reflecting the highest credit on Captain Du'Vernet and his party". Quotation from Surveyor General's Progress Report for the year ending 1st October 1847.

miles from the side of origin to the first spirit-leveled check, and 3 feet to each of the remaining twenty-four stations, extending over a distance of 143 miles, checked by spirit-leveled points at intervals of 70, 32, and 41 miles, up to the terminal station, Saibara. For further particulars regarding this dispersion of error in the trigonometrical leveling, see page 39 of Part I of Volume VII of the *Account of the Operations of the Great Trigonometrical Survey of India*.

Secondary Triangulation.

A very large amount of secondary triangulation was done by the Gurwáni Series party, especially in the hilly tract to the south of the Ganges, and in the populous districts of Allahabad, Mirzapur and Jaunpur.

In the *first* place a great number of points were observed by Captain Du'Vernet with the large theodolite from the hill stations, whilst conducting the operations in 1845-46, south of the Ganges, supplemented by observations made at the points with a small theodolite. This fixed amongst others the position of Mirzapur Church.

Secondly. A great extension of the secondary triangulation was made, especially on the west flank, by Mr. Mulheran with a 12-inch theodolite, in the tract of country above mentioned.

Thirdly. The ray-trace surveys were utilized for determining the landmarks and places that were observed *en route*.

Fourthly. A minor series was carried from Birua T.S. (X) to Allahabad by Mr. Mulheran with a 12-inch theodolite, for the purpose of determining the position of a number of new points or landmarks in and about Allahabad, in addition to those which had already been laid down from the two adjacent principal stations of the Karára Series, Bagála and Singraur. As the stations of this triangulation were not permanently marked and are therefore not likely now to be found, the usual details of the triangles are not published, but only the latitudes and longitudes of the stations and permanent points whose positions were determined.

Fifthly. A ray-trace triangulation was carried during the recess season of 1846 by Mr. Mulheran with a 12-inch theodolite, a distance of 22 miles, from Allahabad Church to Bagála T.S., along the river Jumna; this also checked a number of points which had been previously observed by Captain Shortrede, whilst conducting the final operations of the Karára Series, in the account of which series, mention of this work is made.

Sixthly. A minor series was carried in 1845-46 by Mr. Glynn with a 12-inch theodolite, a distance of 50 miles in a direct line, along the river Ganges, fixing 95 miles of its tortuous course, from Mirzapur to Jhúsi (at the junction of the rivers Ganges and Jumna), which, with another point (Moia), had also been determined by triangulation appertaining to the Karára Series.

Seventhly. A ray-trace triangulation was run along the river Ganges from Allahabad Church to Singraur T.S., both belonging to the Karára Meridional Series, in the account of which this work will be found mentioned. It was done by Mr. Glynn with a 12-inch theodolite in August 1846.

So far the abovementioned secondary work was done in the season of 1845-46, Messrs. Mulheran and Glynn remaining in the field during the summer recess of 1846.

As but few points could be observed directly from the principal stations in the plains to the north of the Ganges, and the entire strength of the party was concentrated on the principal triangulation, the amount of secondary points fixed during the second season is far below that of the first season's work; nevertheless the chief towns and villages in the vicinity of the principal stations were fixed, and the secondary operations may be summarized as follows, consecutively with those before mentioned.

Eighthly. As soon as his work on the approximate series was finished, Mr. Mulheran carried a minor series with a 12-inch theodolite, 27 miles eastward from the side Marár-Newáda of the main series, to Jaunpur, by which a number of permanent buildings in and about that city were fixed.

Ninthly. Some minor triangulation was done, principally with a 7-inch theodolite, in and about the ancient city of Oudh (Ajodhya) and its modern successor Fyzabad, by which the chief landmarks were fixed, and also some buildings along the banks of the river Gogra or Sarju.

Tenthly. For topographical purposes, the position of 257 villages was determined in the course of the two seasons' work under notice, by observations made to them with the theodolite from one station, the distance being measured by the perambulator. As these determinations were only approximate they do not find a place in the Synoptical Volume of this Series.

In addition to the foregoing, an extensive chain of minor triangles appears on the chart of the Series along the river Gogra. This minor triangulation crosses the Gurwáni Series along the side Bisaul-Orejhár (XXIII-XXIV) with which it is connected. It was done six years subsequently, in 1852-53, by Mr. Belletty with a 12-inch theodolite and a party detached from the Huriláong Series. The details of this work (the Gogra Minor Series), between its stations No. 113 and No. 165 are now published as a portion of the Gurwáni Series, after having been adjusted to fit in duly between the adopted position-values of the undermentioned principal stations, as follows:—

Nos. 113 to 135 between Barhiáchak of the Gora Series (the next meridional series to the eastward) and Bisaul of this (the Gurwáni) Series; Nos. 136 to 142 between Bisaul and Orejhár, both of this Series; and finally, Nos. 143 to 165, forming a part of the section fitted in between Orejhár and Mási of the N. E. Longitudinal Series.

June 1881.

B. R. BRANFILL.

GURWANI MERIDIONAL SERIES.

ALPHABETICAL LIST OF STATIONS.

Bansídíla (of North-East Longitudinal Series).	XLV.	Murchía	I.
Barípúr	VII.	Nansa	XXI.
Birna	X.	Newa	XVI.
Bisaol	XXIII.	Newáda	XIII.
Chapri (of Calcutta Longitudinal Series).	XXIX.	Orájar	XXIV.
Dopáp	XVII.	Parípúra	XIV.
Ganespúr	VIII.	Pokra (of Calcutta Longitudinal Series).	XXXI.
Gurunagar	XXX.	Ráhet	XXII.
Jamaora	III.	Rámápúra	XII.
Kaprádi	XIX.	Raraoli	XX.
Kasda	II.	Sabánjot	XXVII.
Katra	IV.	Saibara (of North-East Longitudinal Series).	XLIII.
Kopa	XXVIII.	Saifábád	XV.
Kumería	XXV.	Seona	IX.
Mánápára	XXIX.	Sirwára	XVIII.
Marár	XI.	Tikería	XXVI.
Mega	VI.	Tikor	V.

GURWANI MERIDIONAL SERIES.

NUMERICAL LIST OF STATIONS.

XXIX	.	.	.	.	Chapri. (of Calcutta Longitudinal Series).	XVI	.	.	.	.	Newa.
XXXI	.	.	.	.	Pokra. (of Calcutta Longitudinal Series).	XVII	.	.	.	.	Dopáp.
I	.	.	.	.	Murchía.	XVIII	.	.	.	.	Sirwára.
II	.	.	.	.	Kasda.	XIX	.	.	.	.	Kaprádi.
III	.	.	.	.	Jamaora.	XX	.	.	.	.	Raraoli.
IV	.	.	.	.	Katra.	XXI	.	.	.	.	Nansa.
V	.	.	.	.	Tikor.	XXII	.	.	.	.	Ráhet.
VI	.	.	.	.	Mega.	XXIII	.	.	.	.	Bisaol.
VII	.	.	.	.	Barípúr.	XXIV	.	.	.	.	Orájar.
VIII	.	.	.	.	Ganespúr.	XXV	.	.	.	.	Kumería.
IX	.	.	.	.	Seona.	XXVI	.	.	.	.	Tikería.
X	.	.	.	.	Birna.	XXVII	.	.	.	.	Sabánjot.
XI	.	.	.	.	Marár.	XXVIII	.	.	.	.	Kopa.
XII	.	.	.	.	Rámápúra.	XXIX	.	.	.	.	Mánápára.
XIII	.	.	.	.	Newáda.	XXX	.	.	.	.	Gurunagar.
XIV	.	.	.	.	Parípúra.	XLV	.	.	.	.	Bansídíla. (of North-East Longitudinal Series).
XV	.	.	.	.	Saifábád.	XLIII	.	.	.	.	Saibara. (of North-East Longitudinal Series).

GURWANI MERIDIONAL SERIES.

DESCRIPTION OF PRINCIPAL STATIONS.



Of the 30 Principal Stations composing this Series, the 6 southernmost, as also the 2 initial stations, are on hills: each consists either of a solid platform (of rubble stone and earth) varying in height from 3 to 8 feet and carrying a mark at the upper surface corresponding with one or more marks below, or of a circular tower (of rubble stone and earth) enclosing a central solid pillar in which are inserted several mark-stones each carrying a circle and centre adjusted in the normal of the lowest which is at the base of the pillar. When the Series entered on the plains, suitable artificial elevations had to be constructed, as usual, to admit of overlooking the curvature of the earth. Each of these structures consisted of a circular earthen tower of about 20 feet diameter at base and 16 feet diameter at top, enclosing a central solid pillar of masonry. The pillars consisted of rectangular blocks of masonry about 8 or 10 feet in height, surmounting one another, each succeeding block being contracted, so as to leave a plinth of some 6 inches around its base: the uppermost block, for the theodolite to stand on, was made cylindrical; it had a diameter of about $3\frac{1}{2}$ feet and was surrounded by a hollow annulus, so that it stood isolated from the tower on which the observatory tent was erected. In respect to mark-stones with the usual circle and central dot engraved, each pillar had one on its summit, besides generally another in its base, with one or more in addition fixed intermediately: also pairs of lines, intersecting one another in the normal through these central dots, were cut on the plinths or on the faces of the pillar, to provide the means of recovering the position of a dot in case of injury to the mark-stone on which it was engraved. An earthen staircase 4 feet wide and extending some 30 feet around the tower gave access to its summit, and the structure was further supported by a buttress of loose earth carried up to rather more than half its height.

The following descriptions have been compiled from those given in the MS. General Report and other original records of this Series, supplemented in respect to the neighbouring villages by information obtained from the Revenue and Topographical Survey maps of the country traversed. The information as to the local subdivisions 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.

XXIX.—(*Of the Calcutta Longitudinal Series*). Chapri Hill Station, lat. $24^{\circ} 19'$, long. $82^{\circ} 16'$ —observed at in 1828, 1846 and 1865—is on a small hill about $1\frac{1}{2}$ miles S.W. of the village of Chapri: taluka Singrauli of the Rewah territories.

The pillar is solid and contains two marks, the upper 3.25 feet above the lower which is engraved on the rock *in situ*, having been placed there in 1828. The station was revisited in 1846 for the purpose of originating the Gurwani Meridional Series when no alteration appears to have been made. On again visiting it in 1865, the upper mark-stone of the former station was found undisturbed, but a new pillar was then built to the same height as before. The distances and bearings of the surrounding villages are:—Charki, 1 mile S.E.; Kanauli, $2\frac{1}{2}$ miles S.S.W.; Marua, nearly 3 miles N.W. by W.; and Khursa, $2\frac{1}{2}$ miles N. by W.

XXXI.—(*Of the Calcutta Longitudinal Series*). Pokra Hill Station, lat. $24^{\circ} 19'$, long. $82^{\circ} 31'$ —observed at in 1828, 1846 and 1865—is on a conspicuous peak in the midst of a mass of hills densely covered with forest, and distant about 2 miles N.W. of the small village of Pokra: taluka Bardi of the Rewah territories.

The pillar is solid and contains two marks, the upper 2.92 feet above the lower which is engraved on a square cut stone imbedded in the earth. The station was revisited in 1846 for the purpose of originating the Gurwani Meridional Series, but no alteration in construction appears to have been then made. On again visiting it in 1865, the mark-stone of the former station was found undisturbed, but a new pillar was then built to the same height as before. The distances and bearings of the surrounding villages are:—Pariasi, about $1\frac{1}{4}$ miles S.; Garwani, $3\frac{1}{4}$ miles N.W.; and Pachwar, $1\frac{1}{4}$ miles N.E.

I. Murchia (*Murchia*) Hill Station, lat. $24^{\circ} 35'$, long. $82^{\circ} 23'$ —observed at in 1846—is situated on a rocky eminence (so called) of the Kaimur range which overhangs the Son river and forms its northern watershed; it stands on the lands of the village of Jerauha: pargana Rewah of the Rewah territories.

The station consists of a platform (of rubble stone and earth) 8.2 feet high and about 14 feet in diameter; it has a mark engraved on the rock *in situ*, a mark-stone fixed in its upper surface, and two others inserted in it at 6.8 and 7.7 feet respectively above the lowest mark. The distances and bearings of adjacent places are:—Parsia, from which there is an easy road to the station, about 3 miles N.; Khairi-Ghat, the only pass in this vicinity which is practicable for laden animals, $1\frac{1}{4}$ miles W.N.W.; and Dhakor village, $1\frac{1}{4}$ miles S. by E.

II. Kasda Hill Station, lat. $24^{\circ} 34'$, long. $82^{\circ} 39'$ —observed at in 1846—is situated on a rocky eminence of the Kaimur range which overhangs the Son river and forms its northern watershed: tahsil Bardi of the Rewah territories.

The station consists of a platform (of rubble stone and earth) 9 feet high and 14 feet in diameter; it has a mark engraved on the rock *in situ*, a mark-stone fixed in its upper surface, and two others inserted in it interdiately. The distances and bearings of the surrounding villages are:—Bara, $1\frac{1}{4}$ miles S.S.W.; Keotili, $2\frac{1}{4}$ miles E.; Kasda W.N.W., $1\frac{1}{4}$ miles; and Jhondawal, about $5\frac{1}{4}$ miles N.N.E.

III. Jamaura (*Jamaura*) Hill Station, lat. $24^{\circ} 54'$, long. $82^{\circ} 30'$ —observed at in 1846—is situated on high ground distant about $1\frac{1}{4}$ miles E.N.E. of the village of Jamaura: thana Lalganj, tappa Upraudh, tahsil and district Mirzapur.

The station consists of a platform (of rubble stone and earth) 8 feet high and about 14 feet in diameter: it has a mark-stone at top, and two others at 2.2 and 3.6 feet respectively below it. The distances and bearings of surrounding villages are:—Ghura Khand, $2\frac{1}{4}$ miles W.; and Burshon, 2 miles E.

IV. Katra Hill Station, lat. $24^{\circ} 51'$, long. $82^{\circ} 12'$ —observed at in 1846—is situated on the heights 3 miles S. of the village of Katra sometimes also called Drummondganj; thana Lalganj, tappa Upraudh, tahsil and district Mirzapur.

The station consists of a circular tower of rubble stone and earth 16 feet in diameter, enclosing a central isolated pillar 6 feet high (of the same materials) having a mark-stone at top, and others at 3.8 and 5.3 feet respectively above the lowest mark which is engraved on the rock *in situ*. The distances and bearings of surrounding villages are:—Bhesaund, $1\frac{1}{4}$ miles E.N.E.; Lohriadar, $2\frac{1}{4}$ miles W. by N.; and Karampur, $2\frac{1}{4}$ miles S. by E.

V. Tikor Hill Station, lat. $25^{\circ} 4'$, long. $82^{\circ} 22'$ —observed at in 1846—is situated on one of the low heights $\frac{1}{4}$ of a mile S.W. by W. of the village of Tikor: thana Bindhachal, tappa Chhianue, tahsil and district Mirzapur.

The station consists of a circular tower (of rubble stone and earth)—with diameters at top and bottom, respectively, of 18 and 22 feet—enclosing a central solid pillar of masonry having a mark-stone at its base, and others at 6, 12 and 16 feet respectively above it. The distances and bearings of surrounding villages are:—Dhuri, 1 mile W. by S.; Neoriha, 1 mile S. by E.; and Mara or Manda, $3\frac{1}{4}$ miles N.W. by W.

VI. Meja (*Mega*) Hill Station, lat. $25^{\circ} 7'$, long. $82^{\circ} 9'$ —observed at in 1846—is situated on a low height about $1\frac{1}{4}$ miles S. of the town of Meja, in the lands of the village of Basaira from which it is distant 2 miles N.: thana and tahsil Meja, pargana Khairagarh, district Allahabad.

The station consists of a platform (of rubble stone and earth) 8.2 feet high and 18 feet in diameter: it has a mark-stone at top, and others at 1.6 and 3 feet respectively below it. The distances and bearings of surrounding villages are:—Gunaigharpur, $2\frac{1}{4}$ miles N.N.E.; and Siki, $2\frac{1}{4}$ miles S.W.

VII. Baripur (*Barípúr*) Tower Station, lat. $25^{\circ} 17'$, long. $82^{\circ} 20'$ —observed at in 1846—is situated at 250 yards from the N. bank of the Ganges, and about $\frac{1}{4}$ a mile E. of the village of Baripur Khás: thána Sháhganj, tahsíl Korh, pargana Bhadoli, district Mirzapur.

The station consists of an earthen tower enclosing a central solid pillar of masonry 30 feet high which has a mark-stone at top, another at bottom, and others at 10, 19 and 27 feet respectively above the latter. The distances and bearings of surrounding villages are:—Baripur Náripur, on the N. bank of the Ganges, $1\frac{1}{4}$ miles W. by S.; Phútwaría, $\frac{3}{4}$ mile E.; and Bankat Khás, $1\frac{1}{4}$ miles N.E.

VIII. Ganeshpur (*Ganespúr*) Tower Station, lat. $25^{\circ} 20'$, long. $82^{\circ} 8'$ —observed at in 1846—is situated on a spot elevated about 10 feet above the level of the surrounding country, close to and S.E. of the village of Ganeshpur: thána Handia, pargana Kiwái, district Allahabad.

The station consists of an earthen tower enclosing a central solid pillar of masonry 30 feet high which has a mark-stone at top, another at bottom, and others at 10, 19 and 27 feet respectively above the latter. The distances and bearings of surrounding places are:—The old fort of Amlauti, $3\frac{3}{4}$ miles E. by S.; Misrain, $1\frac{1}{4}$ miles N.N.E.; and Dumduma, 1 mile S.S.W.

IX. Seona Tower Station, lat. $25^{\circ} 28'$, long. $82^{\circ} 19'$ —observed at in 1846—is situated on a spot elevated about 12 feet above the level of the surrounding country, and distant 200 yards W. of village of Seona: thána and tahsíl Handia, pargana Mah, district Allahabad.

The station consists of an earthen tower enclosing a central solid pillar of masonry 23 feet high which has a mark-stone at top, another at bottom, and others at 8, 15 and 21 feet respectively above the latter. The distances and bearings of surrounding places are:—The town of Kiwái, $4\frac{1}{4}$ miles S.E.; Ghulwa, $\frac{1}{2}$ mile W. by S.; Kundi, 1 mile E.; and Misrúr, $\frac{1}{4}$ mile S.

X. Birua (*Birna*) Tower Station, lat. $25^{\circ} 31'$, long. $82^{\circ} 7'$ —observed at in 1846 and 1847—is situated on a mound of saltpetre works elevated about 10 feet above the plain, and is nearly $\frac{1}{4}$ a mile N. W. of Birua or Pír Kázi village: thána Phúlpur, pargana Sikandra, district Allahabad.

The station consists of an earthen tower enclosing a central solid pillar of masonry 30 feet high which has a mark-stone at top, another at bottom, and others at 10, 19 and 27 feet respectively above the latter. The distances and bearings of surrounding places are:—Mustafabad village, $1\frac{1}{2}$ miles W.; Mápúra village, $1\frac{1}{4}$ miles E. by N.; and Phúlpur town, about $2\frac{1}{4}$ miles N.E. by N.

XI. Marár Tower Station, lat. $25^{\circ} 41'$, long. $82^{\circ} 17'$ —observed at in 1846 and 1847—is situated on a mound elevated about 60 feet above the level of the surrounding plain, and is distant about 350 yards N.E. of the village of Marár Díh: thána Mungra Bádsháhpur, tahsíl Machlishahr, pargana Mungra, district Jaunpur.

The station consists of an earthen tower enclosing a central solid pillar of masonry 19 feet high which has a mark-stone at top, another at bottom, and others at 7, 13 and 18 feet respectively above the latter. The distances and bearings of surrounding places are:—Rámnagar village, $2\frac{1}{4}$ miles W.N.W.; Naráinpur village, $1\frac{1}{2}$ miles N.E.; Umrganj village, 1 mile E. by S.; and the town of Bádsháhpur, 3 miles S.W.

XII. Rámápúra (*Rámápúra*) Tower Station, lat. $25^{\circ} 45'$, long. $82^{\circ} 8'$ —observed at in 1847—is situated on an ancient village site elevated about 13 feet above the level of the surrounding country, and about $\frac{1}{4}$ a mile N. of the village of Rámápúra: thána Rániganj, tahsíl Patti, district Partabgarh.

The station consists of an earthen tower enclosing a central solid pillar of masonry 30 feet high which has a mark-stone at top, another at bottom, and others at 14, 19 and 22 feet respectively above the latter. The distances and bearings of surrounding villages are:—Kaulapur, $\frac{1}{4}$ mile N. by E.; Bhawánigarh, $1\frac{1}{4}$ miles S. by W.; and Gaura, $1\frac{1}{4}$ miles E. by S.

XIII. Newáda Tower Station, lat. $25^{\circ} 50'$, long. $82^{\circ} 18'$ —observed at in 1847—is situated at about $\frac{1}{4}$ mile S. W. of the village of Newáda, and stands at a distance of about 1 mile S. of the old fort of Dáúdpur: thána and tahsíl Patti, district Partabgarh.

The station consists of an earthen tower enclosing a central pillar of masonry 24 feet high which has a mark-stone at top, another at bottom, and others at 8 and 16 feet respectively above the latter. The distances and bearings of surrounding places are:—Kotani village, $\frac{1}{4}$ mile E.S.E.; Bábuganj village, $\frac{3}{4}$ mile S.E.; and the town of Bhadeora, about $4\frac{1}{4}$ miles N.W. by W.

XIV. Parípura (*Partpúra*) Tower Station, lat. $25^{\circ} 55'$, long. $82^{\circ} 9'$ —observed at in 1847—is situated on the bank of a tank in the lands of the village of Parípura; it stands at a distance of about 2 miles N.N.E. of the great bend in the Sai river, and $\frac{1}{4}$ mile S. of the high road from Patti to Partabgarh: thána and tahsíl Patti, district Partabgarh.

The station consists of an earthen tower enclosing a central solid pillar of masonry 20 feet high which has a mark-stone at top, another at bottom, and others at 8 and 16 feet respectively above the latter. The distances and bearings of surrounding places are:—Jaisingarh fort, 1 mile S.E.; Khojikalán village, 1 mile S.W. by W.; and Púra Pande village, about $\frac{1}{4}$ mile N.N.W.

XV. Saifabad (*Saifábád*) Tower Station, lat. $26^{\circ} 1'$, long. $82^{\circ} 19'$ —observed at in 1847—is situated on the N. E. angle of an old fort in the lands of the village of Saifabad, and is elevated about 27 feet above the level of the surrounding country: thána and tahsíl Patti, district Partabgarh.

The station consists of an earthen tower enclosing a central solid pillar 12 feet high which has a mark-stone at top, another at bottom, and a third at 4 feet above the latter. The distances and bearings of surrounding villages are:—Dhansar, $\frac{1}{4}$ mile E.S.E.; Jehanabad, nearly 1 mile N.W.; and Naurangabad, $\frac{1}{4}$ mile N. by W.

XVI. Newa Tower Station, lat. $26^{\circ} 6'$, long. $82^{\circ} 10'$ —observed at in 1847—is situated in the vicinity of the village of Newa, and stands on a site elevated about 10 feet above the level of the surrounding country which is much intersected by tanks and swamps: thána Lamhwa, tahsíl Kádipur, pargana Chánda, district Sultanpur.

The station consists of an earthen tower enclosing a central solid pillar of masonry 26 feet high which has a mark-stone at top, another at bottom, and others at 8, 16 and 24 feet respectively above the latter. The distances and bearings of surrounding villages are:—Sheogarh, 1 mile E.N.E.; Sansáripur, about $\frac{1}{4}$ mile N.W.; and Kaithapur, nearly $1\frac{1}{4}$ miles S. by E.

XVII. Dopáp Tower Station, lat. $26^{\circ} 11'$, long. $82^{\circ} 19'$ —observed at in 1847—is situated in the village of Dopáp, and stands in the centre of an old ruined fort, the eastern face of which is washed by the Gumti river: thána Lamhwa, pargana Chánda, district Sultanpur.

The station consists of an earthen platform enclosing a central solid pillar of masonry 24 feet high which has a mark-stone at top, another at bottom, and others at 8 and 16 feet respectively above the latter. The distances and bearings of surrounding villages are:—Lotia, $\frac{1}{4}$ mile S. by E.; Mungapur, nearly 1 mile W.; and Sukhauli, about a mile N.N.W.

XVIII. Sirwára Tower Station, lat. $26^{\circ} 16'$, long. $82^{\circ} 10'$ —observed at in 1847—is situated at rather less than half a mile S.E. of the village of Sirwára, and stands on the W. side of a small tank distant about $\frac{1}{4}$ mile from the left bank of the Gumti river: thána and tahsíl Sultanpur, pargana Baraunsa, district Sultanpur.

The station consists of an earthen tower enclosing a central solid pillar of masonry 28 feet high which has a mark-stone at top, another at bottom, and others at 8, 16, 20 and 24 feet respectively above the latter. The distances and bearings of surrounding places are:—The minarets of Sultanpur, $2\frac{1}{4}$ miles W.N.W.; Bhíkapur temple, $\frac{1}{4}$ mile S.W.; Fatehpur village, nearly 1 mile E.; and Itkauli village, about 1 mile N. by E.

XIX. Kapradi (*Kaprádi*) Tower Station, lat. $26^{\circ} 22'$, long. $82^{\circ} 19'$ —observed at in 1847—is situated at $\frac{1}{4}$ mile S. E. of the village of Kapradi, and stands on the site of an ancient village which is elevated about 16 feet above the level of the surrounding country: thána Kurai-bhár, tahsíl Sultanpur, pargana Baraunsa, district Sultanpur.

The station consists of an earthen tower enclosing a central solid pillar of masonry $25\frac{1}{2}$ feet high which has a mark-stone at top, another at bottom, and others at 8, 12, 15 and 20 feet above the latter. The distances and bearings of surrounding villages are:—Gurbár, nearly $\frac{1}{4}$ mile N.; Mahmúdpur, $\frac{1}{4}$ mile E.S.E.; Dubepurwa, $\frac{1}{4}$ mile S.; and Rámnáthpur, $\frac{1}{4}$ mile N.N.W.

XX. Rarauli (*Raraoli*) Tower Station, lat. $26^{\circ} 27'$, long. $82^{\circ} 11'$ —observed at in 1847—is situated at about 300 yards W.S.W. of the village of Rarauli, and stands on the N. bank of a tank: tahsíl Bikapur, pargana Pachhimráth, district Fyzabad.

The station consists of an earthen tower enclosing a central solid pillar of masonry 32 feet high which has a mark-stone at top, another at bottom, and others at 8, 16 and 24 feet respectively above the latter. The distances and bearings of surrounding villages are:—Saidkhánpur, $1\frac{1}{4}$ miles W.S.W.; Jagdíspur, 1 mile N.E.; Athgaon, 1 mile E. by S.; and Umrbar, 1 mile S. by W.

XXI. Nansa Tower Station, lat. $26^{\circ} 32'$, long. $82^{\circ} 20'$ —observed at in 1847—is situated within the village of Nansa, and stands at the S. W. angle of the fort. The Madha river flows at a distance of $3\frac{1}{2}$ miles N., and the Bisúhi at 3 miles S. of the station: thána Bikapur, pargana Pachhimráth, district Fyzabad.

The station consists of an earthen tower enclosing a central solid pillar of masonry (height not forthcoming) which has a mark-stone at top, and others—it is assumed—built into the tower as in the adjacent stations. The distances and bearings of surrounding villages are:—Bakhtipur, over $\frac{1}{4}$ mile W. by N.; Bhisauli, 1 mile N.E.; Dhaurahra, $1\frac{1}{2}$ miles S.E.; and Jadopur, $1\frac{1}{2}$ miles S.S.W.

XXII. Ráhet Tower Station, lat. $26^{\circ} 37'$, long. $82^{\circ} 11'$ —observed at in 1847—is situated about 250 yards S. by W. of the village of Ráhet, and stands on a site that is elevated about 16 feet above the level of the surrounding country. One of the main channels of the Madha river is nearly $\frac{1}{2}$ of a mile N. of the station: thána and tahsíl Bikapur, pargana Pachhimráth, district Fyzabad.

The station consists of an earthen tower enclosing a central solid pillar of masonry 25 $\frac{1}{2}$ feet high which has a mark-stone at top, another at bottom, and others at 8, 12 and 16 feet respectively above the latter. The distances and bearings of surrounding places are:—Ruknuddínpur village, $\frac{3}{4}$ mile S.S.E.; Dashratpur village, $\frac{1}{2}$ mile N.E.; and the town of Bhadarsa, 2 miles N.W.

XXIII. Bisaul (*Bisaol*) Tower Station, lat. $26^{\circ} 41'$, long. $82^{\circ} 23'$ —observed at in 1847—is situated just within the boundary of the village of Bisaul, and is distant about half a mile from the right bank of the Gogra river: thána Mahárájganj, tahsíl Fyzabad, pargana Amsin, district Fyzabad.

The station consists of an earthen tower enclosing a central solid pillar of masonry 24 feet high which has a mark-stone at top, another at bottom, and others at 8 and 16 feet respectively above the latter. The distances and bearings of surrounding villages are:—Isa Saráe, nearly $\frac{3}{4}$ mile N.N.W.; Raipur, nearly 1 mile E.S.E.; and Jurhi, about $1\frac{1}{2}$ miles S.W.

XXIV. Orejhar (*Ordjar*) Station, lat. $26^{\circ} 47'$, long. $82^{\circ} 15'$ —observed at in 1847—is situated in the southern suburbs of the city of Ajodhya, and stands on a conical hill (about 80 feet in height) named Orejhar from the circumstance—as is said—of its having been formed by the deposit of rubbish removed from the city. Towards the N.W. of the station is some high ground raised about 60 feet above the level of the surrounding country: this is said to be the site of the ancient city; it is now occupied as a burial ground, and has a secondary station fixed on it. The station is in thána and tahsíl Fyzabad, pargana Ajodhya, district Fyzabad.

The station consists of an earthen platform enclosing a central solid pillar of masonry, which is carried up to a height of 8 feet above ground level, and has a mark-stone at top, and others at 4, 8 and 10 feet respectively below this surface. The distances and bearings of surrounding places are:—The city of Ajodhya, $1\frac{1}{2}$ miles N.; the town of Fyzabad, nearly 3 miles W. by S.; and the village of Barehta, about $\frac{1}{2}$ mile N.E.

XXV. Kumeria (*Kumeria*) Tower Station, lat. $26^{\circ} 52'$, long. $82^{\circ} 35'$ —observed at in 1847—is situated at the S.W. angle of the village of Kumeria, and stands on a spot elevated 30 feet above the level of the surrounding country. The Manwar river winds round at the distance of a mile to the S.W. of the station: thána Parsrámpur, pargana Amorha, district Basti.

The station consists of an earthen tower enclosing a central solid pillar of masonry 27 feet high which has a mark-stone at top, another at bottom, and others at 8, 16 and 24 feet respectively above the latter. The distances and bearings of surrounding villages are:—Jagdísipur, $1\frac{1}{2}$ miles W.N.W.; Nipania, nearly $\frac{3}{4}$ mile S. by W.; Basewa, $\frac{3}{4}$ mile E.S.E.; and Kurmia, $\frac{1}{2}$ mile N.N.E.

XXVI. Tikeria (*Tikeria*) Tower Station, lat. $26^{\circ} 57'$, long. $82^{\circ} 16'$ —observed at in 1847—is situated in the lands of the Debinagar Grant, and stands on high ground about 250 yards from the right bank of the Chamnai river: thána Wazírganj, pargana Nawabganj, district Gonda.

The station consists of an earthen tower enclosing a central solid pillar of masonry 26 feet high which has a mark-stone at top, another at bottom, and others at 8, 16 and 20 feet respectively above the latter. The distances and bearings of surrounding villages are:—Jánkinagar, $1\frac{1}{2}$ miles N.E.; Saráe, $1\frac{1}{2}$ miles S.S.W.; Jalmalpur, $1\frac{1}{2}$ miles W.S.W.; and Rámgarh, $1\frac{1}{2}$ miles N.N.W.

XXVII. Sabanjot (*Sabánjot*) Tower Station, lat. $27^{\circ} 3'$, long. $82^{\circ} 26'$ —observed at in 1847—is situated in the village of that name which lies in the low marshy ground skirting the N. bank of the Bisúhi river: thána and tahsíl Utraula, pargana Sadullahnagar, district Gonda.

The station consists of an earthen tower enclosing a central solid pillar of masonry 32 feet high which has a mark-stone at top, another at bottom, and others at 9, 18 and 26 feet respectively above the latter. The distances and bearings of surrounding villages are:—Chandangot, $\frac{1}{2}$ mile N. by W.; Kakarghatta, about a mile W.S.W.; and Singarghat, nearly $\frac{1}{2}$ mile S.E.

XXVIII. Kopa Tower Station, lat. $27^{\circ} 7'$, long. $82^{\circ} 15'$ —observed at in 1847—is situated at $\frac{1}{4}$ of a mile S.S.E. of Kopa village, and stands on a site elevated about 11 feet above the level of the surrounding country: it is about $2\frac{1}{2}$ miles S.W. of the Bisúhi and nearly the same distance N. of the Manwar river: thána Intwa, pargana Manikapur, district Gonda.

The station consists of an earthen tower enclosing a central solid pillar of masonry 20 feet high which has a mark-stone at top, another at bottom, and others at 7 and 14 feet respectively above the latter. The distances and bearings of surrounding villages are:—Dhuswa Khás, 1 mile S.; Karnapur, $\frac{1}{2}$ mile N.N.E.; and Jigna, $1\frac{1}{2}$ miles W.

XXIX. Mánapára (*Mánápára*) Tower Station, lat. $27^{\circ} 13'$, long. $82^{\circ} 22'$ —observed at in 1847—is situated in the lands of Jafrabad village, and stands on an elevation (12 feet high) in low, densely wooded, marshy ground at a distance of 220 yards N. of the Kuwána river: thána, tahsíl and pargana Utraula, district Gonda.

The station consists of an earthen tower enclosing a central solid pillar of masonry 30 feet high which has a mark-stone at top, another at bottom, and others at 9, 18 and 26 feet respectively above the latter. The distances and bearings of surrounding villages are:—Mahmúdnagar, nearly $1\frac{1}{2}$ miles N.; Bhur, $1\frac{1}{2}$ miles W.S.W.; and Mudui Khán, $1\frac{1}{2}$ miles E.S.E.

XXX. Gurúnagar (*Gurunagar*) Tower Station, lat. $27^{\circ} 18'$, long. $82^{\circ} 11'$ —observed at in 1847—is situated about $\frac{1}{2}$ mile N.N.E., of Gurúnagar village, and stands on a slight elevation very close to the S. bank of the Pirári, an affluent of the Kuwána river: thána Aiah, tahsíl, pargana and district Gonda.

The station consists of an earthen tower enclosing a central solid pillar of masonry 24 feet high which has a mark-stone at top, another at bottom, and others at 8 and 16 feet respectively above the latter. The distances and bearings of surrounding villages are:—Madhnagar, about $\frac{1}{2}$ mile S.W.; Bardand, $1\frac{1}{2}$ miles W. by N.; Naktapur, 1 mile S.S.E.; and Sumda, $1\frac{1}{2}$ miles E. by S.

XLIII:—(*Of the North-East Longitudinal Series*). Saibara Tower Station, lat. $27^{\circ} 27'$, long. $82^{\circ} 8'$ —observed at in 1847 and 1849—is situated about 300 yards N.W. of the village of Saibara, and at the N.W. angle of a square tank: thána and pargana Balrámpur, district Gonda.

The station as built in 1847 consists of an earthen tower enclosing a central solid pillar of masonry 24 feet high which has a mark-stone at top, another at bottom, and others at 8 and 16 feet respectively above the latter. The station was revisited in 1849 in the course of the North-East Longitudinal Series operations but no alteration in its construction appears to have been then made. The distances and bearings of surrounding villages are:—Duária, $\frac{1}{2}$ mile N.N.W.; Gidhuraia, about $1\frac{1}{2}$ miles N.E.; Sharúpur, $1\frac{1}{2}$ miles S.E. by E.; and Buráepur, $\frac{1}{2}$ mile W.

XLV.—(*Of the North-East Longitudinal Series*). Bansídíla Tower Station, lat. $27^{\circ} 24'$, long. $82^{\circ} 19'$ —observed at in 1847 and 1849—is situated about 200 yards S.W. of the village of Bansídíla, and stands on the site of an ancient village elevated about 18 feet above the level of the country. The land to the north of the station is much intersected by streams and tanks, and the river Rapti flows about $1\frac{1}{2}$ miles to the N.: thána and pargana Balrámpur, district Gonda.

The station as built in 1847 consists of an earthen tower enclosing a central solid pillar of masonry 20 feet high which has a mark-stone at top, another at bottom, and others at 7 and 13 or 14 feet respectively above the latter. The station was revisited in 1849 in the course of the North-East Longitudinal Series operations but no alteration in its construction appears to have been then made. The distances and bearings of surrounding villages are:—Firozpur, $\frac{1}{2}$ mile S. by W.; Bhagwatpur, 1 mile N.W.; Tendúa, 1 mile N.E.; and Pursea, 1 mile E.S.E.

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 I. Murchia (*Murchia*): 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.

February 1879.

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

GURWANI 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, 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
XXIX	Chapri	Baghelkhand, Rewah State	Táluka Singrauli	Chapri	... ..
XXXI	Pokra	"	Táluka Bardi	Pokra	... ..
I	Murchia	"	P. Rewah	Jerauha	... ..
II	...	"	Tah. Bardi	Kista	... ..
III	Jamaura	Mirzapur	Thá. Lálganj, Tappa Upraudh, Tah. Mirzapur	Jamaura	... ..
IV	Katra	"	Ditto.	Mahágarhi	... ..
V	Tikor	"	Thá. Bindháchal, Tappa Chhiánue, Tah. Mirzapur	Tikor	Tower fallen down on all sides as reported in 1872.
VI	...	Allahabad	Thá. and Tah. Meja, P. Khairagarh, Táluka Daiya	Basaira	Upper mark-stone missing as reported in 1867.
VII	Barípur	Mirzapur	Thá. Sujanganj, P. Bhandohi, Tah. Korh	Kurwa Barípur	Half of the pillar fallen down as reported in 1867.
VIII	...	Allahabad	Thá. and Tah. Handia, P. Kiwái, Táluka Mawaiya	Ganeshipur	Upper mark-stone missing as reported in 1867.
IX	...	"	Thá. and Tah. Handia, P. Mah, Táluka Masudhi	Seona	Ditto.

NOTE.—Stations XXIX and XXXI appertain to the Calcutta Longitudinal Series of the South-East Quadrilateral, and Thá. for tháns.

P. stands for pargana, Tah. for tahsil,

No. of Station	Local name	District	Pargana, &c.	Village in which the Station lies	Remarks on the Condition of the Station
X	...	Allahabad	Thá. and Tah. Phúlpur, P. Sikandra	Pír Kázi <i>alias</i> Birua	Upper mark-stone missing as reported in 1867.
XI	Marárdi	Jaunpur	Thá. Mungra Bádsháhpur, P. Mungra	Marárdih	... ..
XII	Rámapur	Partabgarh	Thá. Rániganj, P. and Tah. Patti, Táluka Raepur Bichu	Rámpur	... ..
XIII	Newáda	"	Thá., Tah. and P. Patti, Táluka Saifabad	Newáda	Very dilapidated as reported in 1878.
XIV	Púra Pande	"	Ditto.	Púra Pande	... ..
XV	Saifabad	"	Ditto.	Saifabad	... ..
XVI	Durbín Minár	Sultanpur	Thá. Lamhwa, Tah. Kádipur, P. Chánda, Táluka Sheogarh	Newa	... ..
XVII	"	"	Thá. Lamhwa, Tah. Kádipur, P. Chánda, Táluka Sháhpur	Sháhpur	... ..
XVIII	"	"	Thá. and Tah. Sultanpur, P. Baraunsa	Sirwára	... ..
XIX	"	"	Thá. Kuraibhár, Tah. Sultanpur, P. Baraunsa, Táluka Dhaunodi	Kapradi	... ..
XX	Rarauli	Fyzabad	Tah. Bikapur, Táluka Kurwar, P. Pachhimráth	Rarauli	... ..
XXI	Nansa	"	Tah. Bikapur, Táluka Sihipur, P. Pachhimráth	Nansa	Upper mark-stone missing as reported in 1878.
XXII	Ráhet	"	Thá. and Tah. Bikapur, P. Pachhimráth	Ráhet	... ..
XXIII	Dalpatpur	"	Thá. Mahárájganj, P. Amsin, Tah. Fyzabad, Táluka Sihipur	Bisaul	... ..
XXIV	Kázipur	"	Thá. and Tah. Fyzabad, P. Haveli	Orejhár	... ..
XXV	...	Basti	Thá. Parsrámpur, Tah. Harraiya, P. Amorha.	Khamharia	Upper mark-stone missing as reported in 1867.
XXVI	Jungle Tikri	Gonda	Thá. Wazírganj, Tah. Begamganj, P. Nawabganj	Debinagar Grant	Much dilapidated as reported in 1875.
XXVII	Marung Sabanjot	"	P. and Táluka Sadullahnagar, Thá. and Tah. Utraula	Sabanjot	... ..

NOTE.—P. stands for pargana, Tah. for tahsíl, 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
XXVIII	Marung Kopa	Gonda	P. and Táluka Manikapur, Thá. Etwah, Tah. Utraula	Kopa	... ..
XXIX	Marung Jáfrabad	„	P., Táluka, Thá. and Tah. Utraula	Jáfrabad	... ..
XXX	Madhnagar	„	Táluka Singha Chanda, Thá. Aiah, P. and Tah. Gonda	Madhnagar	Pillar partially fallen down as reported in 1875.
XLIII	Sabaira	„	P. and Thá. Balrámpur, Tah. Utraula	Sabaira	... ..
XLV	Básadela	„	P., Thá. and Táluka Balrámpur, Tah. Utraula	Básadela	... ..

NOTE.—Stations XLIII and XLV appertain to the North-East Longitudinal Series.

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

September, 1882.

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

GURWANI MERIDIONAL SERIES.

PRINCIPAL TRIANGULATION. TRIANGLES.

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle			Distance		
						Log. feet	Feet	Miles
1	Chapri, XXIX	.64	67	28	56.52	5.0248745	105894.8	20.056
	Pokra, XXXI	.63	66	27	40.54	5.0215846	105095.6	19.904
	Murchia, I	.63	46	3	22.94	4.9166608	82539.3	15.632
2	Pokra, XXXI	.64	48	31	53.31	4.9350090	86101.2	16.307
	Murchia, I	.65	64	18	37.82	5.0151422	103548.1	19.611
	Kasda, II	.65	67	9	28.87	5.0248745	105894.8	20.056
3	Murchia, I	.79	75	44	52.23	5.1101598	128872.4	24.408
	Kasda, II	.78	63	53	42.46	5.0770082	119401.1	22.614
	Jamaura, III	.78	40	21	25.31	4.9350090	86101.2	16.307
4	Murchia, I	.82	49	3	9.73	4.9891122	97524.1	18.470
	Jamaura, III	.82	63	19	1.52	5.0620825	115367.2	21.850
	Katra, IV	.82	67	37	48.75	5.0770082	119401.1	22.614
5	Jamaura, III	.52	66	12	54.64	4.9814924	95828.0	18.149
	Katra, IV	.52	45	9	8.11	4.8706758	74245.5	14.062
	Tikor, V	.53	68	37	57.25	4.9891122	97524.1	18.470

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

2. Stations Chapri, XXIX, and Pokra, XXXI 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
6	Katra, IV	'52	43 18 33'84	4'8598534	72419'2	13'716
	Tikor, V	'52	71 30 23'28	5'0005416	100124'8	18'963
	Meja, VI	'52	65 11 2'88	4'9814924	95828'0	18'149
7	Tikor, V	'41	65 38 52'17	4'9104025	81358'4	15'409
	Meja, VI	'40	60 9 55'49	4'8891229	77468'1	14'672
	Baripur, VII	'40	54 11 12'34	4'8598534	72419'2	13'716
8	Meja, VI	'38	49 28 32'63	4'8253800	66892'9	12'669
	Baripur, VII	'38	62 55 47'79	4'8941016	78361'3	14'841
	Ganeshpur, VIII	'39	67 35 39'58	4'9104025	81358'4	15'409
9	Baripur, VII	'33	64 40 41'88	4'8556215	71716'9	13'583
	Ganeshpur, VIII	'32	57 51 2'70	4'8272027	67174'2	12'722
	Seona, IX	'32	57 28 15'42	4'8253800	66892'9	12'669
10	Ganeshpur, VIII	'33	58 16 47'61	4'8353606	68448'0	12'964
	Seona, IX	'33	58 41 21'45	4'8372634	68748'5	13'021
	Birua, X	'34	63 1 50'94	4'8556215	71716'9	13'583
11	Seona, IX	'41	63 52 20'65	4'9112611	81519'4	15'439
	Birua, X	'41	67 12 8'46	4'9227479	83704'3	15'853
	Marár, XI	'40	48 55 30'89	4'8353606	68448'0	12'964
12	Birua, X	'32	37 7 27'37	4'7181857	52262'0	9'898
	Marár, XI	'33	72 35 0'55	4'9170940	82621'7	15'648
	Rámapura, XII	'32	70 17 32'08	4'9112611	81519'4	15'439
13	Marár, XI	'22	70 30 12'93	4'7915805	61884'3	11'721
	Rámapura, XII	'21	56 44 17'60	4'7395207	54893'5	10'396
	Newáda, XIII	'21	52 45 29'47	4'7181857	52262'0	9'898
14	Rámapura, XII	'22	53 0 45'80	4'7313107	53865'5	10'202
	Newáda, XIII	'23	60 23 53'12	4'7681482	58633'8	11'105
	Parípura, XIV	'23	66 35 21'08	4'7915805	61884'3	11'721
15	Newáda, XIII	'26	67 25 10'85	4'8263499	67042'5	12'697
	Parípura, XIV	'26	64 41 24'00	4'8171594	65638'6	12'432
	Saifabad, XV	'25	47 53 25'15	4'7313107	53865'5	10'202
16	Parípura, XIV	'27	51 8 2'66	4'7619164	57798'5	10'947
	Saifabad, XV	'27	64 17 29'19	4'8253235	66884'2	12'667
	Newa, XVI	'28	64 34 28'15	4'8263499	67042'5	12'697
17	Saifabad, XV	'24	62 54 39'51	4'7825129	60605'6	11'478
	Newa, XVI	'24	58 58 44'96	4'7659472	58337'4	11'049
	Dopáp, XVII	'23	58 6 35'53	4'7619164	57798'5	10'947
18	Newa, XVI	'26	57 44 40'65	4'7856091	61039'2	11'560
	Dopáp, XVII	'27	65 9 0'24	4'8162085	65495'1	12'404
	Sirwára, XVIII	'26	57 6 19'11	4'7825129	60605'6	11'478
19	Dopáp, XVII	'25	53 5 11'22	4'7596977	57503'9	10'891
	Sirwára, XVIII	'26	68 50 35'63	4'8265497	67073'3	12'703
	Kapradi, XIX	'26	58 4 13'15	4'7856091	61039'2	11'560
20	Sirwára, XVIII	'22	51 39 4'62	4'7254274	53140'7	10'065
	Kapradi, XIX	'23	70 17 4'11	4'8047379	63787'8	12'081
	Rarauli, XX	'23	58 3 51'27	4'7596977	57503'9	10'891

PRINCIPAL TRIANGULATION. TRIANGLES.

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle			Distance		
						Log. feet	Feet	Miles
21	Kapradi, XIX	'22	60	33	2'01	4'7624172	57865'2	10'959
	Rarauli, XX	'22	66	20	54'96	4'7844008	60869'6	11'528
	Nansa, XXI	'22	53	6	3'03	4'7254274	53140'7	10'065
22	Rarauli, XX	'24	58	33	4'88	4'7662726	58381'2	11'057
	Nansa, XXI	'24	63	42	56'81	4'7878714	61358'0	11'621
	Ráhet, XXII	'23	57	43	58'31	4'7624172	57865'2	10'959
23	Nansa, XXI	'26	76	17	29'37	4'8527330	71241'5	13'493
	Ráhet, XXII	'25	50	56	44'09	4'7554522	56944'6	10'785
	Bisaul, XXIII	'25	52	45	46'54	4'7662726	58381'2	11'057
24	Ráhet, XXII	'28	53	42	17'96	4'7863774	61147'3	11'581
	Bisaul, XXIII	'28	56	24	20'21	4'8006854	63195'4	11'969
	Orejhá, XXIV	'29	69	53	21'83	4'8527330	71241'5	13'493
25	Bisaul, XXIII	'28	58	28	47'52	4'8003346	63144'4	11'959
	Orejhá, XXIV	'28	65	52	52'72	4'8299909	67606'9	12'804
	Kumeria, XXV	'27	55	38	19'76	4'7863774	61147'3	11'581
26	Orejhá, XXIV	'25	53	35	55'30	4'7603679	57592'8	10'908
	Kumeria, XXV	'26	64	27	36'04	4'8099801	64562'5	12'228
	Tikeria, XXVI	'26	61	56	28'66	4'8003346	63144'4	11'959
27	Kumeria, XXV	'26	56	10	23'13	4'7769339	59832'1	11'332
	Tikeria, XXVI	'26	70	43	54'87	4'8324426	67989'6	12'877
	Sabanjot, XXVII	'25	53	5	42'00	4'7603679	57592'8	10'908
28	Tikeria, XXVI	'25	62	53	18'42	4'7909867	61799'7	11'704
	Sabanjot, XXVII	'24	57	35	40'38	4'7680225	58616'9	11'102
	Kopa, XXVIII	'24	59	31	1'20	4'7769339	59832'1	11'332
29	Sabanjot, XXVII	'24	49	30	48'59	4'7286258	53533'5	10'139
	Kopa, XXVIII	'25	69	5	4'76	4'8178904	65749'2	12'452
	Mánapára, XXIX	'24	61	24	6'65	4'7909867	61799'7	11'704
30	Kopa, XXVIII	'26	63	57	24'33	4'8146677	65263'1	12'360
	Mánapára, XXIX	'26	68	34	5'10	4'8300483	67615'8	12'806
	Gurúnagar, XXX	'25	47	28	30'57	4'7286258	53533'5	10'139
31	Mánapára, XXIX	'27	52	38	53'92	4'7684804	58678'7	11'113
	Gurúnagar, XXX	'28	65	12	27'06	4'8261592	67013'0	12'692
	Bansídila, XLV	'27	62	8	39'02	4'8146677	65263'1	12'360
32	Gurúnagar, XXX	'25	65	10	36'38	4'8031378	63553'3	12'037
	Bansídila, XLV	'25	57	53	39'82	4'7731591	59314'3	11'234
	Saibara, XLIII	'24	56	55	43'80	4'7684804	58678'7	11'113

NOTE.—Stations Saibara, XLIII, and Bansídila, XLV appertain to the North-East Longitudinal Series.

August 1879.

J. B. N. HENNESSEY,

In charge of Computing Office.

GURWANI MERIDIONAL 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.

Triangle No.	Station	Corrected Plane Angle	Distance			No. of Triangle used	Station	Corrected Plane Angle	Distance			Theodolite used	
			Log. feet	Feet	Miles				Log. feet	Feet	Miles		
33	Chapri, XXIX	87 42 38	4 769117	58765	11 130	38	Pokra, XXXI	42 52 33	4 826815	67114	12 711	Inch 18	
	Pokra, XXXI		4 997346	99391	18 824		Bargawa		78 6 17	4 984615	96520		18 380
	Tendua		4 910661	82539	15 632		Panjerio Hill Mark			4 927197	84566		16 016
34	Pokra, XXXI	8 49 16	4 446957	27987	5 301	39	Bargawa	67 18 57	5 213372	163445	30 956	"	
	Tendua		4 927197	84566	16 016		Dibar			5 209423	161966		30 675
	Bargawa*		4 769117	58765	11 130		Bhawánipur†			5 109465	128666		24 369
35	Chapri, XXIX	75 47 53	5 100481	126032	23 870	40	Bargawa	41 46 0	5 056183	113811	21 555	"	
	Pokra, XXXI		5 070491	117623	22 277		Dibar			5 232619	170852		32 358
	Adhesar Hill Mark†		4 910661	82539	15 632		Deopura			5 109465	128666		24 369
36	Pokra, XXXI	41 46 4	5 109465	128666	24 369	41	Bargawa	25 32 57	4 869816	74100	14 034	"	
	Bargawa		5 252255	178754	33 855		Bhawánipur			5 232619	170852		32 358
	Dibar		4 927197	84566	16 016		Deopura			5 209423	161966		30 675
37	Bargawa	34 9 49	4 915260	82273	15 582	42	Bargawa	48 2 4	5 085941	121882	23 084	"	
	Dibar		4 826815	67114	12 711		Dibar			5 208315	161553		30 597
	Panjerio Hill Mark		5 109465	128666	24 369		Rájapur			5 109465	128666		24 369

* There are two more triangles to this station, see Nos. 83 and 84. Difference between the common side of triangles Nos. 84 and 84 is 6 feet.

† to this point, see Nos. 103 and 104.

‡ to this station, see Nos. 167 and 168.

NOSES.—1. Names followed by Roman numerals are those of Principal Stations. Stations Chapri, XXIX, and Pokra, XXXI pertain to the Calcutta Longitudinal Series of the South-East Quadrilateral.
2. The values of the side are given in the same line with the opposite angle.

SECONDARY TRIANGULATION. TRIANGLES.

No. of Triangle	Station	Corrected Plane Angle	Distance			No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
43	Bargawa Bhawánipur Rájapur	19 16 53 80 47 23	4° 7' 33.846 5° 20' 83.15 5° 20' 94.23	54181 161553 161906	10° 262 30° 597 30° 675	56	Pándipura Bhawánipur Mirzapur Cantonment	92 34 31 39 35 47	4° 8' 54.975 4° 6' 59.809 4° 7' 25.313	71610 45689 53127	13° 563 8° 653 10° 062	Inch 18 "
44	Bhawánipur Deopura Paua	40 13 47	4° 8' 38.632 4° 6' 04.045 4° 8' 69.816	68966 49436 74100	13° 062 9° 363 14° 034	57	Paua Bhawánipur Ganges River No. 47 †	78 25 19 55 8 29	4° 8' 25.011 4° 7' 48.052 4° 6' 94.045	66836 55982 49436	12° 658 10° 603 9° 363	" " "
45	Bhawánipur Rájapur Paua	51 59 15	4° 7' 65.669 4° 6' 04.045 4° 7' 33.846	58300 49436 54181	11° 042 9° 363 10° 202	58	Deopura Paua Baraini Temple	19 33 56	4° 6' 38.333 5° 0' 78.65 4° 8' 38.632	43484 101827 68966	8° 236 19° 286 13° 062	" " "
46	Bhawánipur Paua Pándipura *	69 52 4 58 0 54 52 7 2	4° 7' 69.440 4° 7' 25.313 4° 6' 94.045	58808 53127 49436	11° 138 10° 062 9° 363	59	Deopura Paua Rája Taláo Temple	47 7 53	4° 9' 45.450 5° 0' 72.53 4° 8' 38.632	88196 119194 68966	16° 704 22° 575 13° 062	" " "
47	Bhawánipur Pándipura Dhanwáli Temple	36 45 36 19 17 15	4° 5' 83.533 4° 3' 25.415 4° 7' 25.312	38330 21155 53127	7° 259 4° 007 10° 062	60	Pokra, XXXI Kasda, II Bagdari Hill Mark	51 30 45 13 52 30	4° 9' 50.129 4° 4' 36.966 5° 0' 15.142	89151 27313 103548	16° 885 5° 173 19° 611	" " "
48	Bhawánipur Paua Ganges River No. 45 †	65 42 40 72 29 24 41 47 56	4° 8' 29.982 4° 8' 49.629 4° 6' 94.045	67605 70734 49436	12° 804 13° 397 9° 363	61	Pokra, XXXI Chapri, XXIX Jiawan Hill Mark	17 7 30 40 10 7	4° 4' 60.655 4° 8' 01.218 4° 9' 16.661	28884 63273 82539	5° 470 11° 984 15° 632	" " "
49	Ganges River No. 45 Bhawánipur Mohári	75 52 43 13 13 9 90 54 8	4° 8' 36.356 4° 2' 08.904 4° 8' 49.629	68605 16177 70734	12° 993 3° 064 13° 397	62	Murchia, I Kasda, II Urkutia Hill Mark	104 30 51 36 2 55	5° 1' 17.990 4° 9' 01.802 4° 9' 35.009	131217 79763 80101	24° 852 15° 107 16° 307	" " "
50	Bhawánipur Pándipura Mohári	9 3 45	4° 2' 59.638 4° 8' 36.356 4° 7' 25.313	18182 68605 53127	3° 444 12° 993 10° 062	63	Chapri, XXIX Murchia, I Urkutia Hill Mark	17 31 54 5 51 11	4° 9' 01.802 4° 4' 31.404 5° 0' 21.585	79763 27003 105096	15° 107 5° 114 19° 904	" " "
51	Rájapur Paua Kusáhi Temple	52 11 30	4° 8' 87.172 4° 9' 89.423 4° 7' 65.669	77121 97594 58300	14° 606 18° 484 11° 042	64	Pokra, XXXI Murchia, I Gurdari Hill Mark	39 41 1 32 10 17	4° 8' 52.220 4° 7' 73.309 5° 0' 24.875	71157 59335 105895	13° 477 11° 238 20° 056	" " "
52	Ganges River No. 45 Bhawánipur Mirzapur Court House	60 1 49 32 23 19	4° 7' 87.679 4° 5' 78.904 4° 8' 49.629	61331 37923 70734	11° 616 7° 182 13° 397	65	Chapri, XXIX Murchia, I Gurdari Hill Mark	25 21 58 13 53 7	4° 8' 52.220 4° 6' 00.543 5° 0' 21.585	71157 39860 105096	13° 477 7° 549 19° 904	" " "
53	Pándipura Bhawánipur Mirzapur Bungalow	88 39 59 34 19 31	4° 8' 01.562 4° 5' 52.874 4° 7' 25.313	63323 35717 53127	11° 993 6° 705 10° 062	66	Chapri, XXIX Gurdari Hill Mark Siwar	54 8 43 84 18 56	4° 5' 11.439 4° 4' 24.284 4° 6' 00.543	32467 26563 39860	6° 149 5° 031 7° 549	" 7 "
54	Paua Bhawánipur Mirzapur Bungalow	93 14 52 35 32 33	4° 8' 01.562 4° 5' 66.665 4° 6' 94.045	63323 36869 49436	11° 993 6° 983 9° 363	67	Chapri, XXIX Siwar Kumeria Peak	113 57 45 27 10 5	4° 5' 87.493 4° 2' 86.174 4° 4' 24.284	38681 19327 26563	7° 326 3° 661 5° 031	18 7 "
55	Ganges River No. 45 Bhawánipur Mirzapur Cantonment	73 23 1 35 26 23	4° 8' 54.975 4° 6' 36.813 4° 8' 49.629	71610 43332 70734	13° 563 8° 297 13° 397	68	Chapri, XXIX Murchia, I Tatapahar	78 42 11 32 19 51	5° 0' 43.035 4° 7' 79.729 5° 0' 21.585	110417 60218 105096	20° 912 11° 405 19° 904	18 " "

NOTE.—Stations Chapri, XXIX, and Pokra, XXXI pertain to the Calcutta Longitudinal Series of the South-East Quadrilateral. † There is one more triangle to this station, See No. 235.
* There are two more triangles to this station, See Nos. 165 and 166. ‡ There are two more triangles to this station, See Nos. 163 and 232.

GURWANI MERIDIONAL SERIES.

No of Triangle	Station	Corrected Plane Angle	Distance			No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
69	Murchia, I Kasda, II Sanderipahár Hill Mark	68 43 20 44 25 28	4'940794 4'816535 4'935009	87256 65544 86101	16'526 12'414 16'307	82	Tatpahár Bauráni Kapar	57 24 35	4'496003 4'259544 4'509359	31333 17805 37099	5'934 3'372 7'026	Inch 12 "
70	Chapri, XXIX Murchia, I Tatpahár Hill Mark	67 17 16 30 54 37	4'990991 4'736751 5'021585	97947 54545 105096	18'551 10'330 19'904	83	Murchia, I Kasda, II Bargawa	11 58 38 18 13 31	4'550457 4'728594 4'935009	35519 53530 86101	6'727 10'138 16'307	18 "
71	Murchia, I Kasda, II Deori Sohia Mark	58 21 35 46 48 27	4'880510 4'813169 4'935009	75948 65038 86101	14'384 12'318 16'307	84	Pokra, XXXI Murchia, I Bargawa	30 4 13 52 20 0	4'728594 4'927197 5'024875	53530 84566 105895	10'138 16'016 20'056	" "
72	Pokra, XXXI Kasda, II Deori Sohia Mark	39 14 19 20 21 3	4'880510 4'620712 5'015142	75948 41755 103548	14'384 7'908 19'611	85	Murchia, I Bargawa Bardi	43 22 59 121 52 58	4'636496 4'205025 4'728594	43301 16033 53530	8'201 3'037 10'138	" "
73	Chapri, XXIX Murchia, I Basái Gopat	14 7 37 148 27 25	4'779087 4'690484 5'021585	60129 49932 105096	11'388 9'286 19'904	86	Murchia, I Sanderipahár Hill Mark Siháwal	98 34 35 52 51 46	4'910088 4'594483 4'816535	81300 39308 65544	15'398 7'445 12'414	18 7
74	Kasda, II Murchia, I Ándera Peak	65 19 7 33 8 12	4'898149 4'677455 4'935009	79095 47583 86101	14'980 9'012 16'307	87	Murchia, I Gurdari Hill Mark Siháwal	70 49 0 76 40 5	4'839274 4'594483 4'852220	69068 39308 71157	13'081 7'445 13'477	18 7
75	Pokra, XXXI Murchia, I Ándera Peak	46 58 8 31 10 26	4'898149 4'748267 5'024875	79095 56010 105895	14'980 10'608 20'056	88	Tatpahár Khámerji Baragaon	62 19 26 56 12 57 61 27 37	4'840819 4'813261 4'837322	69314 65052 68758	13'128 12'320 13'022	12 "
76	Kasda, II Murchia, I Cheropahár Peak	55 34 16 37 7 11	4'851852 4'716153 4'935009	71097 52018 86101	13'465 9'852 16'307	89	Chapri, XXIX Tatpahár Baragaon	112 11 5 32 25 19	4'813261 5'017040 4'779729	65052 104002 60218	12'320 19'697 11'405	" "
77	Pokra, XXXI Murchia, I Cheropahár Peak	37 17 42 27 11 27	4'851852 4'729312 5'024875	71097 53618 105895	13'465 10'155 20'056	90	Murchia, I Chapri, XXIX Baragaon	67 35 24 69 6 1	5'017040 4'887429 5'021585	104002 77167 105996	19'697 14'615 19'904	18 12
78	Chapri, XXIX Murchia, I Fakera	31 21 32 115 36 4	4'803038 4'782798 5'021585	63539 60645 105096	12'034 11'486 19'904	91	Tatpahár Khámerji Pahári	40 28 26 103 39 29	4'617619 4'662092 4'837322	41459 45930 68758	7'852 8'699 13'022	" "
79	Murchia, I Gurdari Hill Mark Fakera	45 14 39 75 6 28	4'718386 4'803038 4'852220	52286 63539 71157	9'903 12'034 13'477	92	Tatpahár Baragaon Pahári	40 31 49 113 0 50	4'498134 4'662092 4'813261	31487 45930 65052	5'963 8'699 12'320	" "
80	Murchia, I Katra, IV Khámerji	65 17 27 67 23 26	5'154012 5'160986 5'062083	142565 144873 115307	27'001 27'438 21'850	93	Khámerji Pahári Pátpára	115 59 9 45 53 51	4'715149 4'254131 4'617619	51898 17953 41459	9'829 3'400 7'852	" "
81	Tatpahár Khámerji Bauráni	76 6 15 31 2 13	4'844154 4'569359 4'837322	69848 57099 68758	13'229 7'026 13'022	94	Tatpahár Khámerji Pátpára	75 30 43 89 21 13	4'254131 4'823315 4'837322	17953 60576 68758	3'400 12'609 13'022	" "

NOTE.—Stations Chapri, XXIX and Pokra, XXXI appertain to the Calcutta Longitudinal Series of the South-East Quadrilateral. * Base deduced by two sides and included angle.

SECONDARY TRIANGULATION. TRIANGLES.

No. of Triangle	Station	Corrected Plane Angle	Distance			No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
95	Tatpahr	h.s.	4.507202	32152	6.089	108	Khámérji	h.s.	4.780353	61568	11.661	Inch 12
	Baragaon	"	4.578263	37867	7.172		Kesra Hill Mark	"	4.713549	51707	9.793	
	Karbara	s.	4.813261	65052	12.320		Mau Rock	s.	4.578178	37860	7.170	
96	Baragaon	h.s.	3.971308	9361	1.773	109	Khámérji	h.s.	4.314860	20647	3.910	"
	Pahári	"	4.507202	32152	6.089		Machir	"	4.713549	51707	9.793	
	Karbara	s.	4.498134	31487	5.963		Mau Rock	s.	4.590840	38890	7.366	
97	Pahári	h.s.	4.027426	10652	2.017	110	Jamaura, III	h.s.	4.802927	63522	12.031	18
	Karbara	"	4.246861	17655	3.344		Katra, IV	"	4.948717	88862	16.830	
	Murda Hill Temple	"	3.971308	9361	1.773		Chaunia Hill Mark	"	4.989112	97524	18.470	
98	Khámérji	h.s.	4.711762	51495	9.753	111	Murchia, I	h.s.	4.948717	88862	16.830	"
	Baragaon	"	4.530753	33943	6.429		Jamaura, III	"	4.718751	52330	9.911	
	Nagrai Rock	s.	4.840819	69314	13.128		Chaunia Hill Mark	"	5.077008	119401	22.614	
99	Khámérji	h.s.	5.173752	149194	28.256	112	Murchia, I	h.s.	4.615321	41240	7.811	"
	Bilauhi	"	4.578178	37860	7.170		Katra, IV	"	4.908367	80978	15.337	
	Kesra Hill Mark	"	5.073011	118307	22.407		Murli	"	5.062083	115367	21.850	
100	Khámérji	h.s.	4.809593	64500	12.216	113	Katra, IV	h.s.	4.476646	29967	5.676	"
	Nagrai Rock	s.	4.578178	37860	7.170		Chaunia Hill Mark	"	4.615321	41240	7.811	
	Kesra Hill Mark	"	4.530753	33943	6.429		Murli	"	4.802927	63522	12.031	
101	Baragaon	h.s.	4.750682	56348	10.672	114	Jamaura, III	h.s.	4.670596	46838	8.871	18
	Khámérji	"	4.361408	22983	4.353		Katra, IV	"	4.928782	84875	16.075	
	Taripater Rock	s.	4.813261	65052	12.320		Kalápatrí Hill Mark	"	4.989112	97524	18.470	
102	Tatpahr	h.s.	4.361408	22983	4.353	115	Katra, IV	h.s.	4.214624	16392	3.104	18
	Baragaon	"	4.878908	75667	14.231		Murli	"	4.670596	46838	8.871	
	Taripater Rock	s.	4.813261	65052	12.320		Kalápatrí Hill Mark	"	4.615321	41240	7.811	
103	Murchia, I	h.s.	5.031471	107515	20.363	116	Khámérji	h.s.	4.928851	84889	16.077	"
	Jamaura, III	"	4.310016	20418	3.867		Baragaon	"	5.044686	110837	20.992	
	Adhesar Hill Mark	s.	5.077008	119401	22.614		Sabkalai	"	4.840819	69314	13.128	
104	Murchia, I	h.s.	4.997814	99498	18.844	117	Khámérji	h.s.	4.854852	71590	13.559	"
	Kasda, II	"	4.310016	20418	3.867		Baragaon	"	5.073011	118307	22.407	
	Adhesar Hill Mark	s.	4.935009	86101	16.307		Bilauhi	"	4.840819	69314	13.128	
105	Murchia, I	h.s.	4.257371	18087	3.426	118	Baragaon	h.s.	4.526776	33634	6.370	"
	Adhesar Hill Mark	s.	4.156774	14347	2.717		Sabkalai	"	4.84852	71590	13.559	
	Parsia	h.s.	4.310016	20418	3.867		Bilauhi	"	4.928851	84889	16.077	
106	Khámérji	h.s.	4.161419	14502	2.747	119	Murchia, I	h.s.	4.425291	26625	5.043	18
	Nagrai Rock	s.	4.589840	38900	7.366		Katra, IV	"	4.993391	98490	18.653	
	Machir	h.s.	4.550753	33943	6.429		Bilauhi	"	5.062083	115367	21.850	
107	Nagrai Rock	s.	4.382307	24116	4.567	120	Baragaon	h.s.	4.479876	30191	5.718	"
	Machir	h.s.	4.582571	38245	7.243		Bilauhi	"	4.822151	66397	12.575	
	Mau Temple	h.s.	4.161419	14502	2.747		Baraaha (?) Tree Flag	"	4.854852	71590	13.559	

No. of Triangle	Station	Corrected Plane Angle ° ' "	Distance			No. of Triangle	Station	Corrected Plane Angle ° ' "	Distance			Theodolite used
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
121	Katra, IV Bilauhi Baraiha (?) Tree Flag	h.s. 33 24 52 117 31 50	4.479876 4.686777 4.425291	30191 48616 26625	5.718 9.208 5.043	184	Tikor, V Meja, VI Sansarpur Hill Mark	57 32 57 79 24 28	4.951987 5.018256 4.859853	89534 104293 72419	16.957 19.753 13.716	Inch 18 "
122	Bilauhi Baraiha (?) Tree Flag Jigni	h.s. 67 59 19 42 11 13	4.619928 4.625296 4.479876	41680 42198 30191	7.894 7.992 5.718	185	Katra, IV Murli Múgarikot	96 50 9 17 10 13 65 59 38	4.651513 4.124746 4.615321	44824 13327 41240	8.489 2.524 7.811	18 12 "
123	Katra, IV Bilauhi Naun Hill Mark	h.s. 25 27 12 83 24 25	4.082500 4.446376 4.425291	12092 27950 26625	2.290 5.293 5.043	136	Katra, IV Meja, VI Chalanga Hill Mark	134 50 0 6 23 40	5.054555 4.250589 5.000542	113385 17807 100125	21.474 3.373 18.963	18 "
124	Bilauhi Jigni Birohi Rock	h.s. 6 45 41 7 57 47	4.361729 4.291075 4.625296	23000 19547 42198	4.356 3.702 7.992	187	Katra, IV Múgarikot Chalanga Hill Mark	102 54 46 45 4 57	4.389355 4.250589 4.124746	24511 17807 13327	4.642 3.373 2.524	18 12
125	Bilauhi Naun Hill Mark Birohi Rock	h.s. 83 6 39 33 33 34	4.336783 4.291075 4.082500	21716 19547 12092	4.113 3.702 2.290	188	Katra, IV Meja, VI Majgaon Hill Mark	64 39 52 36 41 15	4.965203 4.785424 5.000542	92300 61013 100125	17.481 11.556 18.903	18 "
126	Jigni Birohi Rock Kodalil Hill Mark	h.s. 49 10 31 62 57 0	4.273879 4.344635 4.361729	18788 22112 23000	3.558 4.188 4.356	139	Tikor, V Meja, VI Majgaon Hill Mark	44 39 33 101 52 18	4.965203 5.108927 4.859853	92300 128507 72419	17.481 24.338 13.716	" "
127	Bilauhi Jigni Kodalil Hill Mark	h.s. 29 57 40 42 24 50	4.344635 4.475146 4.625296	22112 29864 42198	4.188 5.656 7.992	140	Katra, IV Múgarikot Daia	63 10 42 94 33 36 22 15 42	4.496861 4.544917 4.124746	31395 35068 13327	5.946 6.642 2.524	" 12 "
128	Bilauhi Birohi Rock Naun Temple	h.s. 13 19 30 21 8 52	3.900870 4.095484 4.291075	7959 12459 19547	1.507 2.360 3.702	141	Katra, IV Majgaon Hill Mark Daia	33 24 24 115 16 46	4.569961 4.544917 4.785424	37150 35068 61013	7.036 6.642 11.556	18 12 12
129	Bilauhi Baraiha (?) Tree Flag Hanumana Rock	h.s. 23 51 36 135 28 2	4.240884 4.181774 4.479876	17413 15198 30191	3.298 2.878 5.718	142	Katra, IV Múgarikot Katra Pass	68 38 34 29 50 53 81 30 33	4.098635 3.826502 4.124746	12550 6707 13327	2.377 1.270 2.524	18 12 7
130	Katra, IV Bilauhi Hanumana Rock	h.s. 93 40 14 57 32 19	4.181774 4.498184 4.425291	15198 31491 26625	2.878 5.964 5.043	143	Múgarikot Daia Katra Pass	64 42 43 23 33 1	4.453311 4.098635 4.496861	28400 12550 31395	5.379 2.377 5.946	12 "
131	Bilauhi Hanumana Rock Balsaur Rock	h.s. 67 28 24 48 31 34	4.260805 4.272674 4.181774	18231 18736 15198	3.453 3.548 2.878	144	Múgarikot Katra Pass Katra Patrol's Bungalow	28 17 43 139 49 14	3.964745 3.602680 4.098635	9220 4006 12550	1.746 0.759 2.377	7 "
132	Bilauhi Sabalai Balsaur Rock	h.s. 91 48 18	4.436928 4.272674 4.526776	27348 18736 33634	5.180 3.548 6.370	145	Múgarikot Katra Pass Katra Dák Bungalow	135 22 36 46 19 30	4.150687 3.398685 4.098635	14148 2504 12550	2.679 0.474 2.377	12 7
133	Katra, IV Murli Garbars Temple	h.s. 16 32 39 20 35 37	4.288946 4.380694 4.615321	19451 24027 41240	3.684 4.551 7.811	146	Katra, IV Chaunia Hill Mark Baraunda Bridge	101 48 9 45 13 0	4.942526 4.687691 4.802927	87604 48718 63522	16.592 9.227 12.031	18 7

SECONDARY TRIANGULATION. TRIANGLES.

No. of Triangle	Station	Corrected Plane Angle ° ' "	Distance			No. of Triangle	Station	Corrected Plane Angle ° ' "	Distance			Theodolite used
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
147	Katra, IV Murli Baraunda	78 8 14 43 9 37	4 770863 4 711941 4 615321	59001 51516 41240	11 175 9 757 7 811	160	Meja, VI Kohrář Kohrář Temple	6 38 32 40 8 44	3 911465 4 657626 4 710869	8156 45460 51389	18 18 7	Inch 18 12
148	Katra, IV Meja, VI Bakshipahár Hill Mark	62 58 50 73 20 43	5 111148 5 142730 5 000542	129166 138909 100125	24 463 26 309 18 963	161	Kohrář Daraul Kohrář Temple	5 58 53	4 412592 3 911465 4 523939	25858 8156 33415	18 12	"
149	Katra, IV Bakshipahár Hill Mark Karaun Fort	41 12 56	5 004593 4 789832 5 142730	101063 61636 138909	19 141 11 673 26 309	162	Meja, VI Kohrář Rám Nagar Temple	82 46 45	4 816641 4 678326 4 710869	65560 47679 51389	18	18
150	Katra, IV Majgaon Hill Mark Karaun Fort	42 53 58 67 48 37	4 651806 4 789832 4 785424	44855 61636 61013	8 495 11 673 11 556	163	Tikor, V Barpur, VII Ganges River No. 45	61 59 26 46 1 36	4 856856 4 768088 4 889133	71921 58626 77468	18	"
151	Tikor, V Meja, VI Kusalpurwa Mark	27 3 4 17 43 36	4 669866 4 495613 4 859853	46759 31305 72419	8 856 5 929 13 716	164	Tikor, V Ganges River No. 45 Siwára	73 56 21 37 41 25	4 782507 4 586118 4 768088	60605 38558 58626	18	"
152	Katra, IV Meja, VI Kohrář	106 46 28 50 3 15	4 710869 5 097059 5 000542	51389 125043 100125	9 733 23 682 18 963	165	Tikor, V Siwára Pándipura	55 55 48 44 2 0	4 662302 4 737486 4 586118	45952 54637 38558	18	"
153	Katra, IV Bakshipahár Hill Mark Kohrář	78 21 2	4 958107 5 097059 5 142730	90805 125043 138909	17 198 23 682 26 309	166	Tikor, V Ganges River No. 45 Pándipura	18 0 33 68 27 56 93 31 31	4 259107 4 737486 4 768088	18160 54637 58626	18	"
154	Meja, VI Kohrář Chandas	13 50 29 157 43 17	4 510928 4 298609 4 710869	32429 19889 51389	6 142 3 767 9 733	167	Tikor, V Ganges River No. 45 Bhawánipur	55 55 52 80 42 37	4 849629 4 925672 4 768088	70734 84270 58626	18	"
155	Meja, VI Majgaon Hill Mark Chandas	56 14 44 112 15 2	4 918633 4 298609 4 952203	82915 19889 92300	15 704 3 767 17 481	168	Tikor, V Pándipura Bhawánipur	37 55 19 102 52 34	4 725313 4 925672 4 737486	53127 84270 54637	18	"
156	Meja, VI Chandas Meja	53 10 7 15 48 14 111 1 39	4 231847 3 763658 4 298609	17055 5803 19889	3 230 1 099 3 767	169	Siwára Pándipura Lálganj	63 10 16 11 32 53 105 16 51	4 628473 3 979376 4 662302	42508 9536 45952	7	7
157	Meja, VI Meja Meja Tahsildári	18 21 16 133 52 10	3 593421 3 93143 3 763658	3921 8977 5803	0 743 1 700 1 099	170	Lálganj Siwára Tulsipur Pagoda	107 14 8 33 17 0	4 156085 3 915437 3 979376	14325 8231 9536	18	"
158	Meja, VI Meja Meja Fort	32 48 1 108 30 38	3 701481 3 944642 3 763658	5029 8803 5803	0 952 1 667 1 099	171	Tikor, V Siwára Matura	49 5 19 110 38 26	4 493293 4 154581 4 586118	31138 14275 38558	18	7
159	Meja, VI Kohrář Daraul	30 32 18 128 36 29	4 523939 4 369405 4 710869	33415 23410 51389	6 329 4 434 9 733	172	Tikor, V Matura Bhikápurwa	53 35 24 27 3 31 99 21 5	4 066074 3 818309 4 154581	11643 6581 14275	18	7

No. of Triangle	Station	Corrected Plane Angle	Distance			No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
173	Matura Bhikapurwa Lalganj Pagoda	91 18 48 41 34 22	4.201020 4.023031 4.066074	15887 10545 11643	3.009 1.997 2.205	186	Ganges River No. 45 Pandipura Mirzapur Churoh	75 57 1 79 0 24	4.619270 4.624416 4.259107	41617 42113 18160	7.882 7.976 3.439	Inch 18 "
174	Tikor, V Ganges River No. 45 Mara East	92 20 33 15 32 40 72 6 47	4.789241 4.217716 4.768088	61552 16599 58626	11.658 3.127 11.103	187	Jhúsi Moia Ganges River No. 7	52 44 44 45 47 24 81 27 52	4.043700 3.998203 4.137975	11059 9959 13740	2.094 1.886 2.602	12 "
175	Tikor, V Kusalpurwa Mark Mara East	62 20 50 85 54 58	4.444041 4.217716 4.495613	27800 16599 31305	5.265 3.127 5.929	188	Moia Ganges River No. 7 Ditto	47 7 5 51 23 44 81 29 11	3.913472 3.941426 4.043700	8194 8738 11059	1.552 1.655 2.094	"
176	Tikor, V Mara East Mara Dome	20 11 17 123 23 45	3.982137 4.365817 4.217716	9597 23218 16599	1.818 4.397 3.127	189	Jhúsi Moia Ganges River No. 8	31 36 17 92 54 29 55 29 14	3.941426 4.221488 4.137975	8738 16653 13740	1.655 3.154 2.602	"
177	Katra, IV Tikor, V Mara Dome	13 47 11 86 36 53	4.265817 4.987930 4.981492	23218 97259 95828	4.397 18.420 18.149	190	Moia Ganges River No. 8 Ditto	55 33 30 66 27 28 57 59 2	3.929379 3.973340 3.941426	8499 9448 8738	1.610 1.789 1.655	"
178	Tikor, V Mara East Tikor Hill Mark	81 24 23 43 50 52	4.300804 4.146281 4.217716	19990 14005 16599	3.786 2.652 3.127	191	Ganges River No. 8 Ditto Ditto	92 14 52 54 35 45 33 9 23	4.191116 4.102652 3.929379	15328 12666 8499	2.941 2.399 1.610	"
179	Tikor, V Bhikapurwa Tikor Hill Mark	80 22 26 72 55 55	4.159684 4.146281 3.818309	14444 14005 6581	2.736 2.652 1.246	192	Ganges River No. 8 Ditto Ditto	40 36 6 114 9 53 25 14 1	4.286371 4.433998 4.102652	19336 27108 12666	3.662 5.134 2.399	"
180	Tikor, V Mara East Mara Temple	21 18 35 127 32 55	4.064491 4.403279 4.217716	11601 25399 16599	2.197 4.793 3.127	193	Ganges River No. 9 Ditto Ditto	56 46 58 81 0 30 42 12 32	4.286371 4.358483 4.191116	19336 22829 15528	3.662 4.324 2.941	"
181	Katra, IV Tikor, V Mara Temple	15 2 58 85 29 35	4.403279 4.987541 4.981492	25509 97172 95828	4.793 18.404 18.149	194	Ganges River No. 10 Ditto Ditto	56 11 50 63 53 25 59 54 45	4.268802 4.302477 4.286371	18570 20067 19336	3.517 3.801 3.662	"
182	Mara East Mara Temple Mara West	18 10 19 138 47 53	3.739767 3.838207 4.064491	5492 6890 11601	1.040 1.305 2.197	195	Ganges River No. 10 Ditto Ditto	35 43 14 84 14 26 60 2 20	4.114959 4.346473 4.286371	13030 22206 19336	2.468 4.206 3.662	"
183	Mara East Mara West Bharaiganj Pagoda	25 12 3 105 53 42	3.590257 3.944128 3.838207	3893 8793 6890	0.737 1.665 1.305	196	Ganges River No. 11 Ditto Ditto	20 21 1 35 30 6 124 8 53	3.892265 4.114959 4.268802	7803 13030 18570	1.478 2.468 3.517	"
184	Mara East Mara West Birpur Hill Pagoda	60 52 1 85 28 50	4.035834 4.093223 3.838207	10860 12394 6890	2.057 2.347 1.305	197	Ganges River No. 12 Ditto Ditto	72 22 42 81 53 48 25 43 30	4.233851 4.250365 3.892265	17134 17798 7803	3.245 3.371 1.478	"
185	Ganges River No. 45 Pandipura Katala Hill Pagoda	96 54 44 47 46 36 35 18 40	4.493999 4.366710 4.259107	31189 23265 18100	5.907 4.406 3.439	198	Ganges River No. 13 Ditto Ditto	29 34 59 123 54 8 26 30 53	4.277549 4.502173 4.233851	18947 31855 17134	3.589 6.033 3.245	"

SECONDARY TRIANGULATION. TRIANGLES.

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used	No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles					Log. feet	Feet	Miles	
199	Ganges River No. 12 Ditto No. 14 Ditto No. 15	42 27 52 98 10 38 39 21 30	4' 277549 4' 443722 4' 250365	18947 27779 17798	3' 589 5' 261 3' 371	Inch 12 "	212	Ganges River No. 24 Ditto No. 25 Ditto No. 27	32 25 26 113 32 5 34 2 29	4' 008749 4' 241723 4' 027466	10204 17447 10653	1' 932 3' 304 2' 018	Inch 12 "
200	Ganges River No. 14 Ditto No. 15 Ditto No. 16	40 44 28 61 39 41 77 35 51	4' 102480 4' 232305 4' 277549	12661 17075 18947	2' 398 3' 234 3' 589	"	213	Ganges River No. 24 Ditto No. 27 Ditto No. 28	47 24 29 94 37 35 37 57 56	4' 319707 4' 451298 4' 241723	20879 28268 17447	3' 954 5' 354 3' 304	"
201	Ganges River No. 14 Ditto No. 16 Ditto No. 17	37 7 14 90 45 48 52 6 58	4' 115820 4' 335108 4' 232265	13956 21633 17975	2' 473 4' 097 3' 234	"	214	Ganges River No. 24 Ditto No. 28 Ditto No. 29	28 16 4 62 38 36 89 5 20	4' 126758 4' 399846 4' 451298	13389 25110 28268	2' 536 4' 756 5' 354	"
202	Ganges River No. 16 Ditto No. 17 Ditto No. 18	67 0 40 53 20 0 59 39 20	4' 143869 4' 084048 4' 115820	13927 12135 13956	2' 638 2' 298 2' 473	"	215	Ganges River No. 24 Ditto No. 29 Ditto No. 30	35 39 45 13 15 57 131 4 18	4' 288215 3' 883264 4' 399846	19418 7643 25110	3' 678 1' 448 4' 756	"
203	Ganges River No. 16 Ditto No. 18 Ditto No. 19	41 18 13 84 57 54 53 43 53	3' 997153 4' 175808 4' 084048	9935 14993 12135	1' 882 2' 840 2' 298	"	216	Ganges River No. 24 Ditto No. 26 Ditto No. 30	47 10 48 51 51 32 80 57 40	3' 852966 3' 883264 3' 982142	7128 7643 9597	1' 350 1' 448 1' 818	"
204	Ganges River No. 18 Ditto No. 19 Ditto No. 20	44 47 47 83 52 31 51 19 42	3' 952583 4' 102161 3' 997153	8966 12052 9935	1' 698 2' 396 1' 882	"	217	Ganges River No. 26 Ditto No. 30 Ditto No. 31	111 57 50 45 42 0 22 20 10	4' 240416 4' 127866 3' 852966	17395 13424 7128	3' 294 2' 542 1' 350	"
205	Ganges River No. 19 Ditto No. 20 Ditto No. 21	36 23 54 102 25 56 41 10 10	3' 907511 4' 123862 3' 952583	8082 13300 8966	1' 531 2' 519 1' 698	"	218	Ganges River No. 26 Ditto No. 30 Ditto No. 32	68 4 23 60 37 34 51 18 3	3' 928015 3' 900862 3' 852966	8473 7959 7128	1' 605 1' 507 1' 350	"
206	Ganges River No. 20 Ditto No. 21 Ditto No. 22	90 15 37 56 57 5 32 47 18	4' 173879 4' 097235 3' 907511	14924 12509 8082	2' 826 2' 369 1' 531	"	219	Ganges River No. 26 Ditto No. 31 Ditto No. 32	43 53 27 35 40 9 100 26 24	3' 976029 3' 900862 4' 127866	9463 7959 13424	1' 792 1' 507 2' 542	"
207	Ganges River No. 21 Ditto No. 22 Ditto No. 23	34 1 59 89 3 32 56 54 29	3' 998674 4' 250682 4' 173879	9970 17811 14924	1' 888 3' 373 2' 826	"	220	Ganges River No. 31 Ditto No. 32 Ditto No. 33	75 36 41 53 23 52 50 59 27	4' 071741 3' 990187 3' 976029	11796 9777 9463	2' 234 1' 852 1' 792	"
208	Ganges River No. 22 Ditto No. 23 Ditto No. 24	56 47 34 74 47 56 48 24 30	4' 047400 4' 109366 3' 998674	11153 12864 9970	2' 112 2' 436 1' 888	"	221	Ganges River No. 31 Ditto No. 33 Ditto No. 34	46 42 44 62 55 31 70 21 45	3' 878294 3' 905802 3' 990187	7556 9243 9777	1' 431 1' 751 1' 852	"
209	Ganges River No. 22 Ditto No. 24 Ditto No. 25	50 58 14 59 18 15 69 43 31	4' 027466 4' 071587 4' 109366	10653 11793 12864	2' 018 2' 233 2' 436	"	222	Ganges River No. 33 Ditto No. 34 Ditto No. 35	67 58 50 68 13 36 43 47 34	4' 005261 4' 006011 3' 878294	10122 10139 7556	1' 917 1' 920 1' 431	"
210	Ganges River No. 23 Ditto No. 24 Ditto No. 25	35 11 1 107 42 45 37 6 14	4' 027466 4' 245802 4' 047400	10653 17012 11153	2' 018 3' 336 2' 112	"	223	Ganges River No. 33 Ditto No. 35 Ditto No. 36	54 22 48 95 41 3 29 56 9	4' 217920 4' 395744 4' 006011	16517 20218 10139	3' 128 3' 829 1' 920	"
211	Ganges River No. 23 Ditto No. 24 Ditto No. 26	52 7 17 61 20 43 66 32 0	3' 982142 4' 028153 4' 047400	9597 10070 11153	1' 818 2' 021 2' 112	"	224	Ganges River No. 35 Ditto No. 36 Ditto No. 37	40 2 8 64 11 16 75 46 36	4' 039830 4' 185793 4' 217920	10960 15339 16517	2' 076 2' 905 3' 128	"

GURWANI MERIDIONAL SERIES.

No. of Triangle	Station	Corrected Plane Angle	Distance			No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
225	Ganges River No. 85 Ditto No. 37 Ditto No. 88	54 52 47 42 43 43 82 23 30	4 102358 4 021200 4 185793	12658 10500 15339	2 397 1 989 2 905	238	Ganges River No. 44 Ditto No. 45 Ditto No. 49	51 50 58 110 52 10	4 514869 4 589761 4 092075	32724 38883 12362	6 198 7 364 2 341	Inch 12 "
226	Ganges River No. 87 Ditto No. 88 Ditto No. 89	43 7 57 61 58 4 74 53 59	3 952477 4 003424 4 102358	8964 11572 12658	1 698 2 192 2 397	239	Ganges River No. 47 Ditto No. 48 Ditto No. 49	42 15 28 97 11 57 40 32 35	4 129154 4 298046 4 114409	13463 19863 13014	2 550 3 762 2 465	" " "
227	Ganges River No. 88 Ditto No. 89 Ditto No. 40	51 3 43 58 14 15 70 42 2	3 868477 3 907135 3 952477	7387 8075 8964	1 399 1 529 1 698	240	Ganges River No. 48 Ditto No. 49 Mirzapur Church	32 28 18 193 23 28	4 016188 4 274337 4 129154	10380 18808 13463	1 966 3 562 2 550	" " "
228	Ganges River No. 89 Ditto No. 40 Ditto No. 41	60 3 12 87 25 33 32 31 15	4 075777 4 137574 3 868477	11906 13727 7387	2 255 2 600 1 399	241	Jhūsi Ganges River No. 8 Lowana Tree	19 28 13 124 57 53	3 979703 4 370396 4 221488	9543 23464 16653	1 807 4 444 3 154	" " "
229	Ganges River No. 39 Ditto No. 41 Ditto No. 42	69 54 21 47 37 30 62 28 9	4 162493 4 058264 4 137574	14538 11436 13727	2 753 2 166 2 600	242	Ganges River No. 10 Ditto No. 11 Dia Shiwāla	29 42 7 91 17 45	4 048328 4 353184 4 286371	11177 22552 19336	2 117 4 271 3 662	" " "
230	Ganges River No. 41 Ditto No. 42 Ditto No. 43	55 47 49 60 51 44 63 20 27	4 128838 4 152544 4 162493	13454 14208 14538	2 548 2 691 2 753	243	Ganges River No. 11 Ditto No. 12 Dia Shiwāla	27 24 20 30 45 5	4 002668 4 048328 4 268802	10062 11177 18570	1 906 2 117 3 517	" " "
231	Ganges River No. 42 Ditto No. 43 Ditto No. 44	55 58 39 71 21 48 52 39 33	4 146907 4 205056 4 128838	14025 16035 13454	2 656 3 037 2 548	244	Ganges River No. 11 Ditto No. 12 Kukra Shiwāla	42 49 6 71 28 25	4 141366 4 285953 4 268802	13847 19318 18570	2 623 3 659 3 517	" " "
232	Ganges River No. 42 Ditto No. 43 Ditto No. 45	71 54 41 78 47 32 29 17 47	4 417226 4 430876 4 128838	26135 26970 13454	4 950 5 108 2 548	245	Ganges River No. 11 Ditto No. 18 Kukra Shiwāla	63 10 7 75 57 31	4 249657 4 285953 4 114959	17769 19318 13030	3 365 3 659 2 468	" " "
233	Ganges River No. 43 Ditto No. 45 Ditto No. 46	61 17 25 48 16 30 70 26 5	4 386087 4 315997 4 417226	24327 20701 26135	4 607 3 921 4 950	246	Ganges River No. 14 Ditto No. 15 Garāla Shiwāla	56 16 11 12 41 7	4 227475 3 649152 4 277549	16884 4458 18947	3 198 0 844 3 589	" " "
234	Ganges River No. 43 Ditto No. 44 Ditto No. 46	68 43 9 71 20 47 39 56 4	4 368760 4 315997 4 417226	20359 20701 14025	3 856 3 921 2 656	247	Ganges River No. 14 Ditto No. 15 Dandama Shiwāla	23 22 39 30 46 42	3 967294 4 277767 4 277549	9275 11961 18947	1 757 2 205 3 589	" " "
235	Ganges River No. 44 Ditto No. 46 Ditto No. 47	51 8 42 62 16 9 66 35 9	4 237470 4 203093 4 368760	17277 19638 20359	3 272 3 719 3 856	248	Ganges River No. 15 Ditto No. 16 Dandama Shiwāla	30 52 59 45 21 21	3 825489 3 907294 4 102480	6691 9275 12661	1 267 1 757 2 398	" " "
236	Ganges River No. 46 Ditto No. 47 Ditto No. 48	48 4 52 50 51 46 81 3 22	4 114409 4 132441 4 237470	13014 13566 17277	2 465 2 569 3 272	249	Ganges River No. 80 Ditto No. 31 Bankāta Shiwāla	26 56 33 18 9 20	4 046379 3 883783 4 240416	11127 7652 17395	2 107 1 449 3 294	" 18 "
237	Ganges River No. 45 Ditto No. 46 Ditto No. 48	31 19 49 79 51 0 68 49 11	4 132441 4 406012 4 386087	13566 25681 24327	2 569 4 864 4 607	250	Ganges River No. 80 Ditto No. 31 Misrapur Shiwāla	5 35 33 13 45 53	3 708782 4 096448 4 240416	5114 12487 17395	0 969 2 365 3 294	12 18

* Base deduced by two sides and included angle.

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							
251	Ganges River No. 40 Ditto No. 41 Rámpur Shiwála	s. " "	19 6 48 59 9 58	3 60056 4 018747 4 075777	3982 10441 11906	0 754 1 977 2 255	263	Marár, XI Bispatia Machlishahr	39 49 14 88 13 16 51 57 30	4 567049 4 700398 4 656893	36902 57597 45383	6 989 10 908 8 595	Inch 24 12 "						
252	Ganges River No. 44 Ditto No. 47 Shiipur House	s. " "	10 10 48 25 27 27	3 77520 4 160990 4 293993	5957 14487 19038	1 128 2 744 3 719	264	Bispatia Machlishahr Ketulpur	54 16 42 60 43 42 64 59 36	4 2519279 4 550468 4 567049	33058 35520 36902	6 261 6 727 6 989	" "						
253	Ganges River No. 45 Ditto No. 46 Khámária Shiwála	h.s. s.	16 2 15 127 26 17	4 052777 4 511276 4 386087	11292 32455 24327	2 139 6 147 4 607	265	Machlishahr Ketulpur Sarása	57 41 25 58 28 34 63 50 1	4 493181 4 490891 4 519279	31130 31397 33058	5 896 5 946 6 261	" "						
254	Ganges River No. 44 Ditto No. 45 Moia N. Shiwála	s. h.s.	58 32 34 95 13 36	4 377632 4 444858 4 092075	23858 27852 12362	4 519 5 275 2 341	266	Ketulpur Sarása Kámpur	50 16 17 60 8 13 69 35 30	4 407306 4 459463 4 493181	25545 28805 31130	4 838 5 455 5 896	" "						
255	Ganges River No. 45 Ditto No. 49 Moia N. Shiwála	h.s. s.	15 38 34 33 25 1	4 067478 4 377632 4 514869	11681 23858 32724	2 212 4 519 6 198	267	Sarása Kámpur Barauli	56 32 42 71 24 47 52 2 31	4 431858 4 487261 4 407306	27031 30709 25545	5 119 5 816 4 838	" "						
256	Ganges River No. 44 Ditto No. 47 Moia S. Shiwála	s. "	13 34 53 135 19 15	3 950770 4 427062 4 293993	8928 26734 19638	1 691 5 063 3 719	268	Kámpur Barauli Jagdishpur	61 27 38 55 35 19 62 57 3	4 425903 4 398622 4 431858	26663 25039 27031	5 050 4 742 5 119	" "						
257	Ganges River No. 46 Ditto No. 48 Bindháchal Shiwála	s. "	44 44 49 83 30 8	4 084950 4 234593 4 132441	12160 17163 13566	2 303 3 251 2 569	269	Barauli Jagdishpur Jaunpur Fort	56 10 58 72 13 0 51 36 2	4 451259 4 510490 4 425903	28266 32396 26663	5 353 6 136 5 050	" "						
258	Ganges River No. 47 Ditto No. 49 Mirzapur Large Shiwála	s. "	8 18 34 27 1 17	3 695821 4 193260 4 298046	4964 15605 19863	0 940 2 955 3 762	270	Barauli Jaunpur Fort Jaunpur Masjid Dome	6 40 39 98 52 46 51 36 2	3 592207 4 521463 4 510490	3910 33225 32396	0 741 6 293 6 136	" "						
259	Ganges River No. 48 Ditto No. 49 Mirzapur Great Shiwála	s. "	8 28 51 120 44 20	3 408734 4 174254 4 129154	2563 14937 13463	0 485 2 829 2 550	271	Barauli Jagdishpur Jaunpur Masjid Spire	49 28 37 78 43 17	4 411446 4 522080 4 425903	25790 33272 26663	4 884 6 302 5 050	" "						
260	Seona, IX Marár, XI Sathar	s.	60 55 51 14 0 43	4 879449 4 321959 4 922748	75762 20987 83704	14 349 3 975 15 853	272	Barauli Jaunpur Fort Jaunpur Masjid Spire	6 42 21 99 28 39	3 595387 4 522080 4 510490	3939 33272 32396	0 746 6 302 6 136	" "						
261	Seona, IX Sathar Sarai Masjid	s.	12 44 12 64 16 47	3 676557 4 287894 4 321959	4749 19404 20987	0 899 3 675 3 975	273	Jaunpur Fort Jaunpur Masjid Spire A	139 14 30 15 55 25	3 971900 3 780325 3 595387	9373 6030 3939	1 775 1 142 0 746	" "						
JAUNPUR SECONDARY SERIES.													274	Jaunpur Fort Jaunpur Masjid Dome A	138 38 37 16 4 35	3 969886 3 780325 3 592207	9330 6030 3910	1 767 1 142 0 741	" "
262	Marár, XI Newáda, XIII Bispatia	s.	45 27 38 54 30 48 80 1 34	4 599082 4 656893 4 739521	39727 45383 54893	7 524 8 595 10 396	275	Jaunpur Fort A X	19 43 14 144 32 2	3 450287 3 544919 3 780325	2820 3507 6030	0 534 0 664 1 142	" "						

* Base deduced by two sides and included angle.

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		
276	Jaunpur Fort A Jaunpur Jail	37 26 25 27 41 10	3 606461 3 489709 3 780325	4041 3088 6030	0 765 0 585 1 142	Inch "	286	Orejhar, XXIV Fyzabad Great Dome Sugringari Tomb	77 46 29 88 19 13	4 275714 3 666452 4 285489	18867 4039 19297	3 573 0 879 3 655	Inch 24 7	
277	Jaunpur Fort X Jaunpur Church	23 35 14 134 56 22	3 583574 3 831301 3 544919	3833 6781 3597	0 726 1 284 0 664	" "	287	Orejhar, XXIV Sugringari Tomb Fyzabad Dome	63 22 29 97 36 19	4 104687 4 149533 3 666452	12726 14110 4639	2 410 2 672 0 879	24 7	
278	Jaunpur Fort Jaunpur Masjid Dome Haud	19 59 27 20 16 49	3 586223 3 862867 3 592207	3857 7292 3910	0 730 1 381 0 741	" "	288	Orejhar, XXIV Darsanganj Fyzabad Dome	97 47 52 50 30 38	4 258027 4 149533 3 982508	18115 14110 9605	3 431 2 672 1 819	24 7	
279	Jaunpur Fort Haud Barádari Dome	56 21 29 52 34 50	3 807430 3 786972 3 862867	6418 6123 7292	1 216 1 160 1 381	" "	289	Orejhar, XXIV Oudh Temple No. 1	35 20 13 61 13 10	3 550841 3 785775 3 731362	3555 6106 5387	0 673 1 156 1 020	" "	
280	Jaunpur Fort Haud Dariba Temple	15 24 25 50 20 34	3 309629 3 805597 3 862867	2040 6391 7292	0 386 1 210 1 381	" "	290	Orejhar, XXIV Oudh Temple No. 1 Belua Bazar	43 8 45 11 16 15	4 275298 4 350567 3 731302	18849 22416 5387	3 570 4 246 1 020	" "	
281	Jaunpur Fort Haud Isápur Temple	57 46 55 50 28 10	3 812668 3 772500 3 862867	6496 5922 7292	1 230 1 122 1 381	" "	291	Orejhar, XXIV Belua Bazar Sarju River	78 31 28 42 24 40	4 408439 4 246156 4 350507	25612 17626 22416	4 851 3 338 4 246	" "	
OUDH														
SECONDARY SERIES.														
282	Ráhet, XXII Orejhar, XXIV Mao Temple	28 44 47 41 15 12	4 509785 4 646842 4 800685	32343 44345 63195	6 126 8 399 11 969	24 "	292	Oudh Temple No. 1 Belua Bazar Sarju River	53 40 55 46 25 49	4 408439 4 321434 4 275298	25612 20962 18849	4 851 3 970 3 570	" "	
283	Ráhet, XXII Orejhar, XXIV Fyzabad Great Dome	16 41 27 53 27 25	4 285489 4 732231 4 800685	19297 53980 63195	3 655 10 223 11 969	" "	293	Orejhar, XXIV Oudh Temple No. 2	37 36 33 93 15 53	3 692689 3 906400 3 785775	4928 8062 6106	0 933 1 527 1 156	" "	
284	Orejhar, XXIV Fyzabad Great Dome Darsanganj	83 23 52 68 55 35	4 312662 3 982508 4 285489	20543 9065 19297	3 891 1 819 3 655	" 7	294	Orejhar, XXIV Sarju River Oudh Temple No. 2	123 56 33 16 49 6	4 363923 3 906400 4 246156	23117 8062 17626	4 378 1 527 3 338	" "	
285	Orejhar, XXIV Darsanganj Oudh Temple No. 1	148 31 39 11 12 13	4 160642 3 731362 3 982508	14476 5387 9005	2 742 1 020 1 819	24 7	295	Belua Bazar Sarju River Maránadi	112 47 7	4 430423 4 641229 4 408439	26942 43775 25612	5 103 8 291 4 851	" "	
							296	Oudh Temple No. 1 Sarju River Maránadi	159 12 56 9 4 51	4 9430423 4 673299 4 321434	26942 47130 20962	5 103 8 926 3 970	" "	

September 1879.

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

GURWANI 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	Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance
A s. Jaunpur Masjid Dome	189 45 52	BARAUNDA h.s. Tatpahr	88	BARAUNDA BRIDGE s. Katra, IV	146
Jaunpur Masjid Spire	189 55 2	Karbara	95	Chauria Hill Mark	146
Jaunpur Fort	s. 205 50 27	Pahari	92		
X	" 225 33 41	Khámerji	88		
Jaunpur Jail	" 233 31 37	Nagrai Rock	98	BARAUNDA s. Katra, IV	147
		Taripater Rock	101	Murli	147
s s. Orejhar, XXIV	55 22 17	Barniha (?) Tree Flag	120		
Oudh Temple No. 1	116 35 27	Sabkalai	116		
Oudh Temple No. 2	148 38 10	Bilauhi	117		
		Murchia, I	90	BARDI s. Murchia, I	85
		Chapri, XXIX*	89	Bargawa	85
BAISAVE Rock s.					
Hanumana Rock	s. 31 21 38				
Sabkalai	h.s. 74 38 22				
Bilauhi	" 342 50 4				
BARSIDLA, XLIV†		BARAULI s. Saraiá	267	BARGAWA h.s. Pokra, XXXI*	34
Gurúnagar, XXX		Kámpur	267	Tendúa	34
Saibara, XLIII†	48 21 32 44	Jagdishpur	268	Bardi	85
Manapara, XXIX	106 15 12 51	Jaunpur Masjid Spire	271	Murchia, I	88
	346 12 53 15	Jaunpur Masjid Dome	270	Bhawánipur	89
		Jaunpur Fort	269	Rajapur	42
				Deopura	40

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

Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance
BARGAWA h.s. Kasda, II Dibar Panjerio Hill Mark	83 86 87	BHAKAPURWA h.s. Matura Tikor, V Tikor Hill Mark Lálganj Pagoda	172 172 179 178	CHAPRI, XXIX* Tatpabár Tatpabár Hill Mark Baragaon Kumeria Peak Pakera Basai Gopat Adhesar Hill Mark Murchia, I Urkutia Hill Mark Gurdari Hill Mark Jiawan Hill Mark Tendúa Pokra, XXXI* Siwar	68 70 89 67 78 73 85 1 63 65 61 83 1 66
BARIPUR, VII Mirrapur Shiwála Ganges River No. 32 Meja, VI Ganges River No. 30 Bankáta Shiwála Ganges River No. 26 Ganeshpur, VIII Seona, IX Ganges River No. 84 Ganges River No. 45 Ganges River No. 33 Tikor, V	250 219 7 217 249 217 8 9 221 168 220 7	BILAUHI h.s. Jigni Baragaon Kodali Hill Mark Khámerji Kesra Hill Mark Baraha (?) Tree Flag Hanumana Rock Sabalai Baisaur Rock Katra, IV Naun Hill Mark Murchia, I Naun Temple Birohi Rock	122 117 127 117 99 120 129 118 131 119 123 119 128 124	DAIA s. Majgaon Hill Mark Múgarikot Katra, IV Katra Pass	141 140 140 143
BASAI GOPAT h.s. Chapri, XXIX* Murchia, I	78 73	BIRUHI ROCK s. Jigni Kodali Hill Mark Bilauhi Naun Temple Naun Hill Mark	124 124 126 124 128 125	DARAU h.s. Kohrár Kohrár Temple Meja, VI	159 161 159
BAUTRANI h.s. Khámerji Tatpabár Kapar	81 81 82	BIRUA, X Rámapura, XII Marát, XI Seona, IX Ganeshpur, VIII	12 11 10 10	DARSANGANJ s. Fyzabad Great Dome Fyzabad Dome Orejhá, XXIV Oudh Temple No. 1	284 288 284 285
BELVA BAZAR s. Sarju River Orejhá, XXIV Oudh Temple No. 1 Maránadi	291 290 290 295	BISAUTL, XXIII Nansa, XXI Ráhet, XXII Orejhá, XXIV Kumeria, XXV	28 23 24 25	DEOPURA h.s. Bargawa Bhawánipur Paua Baraini Temple Rája Taláo Temple Dibar	40 41 44 58 59 40
BHAWANIPUR h.s. Bargawa Tikor, V Mohári Pándipura Ganges River No. 45 Ganges River No. 47 Mirzapur Bungalow Mirzapur Court House Dhanwáli Temple Mirzapur Cantonment Paua Deopura Rájapur Dibar	39 167 49 46 48 57 53 52 47 55 44 41 43 39	CHANDAS h.s. Majgaon Hill Mark Kohrár Meja Meja, VI	155 154 156 154	DIBAR h.s. Panjerio Hill Mark Pokra, XXXI* Bargawa Bhawánipur Rájapur Deopura	87 86 86 89 42 40

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

AZIMUTHS OF STATIONS AND INTERSECTED POINTS.

Name of station with azimuths of surrounding points	No. of triangle distance	Name of station with azimuths of surrounding points	No. of triangle distance	Name of station with azimuths of surrounding points	No. of triangle distance
DOPAP, XVII Saifabad, XV Nawa, XVI Sirwara, XVIII Kapradi, XIX	17 17 18 19	GANGES RIVER No. 12 s. Ganges River No. 18 Dia Shiwala Ganges River No. 11 Do. Kukra Shiwala Ganges River No. 15 Do.	196 243 194 194 244 199 197	28 56 32 33 41 33 64 26 38 124 21 23 135 55 3 274 5 58 316 33 50	202 202 203 204
GANESHPUR, VIII Birua, X Seona, IX Baripur, VII Meja, VI	10 9 8 8	GANGES RIVER No. 13 s. Ganges River No. 11 Do. Kukra Shiwala Ganges River No. 12 Do. Do.	195 195 245 196 198 197	84 47 21 144 49 41 160 44 52 208 56 14 261 15 3 290 50 2	203 203 205 204
GANGES RIVER No. 7 s. Moia Jhúsi Ganges River No. 8	187 187 188	GANGES RIVER No. 14 s. Ganges River No. 13 Do. Garala Shiwala Ganges River No. 15 Dandama Shiwala Ganges River No. 16 Do.	197 197 246 198 247 200 201	110 51 17 136 34 47 178 29 14 234 45 25 258 8 4 275 29 53 312 37 7	204 204 205 206
GANGES RIVER No. 8 s. Lowana Tree Ganges River No. 9 Moia Jhúsi Ganges River No. 7 Do. Do.	241 190 188 189 188 191 192	GANGES RIVER No. 15 s. Dandama Shiwala Ganges River No. 14 Garala Shiwala Ganges River No. 13 Do. Do.	247 198 246 198 199 200	23 59 55 54 46 37 67 27 44 81 17 30 94 8 7 353 6 56	205 205 207 206
GANGES RIVER No. 9 s. Moia Ganges River No. 8 Do. Do. Do.	190 190 191 191 193	GANGES RIVER No. 16 s. Ganges River No. 17 Do. Dandama Shiwala Ganges River No. 15 Do. Do.	201 200 248 200 208 202	4 45 24 95 31 12 127 45 42 173 7 3 256 26 31 297 44 44	209 206 206 207 208
GANGES RIVER No. 10 s. Munia Ganges River No. 9 Do. Do. Do. Do. Dia Shiwala	192 191 191 194 195 242	GANGES RIVER No. 17 s. Ganges River No. 14 Do. Ganges River No. 15 Do. Do.	201 200 248 200 208 202	4 45 24 95 31 12 127 45 42 173 7 3 256 26 31 297 44 44	210 207 207 211 208
GANGES RIVER No. 11 s. Ganges River No. 9 Do. Do. Do. Kukra Shiwala Ganges River No. 12 Do. Do. Dia Shiwala	193 192 192 244 194 195 242	GANGES RIVER No. 18 s. Ganges River No. 18 Do. Do. Do. Do. Do.	201 201 202	38 29 36 70 55 2 130 13 17 178 37 47 239 58 30 287 9 18 322 49 3 351 5 7	212 209 208 208 211 215 214 213

Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance
GANGES RIVER No. 25 s. Ganges River No. 27 Do. No. 22 Do. No. 23 Do. No. 24	212 209 210 209	GANGES RIVER No. 34 s. Ganges River No. 33 Do. No. 31 Do. No. 35	221 221 222	GANGES RIVER No. 42 s. Ganges River No. 39 Do. No. 41 Do. No. 43 Do. No. 44 Do. No. 45	229 229 230 231 232
GANGES RIVER No. 26 s. Ganges River No. 30 Do. No. 24 Do. No. 23 Do. No. 31 Do. No. 32	216 211 211 217 218	GANGES RIVER No. 35 s. Ganges River No. 36 Do. No. 33 Do. No. 34 Do. No. 38 Do. No. 37	223 222 222 225 224	GANGES RIVER No. 43 s. Ganges River No. 44 Do. No. 42 Do. No. 41 Do. No. 46 Do. No. 45	231 230 230 233 232
GANGES RIVER No. 27 s. Ganges River No. 25 Do. No. 24 Do. No. 28	212 212 213	GANGES RIVER No. 36 s. Ganges River No. 33 Do. No. 35 Do. No. 37	223 223 224	GANGES RIVER No. 44 s. Ganges River No. 42 Do. No. 43 Do. No. 46	231 231 234 254
GANGES RIVER No. 28 s. Ganges River No. 27 Do. No. 24 Do. No. 29	213 213 214	GANGES RIVER No. 37 s. Ganges River No. 36 Do. No. 35 Do. No. 38 Do. No. 39	224 224 225 226	Moia N. Shiwála Moia S. Shiwála Ganges River No. 49 Do. No. 47 Shiapur House	256 238 235 252
GANGES RIVER No. 29 s. Ganges River No. 28 Do. No. 24 Do. No. 30	214 214 215	GANGES RIVER No. 38 s. Ganges River No. 37 Do. No. 35 Do. No. 40 Do. No. 39	225 225 227 226	GANGES RIVER No. 45 h.s. Siwára Mohári Tikor, V Mara East Kataia Hill Pagoda Ganges River No. 31 Do. No. 42 Do. No. 43 Khámária Shiwála Ganges River No. 46 Do. No. 48 Mirzapur Cantonment Moia N. Shiwála Mirzapur Church Mirzapur Court House Ganges River No. 49 Paua Bhawánpur Pándripura	164 49 163 174 185 163 232 232 253 233 237 55 254 186 52 238 48 48 166
GANGES RIVER No. 30 s. Ganges River No. 24 Do. No. 26 Bankáta Shiwála Ganges River No. 31 Mirapur Shiwála Ganges River No. 32 Do. No. 29	215 215 216 249 217 218 215	GANGES RIVER No. 39 s. Ganges River No. 37 Do. No. 38 Do. No. 40 Do. No. 41 Do. No. 42	226 226 227 228 229	GANGES RIVER No. 46 s. Bindháchal Shiwála Ganges River No. 47 Do. No. 45 Do. No. 44 Do. No. 43	257 235 233 234 233
GANGES RIVER No. 31 s. (Same as Barápur, VII, which see.) GANGES RIVER No. 32 s. Ganges River No. 30 Do. No. 26 Do. No. 31 Do. No. 38	218 218 219 220	GANGES RIVER No. 40 s. Ganges River No. 38 Do. No. 41 Rámpur Shiwála Ganges River No. 39	227 228 251 227		
GANGES RIVER No. 33 s. Ganges River No. 32 Do. No. 31 Do. No. 34 Do. No. 35 Do. No. 36	220 220 221 222 223	GANGES RIVER No. 41 s. Ganges River No. 42 Rámpur Shiwála Ganges River No. 39 Do. No. 40 Do. No. 43	229 251 228 228 230		

Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance
GANGES RIVER No. 46 s. Khámária Shiwála Ganges River No. 48	253 236	HAUD s. Bárdári Dome Dariba Temple Isápur Temple Jaunpur Masjid Dome Jaunpur Fort	279 280 281 278 278	KAMPUR s. Saráia Ketulpur Jagdishpur Barauli	266 266 268 267
GANGES RIVER No. 47 s. Shiopur House Ganges River No. 44 Do. No. 46 Do. No. 48 Moia S. Shiwála Ganges River No. 49 Mirzapur Large Shiwála Paua Bhawánipur	252 235 235 236 256 239 258 57 57	JAGDISHPUR s. Barauli Kámpur Jaunpur Masjid Spire Jaunpur Fort JAMAURA, III Murchia, I Adhesar Hill Mark Chaunia, Hill Mark Kálpátri Hill Mark Katra, IV Tikor, V Kasda, II	268 268 271 269 3 108 110 114 4 5 8	KAPAR h.s. Bautráni Tatpáhár KAPRADI, XIX Sirwára, XVIII Rarauli, XX Nansa, XXI Dopáp, XVII	82 82 19 20 21 19
GANGES RIVER No. 48 s. Bindháchal Shiwála Ganges River No. 47 Do. No. 45 Do. No. 46 Mirzapur Church Mirzapur Great Shiwála Ganges River No. 49	257 236 237 236 240 259 239	JAINPUB FORT s. X A Barauli Bárdári Dome Jagdishpur Dariba Temple Haud Jaunpur Masjid Dome Jaunpur Masjid Spire Isápur Temple Jaunpur Church Jaunpur Jail	275 273 269 279 269 280 278 270 272 281 277 276	KARAVUN FORT s. Majgaon Hill Mark Bekshipáhár Hill Mark Katra, IV KARBARA s. Murda Hill Temple Pahári Baragaon Tatpáhár KASDA, II Bagdari Hill Mark Pokra, XXXI † Ámdera Peak Cheropáhár Peak Deori Sohá Mark Sanderipáhár Hill Mark Urkutia Hill Mark Bargawa Murchia, I Adhesar Hill Mark Jamaura, III	150 149 149 97 96 95 95 60 2 74 76 71 69 62 83 2 104 8
GANGES RIVER No. 49 s. Mirzapur Large Shiwála Ganges River No. 45 Do. No. 47 Do. No. 44 Moia N. Shiwála Ganges River No. 48 Mirzapur Church Mirzapur Great Shiwála	258 238 239 238 255 239 240 259	JHUBI s. Moia Ganges River No. 7 Do. No. 8 Lowana Tree JIGNI h.s. Kodáli Hill Mark Baraha(?) Tree Flag Bilauhi Birohi Rock	187 187 189 241 126 122 122 124	KATAIA HILL PAGODA s. Ganges River No. 45 Pándipura KATRA, IV Bilauhi Khámérji Hanumana Rock	185 185 119 80 130

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

Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance		
KATRA, IV Baraiha (?) Tree Flag Majgaon Hill Mark Bakshipahar Hill Mark Katra Pass Daia Kohrar Karaun Fort Meja, VI Mara Temple Mara Dome Múgarikot Tikor, V Baraunda Bridge Baraunda Jamaura, III Garbars Temple Murli Chalinga Hill Mark Kálápari Hill Mark Chaunia Hill Mark Murchia, I Naun Hill Mark	121 138 148 142 140 152 149 6 181 177 135 5 146 147 4 133 112 136 114 110 4 123	o ' " 45 56 0 106 25 26 108 6 28 s. 134 21 58 " 139 49 50 h.s. 147 55 1 s. 149 19 24 " 171 5 18.23 s. 199 20 55 200 36 42 " 203 0 32 " 214 23 52.59 " 220 37 11 " 221 42 27 " 259 33 1.22 283 18 4 h.s. 299 50 41 305 55 18 320 2 1 322 25 20 327 10 50.79 347 3 56	KHAMERJI h.s. Machir Sabalai Nagrai Rock Katra, IV Bilauhi Taripater Rock Baragaon Murchia, I Pahári Bauráni KOHRA h.s. Bakshipahar Hill Mark Rámagar Temple Kohrar Temple Daraul Meja, VI Chandas Katra, IV KOPA, XXVIII Gurúnagar, XXX Mánapara, XXIX Sabanjot, XXVII Tikeria, XXVI KUMERIA, XXV Bisaul, XXIII Orejhar, XXIV Tikeria, XXVI Sabanjot, XXVII LALGANJ h.s. Julsipur Pagoda Pándipura Sivára MACHIR h.s. Khámerji Mau Temple Mau Rock Nagrai Rock MACHLISHAHR s. Marát, XI Bispatia Ketulpur Saráia	106 116 98 80 117 101 88 80 91 81 153 162 160 159 152 154 152 30 29 28 25 25 26 27 170 169 169 106 107 109 106 263 263 264 265	o ' " 185 48 35 " 202 51 9 s. 207 26 6 214 28 11 h.s. 219 19 3 s. 235 21 16 h.s. 252 49 12 261 47 18 268 33 43 " 340 4 22 46 10 58 231 36 3 237 37 57 h.s. 256 55 28 277 46 41 286 12 55 327 49 56 161 0 38.83 224 58 3.42 294 3 8.43 353 34 9.87 7 9 49.58 62 48 9.61 127 15 45.91 183 26 9.30 217 12 48 h.s. 219 10 5 " 324 26 56 5 48 52 109 44 24 s. 123 2 46 " 306 12 14 90 46 56 s. 142 44 26 " 203 28 8 " 261 9 33	MANAPARA, XXIX Kopa, XXVIII Gurúnagar, XXX Bansidika, XLV* Sabanjot, XXVII MARA EAST h.s. Kusalpurwa Mark Mara Dome Mara Temple Mara West Bháratganj Pagoda Birpur Hill Pagoda Ganges River No. 45 Tikor Hill Mark Tikor, V MARA WEST h.s. Mara Temple Bháratganj Pagoda Birpur Hill Pagoda Mara East MARAWADI s. Sarju River Oudh Temple No. 1 Belua Bazar MARAR, XI Sathar Birua, X Rámapura, XII Newáda, XIII Bispatia Machlishahr Seona, IX MATURA s. Tikor, V Bhikápurwa Sivára Lálganj Pagoda MAU ROCK s. Kesra Hill Mark Machir Khámerji	No. of triangle giving distance
KATRA, DAK BUNGALOW s. Katra Pass Múgarikot KATRA PASS s. Daia Katra Patrol's Bungalow Katra Dák Bungalow Múgarikot Katra, IV KATRA PATROL'S BUNGALOW s. Katra Pass Múgarikot KETULPUR s. Machli Shahr Bispatia Kámpur Saráia KHAMERJI h.s. Pátpara Kesra Hill Mark Mau Rock	145 145 143 144 145 142 142 144 144 264 264 266 265 93 99 108	o ' " s. 44 33 55 " 358 14 25 s. 141 6 47 " 220 58 0 " 224 33 9 " 232 51 3 314 21 36 " 40 58 28 " 261 9 14 s. 23 29 11 " 88 28 47 " 274 44 20 " 325 0 37 h.s. 24 32 52 79 38 54 s. 165 0 47	MAU ROK s. Kesra Hill Mark Machir Khámerji	108 109 108	22 47 50 303 1 29 344 59 47	No. of triangle giving distance	

* Of the North-East Longitudinal Series.

Name of station with azimuths of surrounding points	No. of triangle ranging distance	Name of station with azimuths of surrounding points	No. of triangle ranging distance	Name of station with azimuths of surrounding points	No. of triangle ranging distance
PARIPURA, XIV Rampura, XII Newa, XVI Saifabad, XV Newada, XIII	14 16 15 14	RAJAPUR h.s. Bargawa Bhawánipur Paua Kusahi Temple Dibar	42 43 45 51 42	SARJU RIVER s. Orejhar, XXIV Oudh Temple No. 1 Oudh Temple No. 2 Belua Bazar Maránadi	291 292 294 291 295
PABITA s. Murchia, I Adhesar Hill Mark	105 105	RAMAPURA, XII Birua, X Paripura, XIV Newada, XIII Marar, XI	12 14 13 12	SATHAR s. Marar, XI Sarai Masjid Seona, IX	260 261 260
PATARA h.s. Khámerji Pahári Tatpahar	98 98 94	RARALI, XX Sirwara, XXVIII Ráhet, XXII Nansa, XXI Kapradi, XIX	20 22 21 20	SEONA, IX Ganeshpur, VIII Birua, X Sathar Sarai Masjid Marar, XI Baripur, VII	8 10 260 261 11 9
PAVA h.s. Bhawánipur Pándipura Ganges River No. 45 Do. No. 47 Mirzapur Bungalow Barani Temple Raja Talao Temple Kusahi Temple Deopura Rajapur	44 46 48 57 54 58 59 51 44 45	SABANJOT, XXVII Kumeria, XXV Tikeria, XXVI Kopa, XXVIII Mánapara, XXIX	27 27 28 29	SIHAWAL h.s. Murchia, I Sanderipahar Hill Mark Gurdari Hill Mark	86 86 87
POKRA, XXXI* Chapri, XXIX* Jiawan Hill Mark Gurdari Hill Mark Adhesar Hill Mark Murchia, I Deori Sohia Mark Tendúa Barawa Cheropahar Peak Ándera Peak Kasda, II Dibar Panjerio Hill Mark Bagdari Hill Mark	1 61 64 35 1 72 33 34 77 75 2 36 38 60	SABKALAI h.s. Khámerji Baisaur Rock Bilauhi Baragaon SATBARA, XLIII† Ransidla, XLV† Gurúnagar, XXX	116 132 118 116 32 32	SIRWARA, XVIII Newa, XVI Rarali, XX Kapradi, XIX Dopap, XVII SIWARA s. Chapri, XXIX* Kumeria Peak Gurdari Hill Mark SIWARA h.s. Matura Tikor, V Lálganj Tulsipur Pagoda Ganges River No. 45 Pándipura	18 20 19 18 66 67 66 171 164 169 170 164 165
RAHET, XXII Rarali, XX Mao Temple Fyzabad Great Dome Orejhar, XXIV Bisaul, XXIII Nansa, XXI	22 282 283 24 23 22	SARATA s. Machlishahr Ketulpur Kampur Barali	265 265 266 267	SUGRIMGARI TOMB s. Fyzabad Great Dome Fyzabad Dome Orejhar, XXIV	286 287 286

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

GURWANI 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 letters h.s. and s. The names in italics are those of the territories, states or districts in which the stations or points are situated.

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>A s. (<i>Jaunpur</i>) On mound, about $\frac{1}{2}$ a mile S. of Umarpur and at the same distance W. of Jaunpur cantonment.</p> <p style="text-align: center;">o ' "</p> <p>λ 25 44 0'07 L 82 43 21'19 Nos. 273, 274</p>	<p>Amlauti Tree Flag. (<i>Allahabad</i>) In old fort.</p> <p style="text-align: center;">o ' "</p> <p>λ 25 19 5 L 82 11 54</p>	<p>Bahádurgarh Fort s. (<i>Allahabad</i>) Near Nim tree in old fort, 0'8 of a mile N.E. of Harbanpur and 1'1 miles S.E. of Surwadi village.</p> <p style="text-align: center;">o ' "</p> <p>λ 25 35 57'08 L 82 10 57'72</p>
<p>a s. (<i>Fyzabad</i>) On bank of a small nadi, about $1\frac{1}{2}$ miles N.E. of Orejhár principal station, $\frac{1}{2}$ of a mile E. of road from Tanda to Oudh and $\frac{1}{2}$ of a mile S.E. of Oudh city.</p> <p>λ 26 47 29'91 L 82 15 30'22 No. 289</p>	<p>Badra Sayyid's Tomb. (<i>Allahabad</i>)</p> <p>λ 25 27 16 L 81 57 13</p>	<p>Baisaur Rock s. (<i>Mirzapur</i>) On E. side of the high road to Mau, 0'8 of a mile N.E. of the village so called and 1'6 miles S. of Lauridar.</p> <p>λ 24 49 30'11 L 82 10 6'71 Nos. 131, 132</p>
<p>Adhesar Hill Mark. (<i>Mirzapur</i>) On a detached hill N. of the Kaimúr range called Adhesar Fort, about $1\frac{1}{2}$ miles S.E. of Járkul Lower and $2\frac{1}{2}$ miles S.W. of Baruhau village.</p> <p>λ 24 37 37'04 L 82 21 23'05 Nos. 85, 103, 104</p>	<p>Bagdara s. (<i>Baghelkhand, Rewah State</i>) On pagoda, 11'2 feet S. of the spike, about $\frac{1}{2}$ a mile S.E. of village of the same name and at the same distance N.E. of Káronid.</p> <p>λ 24 38 2'97 L 82 32 19'49</p>	<p>Bakshipahár Hill Mark. (<i>Baghelkhand, Rewah State</i>) On the highest point of hill E. of Sohági village.</p> <p>λ 24 57 56'05 L 81 48 14'44 No. 148</p>
<p>Ámdera Peak. (<i>Baghelkhand, Rewah State</i>) Appertaining to the great range running N.E. from Gurdari Hill Mark.</p> <p>λ 24 27 17 L 82 35 6 Nos. 74, 75</p>	<p>Bagdari Hill Mark. (<i>Baghelkhand, Rewah State</i>) On hill peak in the jungle, 5 miles N.E. of Pokra.</p> <p>λ 24 19 51'21 L 82 35 52'82 No. 60</p>	<p>Banjári Fort s. (<i>Mirzapur</i>) On W. face of old fort, 0'4 of a mile E. of Indrawar village.</p> <p>λ 24 48 46'91 L 82 16 46'04</p>

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Bankáta Shiwála, (<i>Mirzapur</i>) Spire. λ 25 15 58.4 L 82 17 59.9 No. 249	Baraunda Bridge s. (<i>Mirzapur</i>) Mark W. of the road, and 20 yards N. of bridge over the Belan river. λ 24 56 56.51 L 82 17 53.99 No. 146	Bautráni h.s. (<i>Baghelkhand, Rewah State</i>) About 1½ miles W. of Dánri, and 1 mile N. of Dhornai nadi. λ 24 20 35.96 L 82 1 50.70 No. 81
Bansídila, XLV.* (<i>Vide page 8—N.</i>) λ 27 24 3.24 L 82 19 17.62 H 377 h 20 No. 81	Baraunda s. (<i>Mirzapur</i>) On S. bank of the Dherawa tank near road. λ 24 57 11.15 L 82 18 21.81 No. 147	Belan and Aud Junction s. (<i>Mirzapur</i>) On bank. λ 24 54 22.57 L 82 19 4.55
Bara s. (<i>Allahabad</i>) On right bank of the Ganges, and N. of village of the same name. λ 25 18 9.48 L 82 11 57.96	Bardi s. (<i>Baghelkhand, Rewah State</i>) Over gateway of fort, on right bank of the Gopat river, about ¼ a mile, S. W. of village of the same name, and 1 mile N.E. of Sunbarsa. λ 24 32 35.48* L 82 25 0.31 No. 85	Belharia Ghat Flag. (<i>Fyzabad</i>) At Rája Dasharath's Samádh. λ 26 42 49 L 82 18 41
Barádari Dome, (<i>Jaunpur</i>) Kalas, situated on right bank of the Gumti river. λ 25 44 51.9 L 82 42 43.0 No. 279	Bargawa h.s. (<i>Baghelkhand, Rewah State</i>) On the Kaimúr range, 1½ miles N.W. of Harma village, and 2½ miles S.W. of upper Bargawa: the Son river flows ¼ a mile south of the station. λ 24 32 40.41 L 82 32 49.29 Nos. 84, 88, 84	Belua Bazar s. (<i>Basti</i>) Opposite zamíndár's house in village, and ¼ a mile N.W. of Hanumanpur; thána and pargana Amorha. λ 26 48 35.68 L 82 18 15.58 No. 290
Baragaon h.s. (<i>Baghelkhand, Rewah State</i>) On the Kaimúr range, about ¼ of a mile N.E. of village of the same name, and 1 mile N.W. of Sajwanah. λ 24 34 48.94 L 82 9 30.74 Nos. 88, 89, 90	Baría s. (<i>Mirzapur</i>) On S.E. corner of tank, about ¼ a mile S.W. of village of the same name, and at the same distance N.E. of Jhagaha. λ 24 37 25.94 L 82 26 23.85	Bháratganj Pagoda. (<i>Allahabad</i>) Spire of the largest and N.W. pagoda. λ 25 6 59.3 L 82 18 54.9 No. 183
Baragaon Temple. (<i>Baghelkhand, Rewah State</i>) White temple W. of village. λ 24 58 28.1 L 81 48 16.0	Barápur, VII. (<i>Vide page 5—N.</i>) λ 25 16 32.49 L 82 19 55.18 H_s 320.82† h 30 No. 7	Bhawánípur h.s. (<i>Mirzapur</i>) Also called Bhowti; on great hill forming S. boundary of the Bind hills. λ 24 59 13.30 L 82 36 21.40 Nos. 39, 167, 168
Baraiha (?) Tree Flag. (<i>Baghelkhand, Rewah State</i>) West of road to Mau. λ 24 45 15 L 82 5 50 Nos. 120, 121	Basá Gopat h.s. (<i>Baghelkhand, Rewah State</i>) On a conical hill on the right bank of the Gopat river, and ¼ a mile W. of Basá village. λ 24 26 50.68 L 82 16 59.20 No. 73	Bhíkápurwa h.s. (<i>Mirzapur</i>) On flat rocks 150 yards N.E. of the village, about ¼ of a mile N.E. of Sahira and 2 miles W. of Ránbári; pargana Kantit. λ 25 3 17.71 L 82 22 58.17 No. 172
Baraini Temple. (<i>Mirzapur</i>) White pointed temple in Mirzapur. λ 25 12 31.6 L 82 43 59.7 No. 58	Batawa Building. (<i>Mirzapur</i>) λ 25 8 35.9 L 82 51 15.6	Bijauli s. (<i>Allahabad</i>) On left bank of the Ganges, and 0.2 of a mile S.E. of the village. λ 25 18 9.98 L 82 15 13.90
Barauli s. (<i>Jaunpur</i>) On S.W. bastion of an old fort, about ¼ of a mile S. of village of the same name, and 1.1 miles S.W. of Sarwarpati. λ 25 42 41.20 L 82 38 27.31 No. 267	Bilauhi h.s. (<i>Baghelkhand, Rewah State</i>) On Drummondganj range, N.W. of Naun village. λ 24 46 32.77 L 82 11 6.71 Nos. 117, 118, 119	

* 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.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Bind Range A s. (Allahabad) On the Bind range, about $\frac{1}{4}$ of a mile N.W. of Kurki village; thána Bháratganj, pargana Khairagarh.</p> <p style="text-align: center;">o ' "</p> <p>λ 25 7 18·35 L 82 10 59·10</p>	<p>Bisaul, XXIII. (Vide page 7—N.)</p> <p style="text-align: center;">o ' "</p> <p>λ 26 40 37·38 L 82 23 21·61 H₁ 342·00* h 24 No. 23</p>	<p>Daia s. (Allahabad) On staircase of Rája's house, about a mile N.E. of Daia Fort.</p> <p style="text-align: center;">o ' "</p> <p>λ 24 55 15·68 L 82 8 3·58 Nos. 140, 141</p>
<p>Bind Range B s. (Allahabad) About $\frac{1}{4}$ a mile S.E. of Chapra and at the same distance N. of Urarapur village; thána Bháratganj, pargana Khairagarh.</p> <p>λ 25 7 3·81 L 82 14 27·13</p>	<p>Bispátia s. (Jaunpur) On S. bank of tank adjoining the village so called, about $\frac{1}{4}$ of a mile E. of Boji Sarái village, 0·7 of a mile N.E. of Tarsai, and 1·4 miles S.E. of Sultanpur.</p> <p>λ 25 46 0·67 L 82 23 11·39 No. 262</p>	<p>Damdama Shiwála, (Allahabad) Spire.</p> <p>λ 25 18 46·3 L 82 7 31·6 Nos. 247, 248</p>
<p>Bind Range C s. (Allahabad) On the Bind range, about 1$\frac{1}{4}$ miles N. of Rámpur, and 2$\frac{1}{4}$ miles N.W. of Unchadeh village; thána Bháratganj, pargana Khairagarh.</p> <p>λ 25 3 23·54 L 82 13 55·39</p>	<p>Chalinga Hill Mark. (Mirzapur) On N.E. point of a remarkable projection of the Kaimúr range, and 3 miles S.E. of Katra principal station.</p> <p>λ 24 49 6·75 L 82 14 45·87 Nos. 136, 137</p>	<p>Daraul h.s. (Allahabad) On the Bind range, 0·4 of a mile W. of the village so called.</p> <p>λ 25 9 34·11 L 82 6 0·80 No. 159</p>
<p>Bind Range D s. (Allahabad) On the Bind range, about 1$\frac{1}{4}$ miles N. W. of Deori; thána Bháratganj, pargana Khairagarh.</p> <p>λ 25 4 39·37 L 82 11 24·93</p>	<p>Chandas h.s. (Allahabad) On Bind hills, about $\frac{1}{4}$ of a mile E. of village of that name, and $\frac{1}{4}$ of a mile N.E. of Bháia.</p> <p>λ 25 6 49·53 L 82 5 45·33 Nos. 154, 155</p>	<p>Daríba Temple, (Jaunpur) Spire.</p> <p>λ 25 45 33·8 L 82 42 55·7 No. 280</p>
<p>Bindháchal Shiwála, (Mirzapur) Spire.</p> <p>λ 25 9 48·0 L 82 33 6·6 No. 257</p>	<p>Chandpára Temple. (Allahabad) Spire of a very remarkable temple.</p> <p>λ 25 29 25·2 L 82 10 8·5</p>	<p>Darsanganj s. (Fyzabad) On tower at W. face of the enclosure wall in the bazar of the same name, and $\frac{1}{4}$ a mile S. of Chirai village.</p> <p>λ 26 45 22·30 L 82 14 55·81 No. 284</p>
<p>Birohi Rock s. (Baghelkhand, Rewah State) On the Drummondganj range, 0·5 of a mile N. of village so called, 1·1 miles S.E. of Misragaon, and 1·6 miles N.E. of Patraira village.</p> <p>λ 24 43 19·15 L 82 11 10·30 Nos. 124, 125</p>	<p>Chapri, XXIX.† (Vide page 3—N.)</p> <p>λ 24 18 46·71 L 82 16 13·30 H 1862 h 3 No. 1</p>	<p>Deopura h.s. (Mirzapur) About 3$\frac{1}{4}$ miles S.W. of Rámpur Saktesgarh.</p> <p>λ 24 56 27·54 L 82 49 25·89 Nos. 40, 41</p>
<p>Bírpur Hill Pagoda, (Allahabad) Dome.</p> <p>λ 25 8 0·9 L 82 19 37·4 No. 184</p>	<p>Chaunia Hill Mark. (Mirzapur) On E. face of the Drummondganj range and near Debaur pass. About 2$\frac{1}{4}$ miles E.S.E. of Lohri village, and 1$\frac{1}{4}$ miles N.N.E. of a paka tauk.</p> <p>λ 24 42 31·37 L 82 19 9·48 Nos. 110, 111</p>	<p>Deori Sohía Mark. (Baghelkhand, Rewah State) On a small height, 2 miles N.W. of village of the same name.</p> <p>λ 24 25 28·87 L 82 29 14·21 Nos. 71, 72</p>
<p>Birua, X. (Vide page 5—N.)</p> <p>λ 25 31 19·96 L 82 6 46·77 H 346 h 30 No. 10</p>	<p>Cheropahár Peak. (Baghelkhand, Rewah State) Appertaining to the great range running N.E. from Gurdari Hill Mark.</p> <p>λ 24 27 24 L 82 33 23 Nos. 76, 77</p>	<p>Dhamawa Temple. (Fyzabad)</p> <p>λ 26 47 7·2 L 82 1 31·4</p>
		<p>Dhanipur Factory, (Allahabad) Eastern chimney of Mr. Griffith's factory.</p> <p>λ 25 17 45 L 82 8 35</p>

* This height refers to the upper mark-stone of the tower and was determined as follows. The point levelled to was on a paka brick imbedded in earth down the N.W. side of the column of which the height = 326·16 feet and to this was added 15·84 feet (the height of the upper mark-stone of tower above this brick).

† 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.
<p>Dhanwáli Temple. (Mirzapur) S. of village of the same name.</p> <p>λ 25 2 41·9 L 82 36 43·9 No. 47</p> <p>Dia Shiwála, (Allahabad) Spire.</p> <p>λ 25 19 7·1 L 82 2 9·8 Nos. 242, 243</p> <p>Dibar h.s. (Mirzapur) About 2½ miles N.E. of Purwa, and 1½ miles N. of Khadra village.</p> <p>λ 24 38 25·06 L 82 55 11·50 No. 36</p> <p>Dopáp, XVII. (Vide page 6—N.)</p> <p>λ 26 10 42·83 L 82 19 10·73 H 334 h 24 No. 17</p> <p>Fyzabad Dome, (Fyzabad) Of Siráj-Ud-daula's tomb.</p> <p>λ 26 46 46·6 L 82 11 59·4 Nos. 287, 288</p> <p>Fyzabad Great Dome. (Fyzabad) Or Queen's tomb.</p> <p>λ 26 45 56·3 L 82 11 12·3 No. 283</p> <p>Fyzabad Masjid, (Fyzabad) N. minaret.</p> <p>λ 26 47 0·5 L 82 12 23·2</p> <p>Fyzabad Masjid, (Fyzabad) S. minaret.</p> <p>λ 26 46 59·9 L 82 12 23·3</p> <p>Ganeshpur, VIII. (Vide page 5—N.)</p> <p>λ 25 20 4·76 L 82 8 24·59 H 323·78* h 3·0 No. 8</p>	<p>Ganges River No. 7 s. (Allahabad) Also called Nika s.; on N. bund of a tank, 0·3 of a mile S.E. of village of the same name, 1 mile off the left bank of the Ganges, and 0·4 of a mile E. of Chatnagh village.</p> <p>λ 25 24 35·38 L 81 57 56·51 No. 187</p> <p>Ganges River No. 8 s. (Allahabad) Also called Nimbi No. 1 s.; on N. bank, close to it the river forms two channels, the larger of which flows under Lowana and the smaller by the station, 0·7 of a mile W. of village of the same name. Marked by a mound 3 feet in height.</p> <p>λ 25 23 14·54 L 81 58 4·49 Nos. 188, 189</p> <p>Ganges River No. 9 s. (Allahabad) Also called Lowana s. or Lowen s.; on right bank, about 50 yards N. of village of the same name, and 1½ miles E. of the Grand Trunk Road from Mirzapur to Allahabad.</p> <p>λ 25 21 59·47 L 81 57 22·52 No. 190</p> <p>Ganges River No. 10 s. (Allahabad) Also called Chebaia s.; on ruins of a Garhi on N. bank, 0·3 of a mile S. of the village so called, and 0·7 of a mile S.E. of Sihora.</p> <p>λ 25 22 22·13 L 82 0 9·99 Nos. 191</p> <p>Ganges River No. 11 s. (Allahabad) Also called Munia s.; on right bank, 0·3 of a mile S.E. of village of the same name.</p> <p>λ 25 19 10·60 L 82 0 8·04 Nos. 192, 193</p> <p>Ganges River No. 12 s. (Allahabad) Also called Hindúpura s.; on a small height E. of village of that name which is composed of half a dozen of straw-built houses. It is situated a little above the confluence of two channels of the river formed near Nimbi.</p> <p>λ 25 20 29·98 L 82 3 10·63 No. 194</p> <p>Ganges River No. 13 s. (Allahabad) Also called Dia s.; on S. bank and at N. extremity of village of the same name. A platform 4 feet in height denotes the station.</p> <p>λ 25 19 22·34 L 82 2 29·48 Nos. 195, 196</p>	<p>Ganges River No. 14 s. (Allahabad) Also called Babura s.; on right bank, 0·5 of a mile N.W. of village of the same name, 0·8 of a mile E. of Kotaha, and 0·7 of a mile S. of Kajuraha village. Marked by a mound of earth 6 feet in height.</p> <p>λ 25 18 21·94 L 82 5 23·98 No. 197</p> <p>Ganges River No. 15 s. (Allahabad) Also called Ganeshpur s.; about 500 yards N.N.W. of principal station of the same name, ¼ of a mile E. of Ganeshpur village, and 1 mile S. W. of Katha: a nala is about 100 yards W. of the station.</p> <p>λ 25 20 10·22 L 82 8 12·67 Nos. 198, 199</p> <p>Ganges River No. 16 s. (Allahabad) Also called Dhanipur s.; on N. bank, a made-road from Sirsa to Saidabad passes 0·15 of a mile W., 0·4 of a mile S.W. of Panditpur Mat, 0·2 of a mile S. of the village so called, and 0·5 of a mile N. of Birpur village.</p> <p>λ 25 18 5·70 L 82 8 29·21 No. 200</p> <p>Ganges River No. 17 s. (Allahabad) Also called Sirsa s.; immediately above S. bank and at E. extremity of the village, about ¼ of a mile N. of the Grand Trunk Road from Mirzapur to Allahabad, and at the same distance W. of Chalwa village.</p> <p>λ 25 15 56·81 L 82 8 17·41 No. 201</p> <p>Ganges River No. 18 s. (Allahabad) Also called Pakri Sawár s.; on remains of a mud fort on S. bank of the river flowing at its base, 0·3 of a mile W. of Pakri, 0·2 of a mile N.W. of Sawár, and 0·7 of a mile N.E. of Dubepur.</p> <p>λ 25 17 9·73 L 82 10 26·23 No. 202</p> <p>Ganges River No. 19 s. (Allahabad) Also called Bhainsápur s.; so called from an image of a buffalo placed there, situated on N.W. angle of fort of the same name, 0·3 of a mile N. of Mowa, 1·0 mile S.E. of Daun Singhpur, and 0·3 of a mile E. of Ahir-ka-purwa.</p> <p>λ 25 18 40·50 L 82 11 8·06 No. 203</p> <p>Ganges River No. 20 s. (Allahabad) Also called Paránipur s.; on S. bank, 0·5 of a mile N. of the village of that name, and 0·6 of a mile N.W. of Kuraura. Marked by a mound 5 feet in height.</p> <p>λ 25 17 57·64 L 82 12 33·64 No. 204</p>

* This height refers to the mark-stone at 27 feet above the ground i.e. at 3 feet below the original upper surface of the pillar.

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Ganges River No. 21 s. (Allahabad) Also called Lachágr s.; on remains of a very remarkable old fort on N. edge of the Ganges, and 0.2 of a mile W. of village of the same name.</p> <p style="text-align: center;">o ' "</p> <p>λ 25 18 57.78 L 82 13 31.77 No. 205</p>	<p>Ganges River No. 28 s. (Allahabad) Also called Mahewa s.; on S. bank of the river and immediately above it, 0.2 of a mile E. of village of the same name, 0.1 of a mile N.W. of Dingarpur, and 0.7 of a mile S. of Tulai village.</p> <p style="text-align: center;">o ' "</p> <p>λ 25 10 36.50 L 82 16 50.33 No. 213</p>	<p>Ganges River No. 35 s. (Mirzapur) Also called Son-ka-pura s.; on left bank, 0.2 of a mile S. of village of that name, 0.5 of a mile S.W. of Indar, and 0.9 of a mile N. of Simaid. A platform 10 feet high indicates the station.</p> <p style="text-align: center;">o ' "</p> <p>λ 25 15 3.06 L 82 22 46.30 No. 222</p>
<p>Ganges River No. 22 s. (Allahabad) One mile from the right bank, 0.9 of a mile N.E. of Kesopati, and at the same distance E. of Rasauli village. A mound 6 feet high defines the station.</p> <p>λ 25 16 35.44 L 82 14 15.63 No. 206</p>	<p>Ganges River No. 29 s. (Mirzapur) Also called Chachúa s.; on old Garhi W. of village so called, and 200 yards from S. edge of the river.</p> <p>λ 25 11 54.94 L 82 18 47.88 No. 214</p>	<p>Ganges River No. 36 s. (Mirzapur) Also called Gaura s.; the river flows 100 yards N. of the station, the village of Gaura from which it is named lies 0.2 of a mile E.</p> <p>λ 25 12 19.44 L 82 22 45.86 No. 223</p>
<p>Ganges River No. 23 s. (Allahabad) Also called Tela s.; on left bank of and just above the river, about 1/4 of a mile N. of village of the same name, and 1/2 of a mile S. of Kuni. A mound 10 feet high denotes the station; thána Handia, pargana Kiwái.</p> <p>λ 25 17 3.60 L 82 15 59.74 No. 207</p>	<p>Ganges River No. 30 s. (Mirzapur) On left bank, 0.6 of a mile N. of Dig village. A mound 8 feet high marks the station.</p> <p>λ 25 14 50.81 L 82 17 22.19 Nos. 215, 216</p>	<p>Ganges River No. 37 s. (Mirzapur) Also called Nimbi No. 2 s.; on right bank, 0.2 of a mile N. of the village of that name, and the same distance S. of Arjunpur. A platform 6 feet high defines the station.</p> <p>λ 25 13 6.46 L 82 24 33.44 No. 224</p>
<p>Ganges River No. 24 s. (Mirzapur) Also called Khemápur s.; on N. bund of a tank between the villages of Khemápur and Sujanganj, from the latter of which it is distant 0.8 of a mile N.W., 1.0 mile S.W. of Chakia, and 1.8 miles N.E. of Dugna village.</p> <p>λ 25 15 13.14 L 82 16 2.64 No. 208</p>	<p>Ganges River No. 31 s. (Same as Barápur VII, which see).</p> <p>No. 217</p>	<p>Ganges River No. 38 s. (Mirzapur) Also called Dhanipati s.; on N. bank, 0.3 of a mile N. of village of the same name, 0.7 of a mile E. of Duhia, and 0.4 of a mile S.W. of Kedarpara.</p> <p>λ 25 15 11.70 L 82 24 40.29 No. 225</p>
<p>Ganges River No. 25 s. (Allahabad) On S. bank, 0.6 of a mile W. of Kanjara, at the same distance N. of Unaur, and 0.8 of a mile E. of Chupor. A platform 10 feet high marks the station.</p> <p>λ 25 14 38.64 L 82 14 12.98 Nos. 209, 210</p>	<p>Ganges River No. 32 s. (Mirzapur) On right bank, 1.2 miles S.W. of Misrapur village. Marked by a platform 8 feet high.</p> <p>λ 25 15 21.22 L 82 18 48.21 Nos. 218, 219</p>	<p>Ganges River No. 39 s. (Mirzapur) Also called Nandni s. or Nandui s.; on a mound on right bank, 0.3 of a mile E. of the village so called, and 0.5 of a mile S.W. of Bamani.</p> <p>λ 25 14 26.12 L 82 26 4.08 No. 226</p>
<p>Ganges River No. 26 s. (Mirzapur) Also called Bankáta s.; on left bank, 0.2 of a mile W. of village of that name. A platform 9 feet in height defines the station.</p> <p>λ 25 16 0.71 L 82 17 33.17 No. 211</p>	<p>Ganges River No. 33 s. (Mirzapur) Also called Dagauli s.; on right bank, 0.1 of a mile S.W. of the village from which the station is named. A platform 6 feet high denotes the station.</p> <p>λ 25 15 13.25 L 82 20 56.42 No. 220</p>	<p>Ganges River No. 40 s. (Mirzapur) Also called Birojpur s.; immediately on N. bank, and 0.4 of a mile E. of Biraspur village.</p> <p>λ 25 15 39.29 L 82 26 2.86 No. 227</p>
<p>Ganges River No. 27 s. (Allahabad) Also called Kotri s.; on S. bank of the river and 200 yards from it, 0.2 of a mile S.W. of the village of that name, 0.4 of a mile N.E. of Achola, and 0.8 of a mile E. of Suria village.</p> <p>λ 25 12 57.86 L 82 14 4.38 No. 212</p>	<p>Ganges River No. 34 s. (Mirzapur) On S. bank, 0.7 of a mile N.W. of Ojapura, 0.3 of a mile S.W. of Madanpara, and 0.5 of a mile N.E. of Berwa. A mound 4 feet high indicates the station.</p> <p>λ 25 16 19.44 L 82 21 34.85 No. 221</p>	<p>Ganges River No. 41 s. (Mirzapur) Also called Bámpur s.; on left bank, 0.5 of a mile S.W. of village of the same name, 1.1 miles E. of Golauri, and 0.7 of a mile N.W. of Mahámanpara village. A large pin marks the station.</p> <p>λ 25 15 35.75 L 82 28 12.51 No. 228</p>

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Ganges River No. 42 s. (<i>Mirzapur</i>) On S. bank, 1 mile S.E. of Japau bungalow, 1.1 miles S. of Thanipura, and 1.3 miles W. of Tili village. A platform 6 feet high denotes the station.</p> <p style="text-align: center;">o ' "</p> <p>λ 25 13 14.68 L 82 27 40.75 Nos. 229</p>	<p>Ganges River No. 49 s. (<i>Mirzapur</i>) Also called Mirzapur s.; on a high house in the city. An iron pin marks the station.</p> <p style="text-align: center;">o ' "</p> <p>λ 25 9 3.04 L 82 36 26.06 Nos. 238, 239</p>	<p>Gogra River No. 118 s. (<i>Fyzabad</i>) Also called Phulpur Village Ghut s.; on right bank, 0.1 of a mile W. of Bachapur, and at the same distance N.E. of Phulpur temple.</p> <p style="text-align: center;">o ' "</p> <p>λ 26 33 11.85 L 82 47 1.15</p>
<p>Ganges River No. 43 s. (<i>Mirzapur</i>) Also called Derwa s.; on N. bank, 0.6 of a mile W. of Gangapura, 0.1 of a mile N.W. of Dubepura, and 0.2 of a mile S.E. of village of the same name. A platform 6 feet high marks the station.</p> <p>λ 25 13 54.88 L 82 30 0.44 Nos. 230</p>	<p>Garaila Shiwála, (<i>Allahabad</i>) Spire, on right bank of the Ganges.</p> <p>λ 25 19 6.1 L 82 5 22.7 Nos. 246</p>	<p>Gogra River No. 119 s. (<i>Basti</i>) On left bank, 1.5 miles S.E. of Dubia, 2.3 miles S. of Misraulia, and 1.4 miles S.W. of Bhagautapur.</p> <p>λ 26 34 54.22 L 82 43 42.91</p>
<p>Ganges River No. 44 s. (<i>Mirzapur</i>) On S. bank; a nadi flows 300 yards S. of the station.</p> <p>λ 25 11 35.98 L 82 29 57.56 Nos. 231</p>	<p>Garbara Temple. (<i>Mirzapur</i>) Spire of white temple.</p> <p>λ 24 49 55.4 L 82 16 23.2 Nos. 133</p>	<p>Gogra River No. 120 s. (<i>Fyzabad</i>) On right bank, 0.3 of a mile N.W. of a temple, and 0.1 of a mile E. of Samrauna.</p> <p>λ 26 32 38.29 L 82 44 44.72</p>
<p>Ganges River No. 45 h.s. (<i>Mirzapur</i>) Also called Moti Taláo h.s.; about $\frac{1}{2}$ of a mile S. of the Grand Trunk Road from Mirzapur to Allahabad, 3 miles W. of Kantit, and $1\frac{1}{2}$ miles W. of Kuran village.</p> <p>λ 25 9 37.57 L 82 30 31.89 Nos. 48, 163, 232</p>	<p>Gaura Temple. (<i>Allahabad</i>) On left bank of the Tons river near junction with the Belan.</p> <p>λ 25 2 9.0 L 81 47 51.6</p>	<p>Gogra River No. 121 s. (<i>Fyzabad</i>) Also called Tándá Masjid s.; on right bank, on a masjid in the town of Tándá.</p> <p>λ 26 33 20.37 L 82 42 15.65</p>
<p>Ganges River No. 46 s. (<i>Mirzapur</i>) On N. bank, a branch of the river is 100 yards from the station, the high road from Gopiganj to Mirzapur passes 100 yards N. of it, 2.1 miles S. of Khámária shiwála, 0.7 of a mile S.W. of Patáira, and 0.5 of a mile N. of Misradhal village. A mound 6 feet high defines the station.</p> <p>λ 25 12 36.81 L 82 33 28.92 Nos. 233, 234</p>	<p>Gogra River No. 113* s. (<i>Basti</i>) On left bank, 0.9 of a mile S. of Parmesapur, and 0.7 of a mile S.E. of Dhusua.</p> <p>λ 26 35 43.76 L 82 51 11.73</p>	<p>Gogra River No. 122 s. (<i>Fyzabad</i>) On right bank, 0.4 of a mile N. of Kakrahi, and 0.8 of a mile S.E. of Mahripur village ghat.</p> <p>λ 26 34 51.66 L 82 40 16.25</p>
<p>Ganges River No. 47 s. (<i>Mirzapur</i>) Also called Bindháchal s.; in centre of roof of the highest house in the city belonging to a pandit; marked by an iron pin.</p> <p>λ 25 9 48.36 L 82 32 55.66 Nos. 57, 235</p>	<p>Gogra River No. 114 s. (<i>Fyzabad</i>) On right bank, 0.1 of a mile N. of Lachipur, and 0.2 of a mile S.E. of Mathia.</p> <p>λ 26 33 39.20 L 82 50 49.20</p>	<p>Gogra River No. 123 s. (<i>Basti</i>) On left bank, 0.9 of a mile S.E. of Tilwa, and 0.6 of a mile S.W. of Guinjot village.</p> <p>λ 26 36 20.23 L 82 41 13.41</p>
<p>Ganges River No. 48 s. (<i>Mirzapur</i>) On N. bank, 1.1 miles N. of Majgaon, 0.7 of a mile S.E. of Sripati, and 1.1 miles W. of Moia factory. A platform 6 feet high marks the station.</p> <p>λ 25 10 50.76 L 82 34 59.63 Nos. 236, 237</p>	<p>Gogra River No. 115 s. (<i>Basti</i>) On left bank, 0.5 of a mile S.E. of Piparia, 0.6 of a mile S. of Chiiwania, and 1.5 miles S.W. of Kudraha village.</p> <p>λ 26 35 19.28 L 82 49 24.74</p>	<p>Gogra River No. 124 s. (<i>Fyzabad</i>) On right bank, 0.2 of a mile N.E. of Rajaur village temple, and 0.3 of a mile E. of Hafzgarh.</p> <p>λ 26 35 58.35 L 82 38 40.17</p>
	<p>Gogra River No. 116 s. (<i>Fyzabad</i>) On right bank, 0.2 of a mile N.W. of Nasirabad.</p> <p>λ 26 33 37.45 L 82 49 9.79</p>	<p>Gogra River No. 125 s. (<i>Basti</i>) On left bank, 1.2 miles S.E. of Gobrahi, and 1 mile W. of Dongarpur Tola.</p> <p>λ 26 38 2.34 L 82 39 15.52</p>
	<p>Gogra River No. 117 s. (<i>Basti</i>) On left bank and S. of Bhurawa.</p> <p>λ 26 34 57.18 L 82 47 3.77</p>	<p>Gogra River No. 126 s. (<i>Fyzabad</i>) On right bank, 0.7 of a mile N.W. of Katargarh, and 0.5 of a mile S.E. of Ifudganj.</p> <p>λ 26 36 21.58 L 82 36 23.71</p>

* The preceding portion of this triangulation will be found in the Co-ordinate List of the Gora Meridional Series and the continuation in that of the Karára Meridional Series.

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Gogra River No. 127 s. (Basti) On left bank, 0·1 of a mile N.W. of Golapur, 0·3 of a mile E. of Bāmanpura, and 0·1 of a mile S. of Lathiara. λ 26 38 48·52 L 82 35 58·63	Gogra River No. 136 s. (Basti) On left bank, 0·2 of a mile S.E. of Gokula, 0·7 of a mile S.W. of Sujhaura, and 2·2 miles W. of Hamaipur. λ 26 43 24·82 L 82 23 9·30	Gogra River No. 144 s. (Gonda) On left bank, 1·3 miles N.E. of Mohana Ghat, 0·8 of a mile S.E. of Ibrāhimpur, and 0·9 of a mile W. of Katara. λ 26 50 9·87 L 82 14 11·72
Gogra River No. 128 s. (Fyzabad) Also called Salona Ghat s.; on right bank, 0·1 of a mile N.W. of the village of Salona, and 0·2 of a mile S.E. of the Salona masjid in ruins. λ 26 37 27·11 L 82 35 10·02	Gogra River No. 137 s. (Fyzabad) Also called Marana Village s.; on right bank, in the large village of Marana. λ 26 42 2·28 L 82 20 30·87	Gogra River No. 145 s. (Fyzabad) On right bank. λ 26 47 54·61 L 82 12 31·01
Gogra River No. 129 s. (Basti) On left bank, 2·5 miles S.E. of Amaniganj, and 2·2 miles S.W. of Gaura. λ 26 40 8·25 L 82 33 30·38	Gogra River No. 138 s. (Basti) On left bank, 0·4 of a mile N.W. of Duhua or Purachatān, 0·3 of a mile S.E. of Kajipur, and 0·5 of a mile S.W. of Bhartapur. λ 26 44 55·34 L 82 20 11·17	Gogra River No. 146 s. (Gonda) On left bank, 0·6 of a mile S.E. of Jaitpur Tola, 1·4 miles S. of Bierampur, and 0·8 of a mile S.W. of Birapur. λ 26 50 12·13 L 82 11 24·68
Gogra River No. 130 s. (Fyzabad) On right bank, 0·6 of a mile S.E. of Karamgarh. λ 26 38 22·64 L 82 31 55·94	Gogra River No. 139 s. (Fyzabad) On right bank, 0·4 of a mile S. of Rāmpur, and 0·7 of a mile N. of Sarāia. λ 26 43 49·77 L 82 16 55·60	Gogra River No. 147 s. (Gonda) On left bank, 0·6 of a mile E. of Kanaujapura, and 1·2 miles N.W. of Guptar ferry-ghat. λ 26 49 17·43 L 82 8 43·65
Gogra River No. 131 s. (Basti) On left bank, 0·2 of a mile E. of Subhika, 0·5 of a mile S.E. of Kataria, and 0·8 of a mile S. of Banjaria. λ 26 40 31·17 L 82 31 15·33	Gogra River No. 140 s. (Basti) On left bank, 0·2 of a mile S. of Misraulia, 0·4 of a mile S.W. of Kanakpur, and 0·4 of a mile N.W. of Chaura. λ 26 46 29·31 L 82 18 31·87	Gogra River No. 148 s. (Fyzabad) On right bank, 1 mile S.W. of Salarpur. λ 26 46 8·49 L 82 8 37·72
Gogra River No. 132 s. (Fyzabad) On right bank, 0·2 of a mile W. of Sujjanpur, and 1·2 miles E. of Muniar Bazar. λ 26 38 25·12 L 82 29 48·75	Gogra River No. 141 s. (Fyzabad) On right bank, S.W. of Para and E. of Tihura. λ 26 45 30·51 L 82 16 4·95	Gogra River No. 149 s. (Gonda) Also called Punipurwa s.; on left bank, 1·5 miles S.E. of Dalikpurwa, at the same distance S. of Bairāgpur, and 0·7 of a mile N.E. of Tulsiapur ferry. λ 26 48 16·32 L 82 6 36·67
Gogra River No. 133 s. (Basti) On left bank, 0·4 of a mile N. of Asogpur, 1·2 miles S.E. of Laharbaridha, and 0·3 of a mile S. of Akunpur. λ 26 40 37·53 L 82 28 52·50	Gogra River No. 142 s. (Basti) Also called Belua Bazar s.; on left bank, 1·1 miles S.E. of Agaganj Bazar, 0·4 of a mile S.W. of Rāmpur, and 0·5 of a mile N.W. of Hanumānpur Bazar. λ 26 48 34·88 L 82 18 15·29	Gogra River No. 150 s. (Fyzabad) On right bank, 1·7 miles W. of Mantajpur, 0·4 of a mile N.E. of Sarāia, and 0·6 of a mile E. of Rāmsahai Upādhyapurwa. λ 26 46 7·55 L 82 5 42·21
Gogra River No. 134 s. (Fyzabad) On right bank. λ 26 38 49·21 L 82 26 42·33	Gogra River No. 143 s. (Gonda) On left bank, 1·2 miles S.E. of Shahganj, and 0·5 of a mile S.W. Lamti. λ 26 49 40·83 L 82 16 30·56	Gogra River No. 151 s. (Gonda) On left bank, 2·8 miles E. of Baunda, 1·3 miles S.E. of Sakhipur, and 0·4 of a mile S.W. of Dharoram or Motipurwa. λ 26 48 34·66 L 82 4 15·78
Gogra River No. 135 s. (Basti) On left bank, 1·6 miles S.E. of Pahia, and 0·9 of a mile S.W. of Chapia. λ 26 41 36·74 L 82 26 31·84	Gogra River No. 152 s. (Fyzabad) Also called Magarsi Village s.; on right bank, in the large village of Magarsi. λ 26 46 59·09 L 82 3 4·32	

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Gogra River No. 153 s. (<i>Gonda</i>) On left bank, 2·9 miles S.E. of Dhanauli, 0·7 of a mile S. of Marhain, and 2·4 miles N. of Dhamawa Ghat.</p> <p style="text-align: center;">o ' "</p> <p>λ 26 48 56·27 L 82 1 22·78</p>	<p>Gogra River No. 162 s. (<i>Bara Banki</i>) On right bank, 0·5 of a mile N.W. of Shioparsád Tola, and 0·4 of a mile N. of Koilawar.</p> <p style="text-align: center;">o ' "</p> <p>λ 26 52 6·41 L 81 50 9·30</p>	<p>Haud s. (<i>Jaunpur</i>) Also called Haund; on W. bank of tank, about 1·4 miles N.W. of Jaunpur fort, and 1 mile S.E. of Tájpur village.</p> <p style="text-align: center;">o ' "</p> <p>λ 25 45 52·64 L 82 43 3·61</p> <p style="text-align: right;">No. 278</p>
<p>Gogra River No. 154 s. (<i>Fyzabad</i>) On right bank, 0·5 of a mile N. of Dimkapur, and 0·6 of a mile N.E. of Sanau.</p> <p>λ 26 47 6·09 L 81 58 51·89</p>	<p>Gogra River No. 163 s. (<i>Gonda</i>) On left bank, 0·4 of a mile S.W. of Thákuraínpurwa, and 1·4 miles N.E. of Dhama Ghat at the junction of the Sarju and Gogra rivers.</p> <p>λ 26 53 42·88 L 81 49 43·42</p>	<p>Hetapati Temple, (<i>Allahabad</i>) Spire. Also called Saidaganj white temple.</p> <p>λ 25 29 31·0 L 81 58 21·2</p>
<p>Gogra River No. 155 s. (<i>Gonda</i>) On left bank, 0·1 of a mile E. of Gopálpur, 1·3 miles S.E. of Paras, and 1·1 miles N.W. of Mangha.</p> <p>λ 26 49 10·36 L 81 57 55·08</p>	<p>Gogra River No. 164 s. (<i>Bara Banki</i>) On right bank, 1·2 miles N.W. of Dhemá, and 0·4 of a mile N.E. of Nausara.</p> <p>λ 26 53 10·50 L 81 48 19·18</p>	<p>Ibráhímpur Idgáh, (<i>Allahabad</i>) Centre dome.</p> <p>λ 25 28 47·1 L 81 58 7·3</p> <p>See Synoptical Vol. of the Karára Meridional Series.</p>
<p>Gogra River No. 156 s. (<i>Fyzabad</i>) Also called Sehor Ghat s.; on right bank, 0·8 of a mile N.W. of Kanaphorpur, and 0·5 of a mile E. of Sehor.</p> <p>λ 26 48 10·47 L 81 56 24·16</p>	<p>Gogra River No. 165 s. (<i>Gonda</i>) On left bank, 0·6 of a mile N.W. of Sirsaipurwa, and 0·7 of a mile E. of the Sarju river.</p> <p>λ 26 54 59·14 L 81 48 17·16</p>	<p>Isápur Temple, (<i>Jaunpur</i>) Spire.</p> <p>λ 25 45 48·1 L 82 44 14·5</p> <p style="text-align: right;">No. 281</p>
<p>Gogra River No. 157 s. (<i>Gonda</i>) On left bank, 0·8 of a mile S. of Jagannáthpurwa, 0·5 of a mile W. of Sagam Tiwáripurwa, and 0·8 of a mile N. of Hathi Singhpurwa.</p> <p>λ 26 50 21·23 L 81 55 48·86</p>	<p>Guptar Ghat Temple. (<i>Fyzabad</i>)</p> <p>λ 26 48 0·0 L 82 9 37·2</p>	<p>Jagdíshpur s. (<i>Jaunpur</i>) Near old well on high ground W. of village of the same name, and about 0·8 of a mile W. of the Basalutpur large village.</p> <p>λ 25 47 1·77 L 82 39 14·89</p> <p style="text-align: right;">No. 268</p>
<p>Gogra River No. 158 s. (<i>Bara Banki</i>) On right bank, 2·2 miles N. of Hájpur, and at the same distance W. of Raghupur.</p> <p>λ 26 49 21·92 L 81 53 59·07</p>	<p>Gurdari Hill Mark. (<i>Baghelkhand, Rewah State</i>) On a great peak 5 miles N.N.E. of Jiawan.</p> <p>λ 24 23 12·17 L 82 21 32·45</p> <p style="text-align: right;">Nos. 64, 65</p>	<p>Jamaura, III. (<i>Vide page 4—N.</i>)</p> <p>λ 24 53 44·49 L 82 29 31·07 H 723 h 8</p> <p style="text-align: right;">No. 8</p>
<p>Gogra River No. 159 s. (<i>Gonda</i>) On left bank, 0·6 of a mile E. of Aman Singh's paka fort, 0·8 of a mile S.E. of Dhamawapurwa, and 0·6 of a mile N. of Aili.</p> <p>λ 26 52 9·12 L 81 53 43·21</p>	<p>Gurúnagar, XXX. (<i>Vide page 8—N.</i>)</p> <p>λ 27 17 36·88 L 82 11 11·50 H 366 h 24</p> <p style="text-align: right;">No. 30</p>	<p>Jaunpur Church, (<i>Jaunpur</i>) N.W. spire.</p> <p>λ 25 43 48·5 L 82 44 7·2</p> <p style="text-align: right;">No. 277</p>
<p>Gogra River No. 160 s. (<i>Bara Banki</i>) On right bank, 0·2 of a mile N.E. of Kaithi village, and 0·7 of a mile S.E. of Kaithi ferry-ghat.</p> <p>λ 26 51 7·41 L 81 51 30·32</p>	<p>Halía Masjid, (<i>Mirzapur</i>) N. minaret.</p> <p>λ 24 49 34·9 L 82 21 58·0</p>	<p>Jaunpur Fort s. (<i>Jaunpur</i>) On summit of high building on S.W. bastion of the fort occupied by the establishment of the Opium Agent.</p> <p>λ 25 44 53·83 L 82 43 49·94</p> <p style="text-align: right;">No. 269</p>
<p>Gogra River No. 161 s. (<i>Gonda</i>) On left bank, 0·3 of a mile S.W. of Paska-Tola.</p> <p>λ 26 53 2·01 L 81 51 52·20</p>	<p>Hanumana Rock s. (<i>Baghelkhand, Rewah State</i>) W. side of high road to Mau, and N.W. of village of the same name.</p> <p>λ 24 46 55·88 L 82 8 23·75</p> <p style="text-align: right;">Nos. 129, 130</p>	<p>Jaunpur Jail, (<i>Jaunpur</i>) N.W. bastion of sandstone.</p> <p>λ 25 44 23·9 L 82 43 56·7</p> <p style="text-align: right;">No. 276</p>

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Jaunpur Masjid Dome, (<i>Jaunpur</i>) <i>Kalaa.</i></p> <p style="text-align: center;">o ' "</p> <p>λ 25 45 31·2 L 82 43 38·5 No. 270</p> <p>Jaunpur Masjid Spire. (<i>Jaunpur</i>) N. spire of gateway.</p> <p>λ 25 45 31·5 L 82 43 38·8 Nos. 271, 272</p> <p>Jhúsi s. (<i>Allahabad</i>) On left bank of the Ganges, about 1½ miles E. of Allahabad fort.</p> <p>λ 25 25 35·75 L 81 56 30·59</p> <p>See Synoptical Volume of the <i>Karāra Meridional Series.</i></p> <p>Jhúsi Temple, (<i>Allahabad</i>) Near ghat.</p> <p>λ 25 26 18·8 L 81 56 44·2</p> <p>See Synoptical Volume of the <i>Karāra Meridional Series.</i></p> <p>Jiawan Hill Mark. (<i>Baghelkhand, Rewa State</i>)</p> <p>λ 24 21 51·78 L 82 20 11·54 No. 61</p> <p>Jigni h.s. (<i>Baghelkhand, Rewa State</i>) On the Drummond-ganj range, about 1 mile N.E. of Ghogám, and 2 miles E.N.E. of Raghunáthgarh village.</p> <p>λ 24 39 37·83 L 82 10 11·00 No. 122</p> <p>Kálápatrí Hill Mark. (<i>Mirzapur</i>) On eastern edge of the <i>Katra</i> range; pargana <i>Kantit.</i></p> <p>λ 24 44 54·54 L 82 17 35·74 Nos. 114, 115</p> <p>Kalsara s. (<i>Allahabad</i>) On S. bund of tank, 0·3 of a mile S. of the village so called, and 1 mile S.W. of <i>Lariari.</i></p> <p>λ 24 59 24·48 L 81 57 40·41</p>	<p>Kámpur s. (<i>Jaunpur</i>) On N. bank of an old tank adjoining the village, about ¼ of a mile N.W. of <i>Loka Serái</i>, ¼ of a mile E. of village of the same name, and at the same distance S. of <i>Pattiráo.</i></p> <p style="text-align: center;">o ' "</p> <p>λ 25 45 46·47 L 82 34 53·87 No. 266</p> <p>Kapar h.s. (<i>Baghelkhand, Rewa State</i>) About 1 mile E.S.E. of <i>Rondu</i>, 1½ miles E.N.E. of <i>Gorákhári</i>, and 1 mile S. of <i>Pokra.</i></p> <p>λ 24 21 21·37 L 82 7 25·90 No. 82</p> <p>Kapradi, XIX. (<i>Vide page 6—N.</i>)</p> <p>λ 26 21 46·53 L 82 18 38·02 H. 353·59* h 25·5 No. 19</p> <p>Karaun Fort s. (<i>Allahabad</i>) On N.E. bastion of old fort, 1·8 miles N. of <i>Patertal</i>, 0·2 of a mile W. of <i>Karaun thána</i> gate, and 2 miles S.E. of <i>Simeria</i> village.</p> <p>λ 24 59 35·32 L 82 6 27·51 Nos. 149, 150</p> <p>Karbara s. (<i>Baghelkhand, Rewa State</i>) On height S. of village and close to N. bank of the <i>Son</i> river.</p> <p>λ 24 30 28·30 L 82 6 10·58 Nos. 95, 96</p> <p>Kasda, II. (<i>Vide page 4—N.</i>)</p> <p>λ 24 34 17·87 L 82 38 58·99 H 157·2 h 9 No. 2</p> <p>Kataia Hill Pagoda s. (<i>Mirzapur</i>) On hill, S. of the Grand Trunk Road from <i>Mirzapur</i> to <i>Allahabad</i>, and ¼ a mile S.E. of <i>Gaipura.</i></p> <p>λ 25 9 5·91 L 82 26 21·05 No. 185</p>	<p>Katra, IV. (<i>Vide page 4—N.</i>)</p> <p style="text-align: center;">o ' "</p> <p>λ 24 50 50·27 L 82 12 9·34 H 135·0 h 15 No. 4</p> <p>Katra Dák Bungalow s. (<i>Mirzapur</i>) On Sun-dial in the compound and 50 yards S.W. of the bungalow.</p> <p>λ 24 53 16·60 L 82 13 5·08 No. 145</p> <p>Katra Pass s. (<i>Mirzapur</i>) On head of the pass west of the road.</p> <p>λ 24 51 36·73 L 82 11 17·27 Nos. 142, 143</p> <p>Katra Patrol's Bungalow s. (<i>Mirzapur</i>) S.W. angle of the S.E. turret over staircase.</p> <p>λ 24 52 45·70 L 82 12 22·93 No. 144</p> <p>Kesra Hill Mark. (<i>Baghelkhand, Rewa State</i>) On the <i>Kaimúr</i> range.</p> <p>λ 24 30 19·04 L 81 50 50·00 Nos. 99, 100</p> <p>Ketulpur s. (<i>Jaunpur</i>) On mound in village, 0·4 of a mile W. of the large village of <i>Saipur</i>, and 0·7 of a mile S.E. of <i>Jiripura.</i></p> <p>λ 25 46 10·14 L 82 29 39·84 No. 264</p> <p>Khairagarh Fort s. (<i>Allahabad</i>) On fort near old gateway, 0·7 of a mile N. of <i>Barsaita</i> village.</p> <p>λ 25 10 53·38 L 82 6 18·94</p> <p>Khámária Shiwála, (<i>Mirzapur</i>) Spire.</p> <p>λ 25 14 26·8 L 82 33 6·3 No. 258</p>

* This height refers to the upper mark-stone of the tower and was determined as follows. The point leveled to was on a paka brick imbedded in earth on E. side of the tower of which the height=341·17 feet, and to this was added 12·42 feet (the height of the upper mark-stone above this brick).

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Khámerji h.s. (<i>Baghelkhand, Rewah State</i>) On a remarkable commanding peak forming the southern boundary of the Kaimúr range above the Son river, about 1½ miles N.N.E. of village of the same name, 2½ miles E.S.E. of Malakpur, 2½ miles W.S.W. of Karwi Kar village, and 2½ miles N.W. of Koludi.</p> <p style="text-align: center;">o ' "</p> <p>λ 24 31 26.59 L 81 57 33.28 No. 80</p>	<p>Kumeria, XXV. (<i>Vide page 7—N.</i>)</p> <p style="text-align: center;">o ' "</p> <p>λ 26 51 41.75 L 82 24 54.56 H, 305.12* h 27 No. 25</p>	<p>Machir h.s. (<i>Baghelkhand, Rewah State</i>) On the Drummond-ganj range, close to and E. of village of the same name, and 1½ miles N.W. of Rámpur.</p> <p style="text-align: center;">o ' "</p> <p>λ 24 37 49.90 L 81 58 15.95 No. 106.</p>
<p>Kheri Bungalow. (<i>Allahabad</i>) Chimney of Patrol's bungalow.</p> <p>λ 25 2 1.8 L 81 52 2.0</p>	<p>Kumeria Peak. (<i>Baghelkhand, Rewah State</i>) 1 mile S.W. of the village so called.</p> <p>λ 24 21 54 L 82 15 30 No. 67</p>	<p>Machlishahr s. (<i>Jaunpur</i>) On N.E. bastion of Tahsildári in centre of the city, close to and S.E. of Ghiswa town, and about 1 mile W. of Mirpur.</p> <p>λ 25 41 9.79 L 82 27 15.81 No. 268</p>
<p>Kodaili Hill Mark. (<i>Baghelkhand, Rewah State</i>) On a detached height belonging to the Drummondganj range.</p> <p>λ 24 42 36.31 L 82 7 51.99 Nos. 126, 127</p>	<p>Kusáhi Temple. (<i>Mirzapur</i>)</p> <p>λ 25 10 22.1 L 82 54 55.7 No. 51</p>	<p>Mahmudabad Munshi's Temple. (<i>Allahabad</i>)</p> <p>λ 25 24 24 L 81 57 2</p>
<p>Kohrár h.s. (<i>Allahabad</i>) On Bind range of hills S.W. of village of the same name.</p> <p>λ 25 8 19.37 L 82 0 6.53 Nos. 152, 153</p>	<p>Kusalpurwa Mark. (<i>Allahabad</i>) On the tank bund of the village so called on the Bind hills, 6 miles W. of Tikor principal station, and 1½ miles N.E. of Unchadeh; thána Bháratganj, pargana Khairagarh.</p> <p>λ 25 2 53.58 L 82 16 24.06 No. 151</p>	<p>Majgaon Hill Mark. (<i>Allahabad</i>) On E. extremity of an isolated hill S.E. of Barokhar.</p> <p>λ 24 53 40.79 L 82 1 33.67 Nos. 138, 139</p>
<p>Kohrár Temple. (<i>Allahabad</i>) Spire of white temple in city.</p> <p>λ 25 9 2.6 L 82 1 21.5 Nos. 160, 161</p>	<p>Kuti Ghát Temple. (<i>Allahabad</i>) On left bank of the Ganges river.</p> <p>λ 25 29 17.9 L 81 57 25.1 See Synoptical Volume of the Karára Meridional Series.</p>	<p>Mánapára, XXIX. (<i>Vide page 8—N.</i>)</p> <p>λ 27 13 18.67 L 82 22 14.52 H 347 h 30 No. 29</p>
<p>Kopa, XXVIII. (<i>Vide page 8—N.</i>)</p> <p>λ 27 7 3.74 L 82 15 15.40 H 365 h 20 No. 28</p>	<p>Lálganj h.s. (<i>Mirzapur</i>) About 2½ miles E. of village of the same name, and ¼ of a mile S. of the high road running S.W. from Mirzapur.</p> <p>λ 25 1 17.24 L 82 26 30.22 No. 169</p>	<p>Mao Temple. (<i>Fyzabad</i>) S. of Fyzabad.</p> <p>λ 26 44 14.1 L 82 9 26.6 No. 282</p>
<p>Korawa Rock. (<i>Baghelkhand, Rewah State</i>) Staff on precipitous rock S.E. of Bakshipahár.</p> <p>λ 24 55 52.5 L 81 50 1.0</p>	<p>Lálganj Pagoda. (<i>Mirzapur</i>) Spike or Kalas of dome of white pagoda.</p> <p>λ 25 0 47.9 L 82 23 51.2 No. 173</p>	<p>Mara Dome. (<i>Allahabad</i>) Also called Manda Dome; dome of white temple in Rája's house.</p> <p>λ 25 5 52.0 L 82 18 21.8 Nos. 176, 177</p>
<p>Kukra Shiwála, (<i>Allahabad</i>) Spire.</p> <p>λ 25 22 8.5 L 82 1 25.6 Nos. 244, 245</p>	<p>Lowana Tree. (<i>Allahabad</i>) In Centre of village.</p> <p>λ 25 21 48 L 81 57 22 No. 241</p>	<p>Mara East h.s. (<i>Allahabad</i>) Also called Manda h.s.; on a rock.</p> <p>λ 25 6 0.84 L 82 20 5.80 Nos. 174, 175</p>
		<p>Mara Temple. (<i>Allahabad</i>) Also called Manda Temple; spire of sandstone temple.</p> <p>λ 25 5 58.4 L 82 17 59.6 Nos. 180, 181</p>

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

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Mara West h.s. (Allahabad) Also called Manda h.s.; mark 80 yards E. of the hill temple.</p> <p>λ 25 6 20.77 L 82 18 54.11 No. 182</p>	<p>Meja, VI. (Vide page 4—N.)</p> <p>λ 25 7 10.16 L 82 9 20.56 H 498 h 8 No. 6</p>	<p>Mirzapur Great Shiwála. (Mirzapur) On right bank of the Ganges to N.W. side of the city.</p> <p>λ 25 9 5.4 L 82 36 53.8 No. 259</p>
<p>Maránadi s. (Fyzabad) On right bank of the Sarju river, about $\frac{1}{2}$ of a mile N. of Bilári, and 1 mile N. of road from Tánda to Oudh.</p> <p>λ 26 41 34.60 L 82 20 10.57 Nos. 295, 296</p>	<p>Meja Fort. (Allahabad) Mark on S.E. side of the old fort.</p> <p>λ 25 8 36.0 L 82 9 3.9 No. 158</p>	<p>Mirzapur Large Shiwála. (Mirzapur) White Shiwála spire S. of the city.</p> <p>λ 25 8 51.4 L 82 35 33.6 No. 258</p>
<p>Marár, XI. (Vide page 5—N.)</p> <p>λ 25 41 17.20 L 82 16 46.18 H 371 h 22 No. 11</p>	<p>Meja h.s. (Allahabad) About $\frac{1}{2}$ of a mile S. of Meja village, and 1 mile W. of the Tahsildári.</p> <p>λ 25 7 52.32 L 82 8 37.63 No. 156</p>	<p>Mirzapur Shiwála, (Mirzapur) Spire.</p> <p>λ 25 15 53.7 L 82 19 19.3 No. 250</p>
<p>Matura s. (Mirzapur) On lands 500 yards S.W. of the village, about 1 mile S.W. of Mánikpur, and $\frac{1}{2}$ of a mile N.W. of Dulehpur.</p> <p>λ 25 1 32.10 L 82 22 7.27 No. 171</p>	<p>Meja Tahsildári, (Allahabad) N.E. turret.</p> <p>λ 25 8 32.0 L 82 8 40.3</p>	<p>Mohári h.s. (Mirzapur) About a mile S.E. of Mohári Khurd, $1\frac{1}{2}$ miles N. of Mohári Kalán, and $2\frac{1}{2}$ miles N.E. of Bijaipur.</p> <p>λ 25 7 52.08 L 82 28 19.34 Nos. 49, 50</p>
<p>Matwár s. (Mirzapur) On S. bund of tank, about $\frac{1}{2}$ of a mile N.W. of village of that name, and $1\frac{1}{2}$ miles S.W. of Majhgawan.</p> <p>λ 24 43 10.56 L 82 29 58.05</p>	<p>Meja Tahsildári, (Allahabad) S.E. turret.</p> <p>λ 25 8 31.1 L 82 8 40.1 No. 157</p>	<p>Moia N. Shiwála, (Mirzapur) Spire.</p> <p>λ 25 10 16.7 L 82 34 48.0 Nos. 254, 255</p>
<p>Mau Dák Bungalow, (Baghelkhand, Rewah State) Chimney.</p> <p>λ 24 39 52.5 L 81 55 20.0</p>	<p>Mirzapur Bungalow, (Mirzapur) Mr. Evans's.</p> <p>λ 25 9 39.7 L 82 36 59.5 Nos. 53, 54</p>	<p>Moia S. Shiwála, (Mirzapur) Spire.</p> <p>λ 25 10 5.4 L 82 34 31.0 No. 256</p>
<p>Mau Rock s. (Baghelkhand, Rewah State) On flat rocks S.W. of the Dák bungalow.</p> <p>λ 24 39 41.4 L 81 55 8.3 Nos. 108, 109</p>	<p>Mirzapur Cantonment, (Mirzapur) S.E. angle of terrace.</p> <p>λ 25 10 55.0 L 82 38 15.9 Nos. 55, 56</p>	<p>Moia s. (Allahabad) Also called Allahabad No. 1 s.; 0.6 of a mile N.W. of village of the same name.</p> <p>λ 25 23 19.65 L 81 56 29.36 No. 258</p>
<p>Mau Temple. (Baghelkhand, Rewah State) Spire of white temple in the fort.</p> <p>λ 24 39 10.5 L 81 54 9.9 No. 107</p>	<p>Mirzapur Church, (Mirzapur) Steeple.</p> <p>λ 25 9 42.8 L 82 38 10.3 Nos. 186, 240</p>	<p>Morchía h.s. (Baghelkhand, Rewah State) Mark on hill 3 miles S.E. of Pokra village.</p> <p>λ 24 16 34.49 L 82 34 9.12 See Morchía of the Synoptical Volume of the Calcutta Longitudinal Series of the South-East Quadrilateral.</p>
<p>Mauganj Temple. (Baghelkhand, Rewah State) Spire of white temple in the bazar.</p> <p>λ 24 40 4.0 L 81 54 48.8</p>	<p>Mirzapur Court House, (Mirzapur) New.</p> <p>λ 25 9 18.2 L 82 37 24.1 No. 53</p>	<p>Moti Taláo Temple. (Mirzapur)</p> <p>λ 25 9 22.7 L 82 30 16.7</p>

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Múgarikot s. (<i>Mirzapur</i>) On N.E. angle of an old fort W. of the village.</p> <p style="text-align: center;">o ' "</p> <p>λ 24 52 51·80 L 82 13 5·92 No. 135</p>	<p>Newa, XVI. (<i>Vide page 6—N.</i>)</p> <p style="text-align: center;">o ' "</p> <p>λ 26 5 35·33 L 82 9 39·52 H 355 h 26 No. 16</p>	<p>Oudh Temple No. 3. (<i>Fyzabad</i>)</p> <p style="text-align: center;">o ' "</p> <p>λ 26 48 33·6 L 82 14 43·4</p>
<p>Murchia, I. (<i>Vide page 4—N.</i>)</p> <p>λ 24 34 49·34 L 82 23 26·80 H 1640 h 9 No. 1</p>	<p>Newáda, XIII. (<i>Vide page 6—N.</i>)</p> <p>λ 25 50 18·51 L 82 17 42·99 H 332 h 24 No. 13</p>	<p>Oudh Temple s. (<i>Fyzabad</i>) On right bank, of the Gogra river, on platform of temple at Rájghat in the city of Oudh.</p> <p>λ 26 48 32·84 L 82 14 46·90</p>
<p>Murda Hill Temple, (<i>Baghelkhand, Rewah State</i>) N.E. of village.</p> <p>λ 24 28 45·8 L 82 5 43·0 No. 97</p>	<p>Orejhar, XXIV. (<i>Vide page 7—N.</i>)</p> <p>λ 26 46 55·54 L 82 14 34·78 H 392·16* h 8 No. 24</p>	<p>Pahári h.s. (<i>Baghelkhand, Rewah State</i>) On a detached hill S. of village of the same name, about $\frac{1}{2}$ of a mile S.W. of Baihera, and $1\frac{1}{4}$ miles E. of Dhuman.</p> <p>λ 24 31 36·71 L 82 5 2·14 Nos. 91, 92</p>
<p>Murli h.s. (<i>Mirzapur</i>) On a detached peak of the Kaimúr range, 4 miles S.W. of Halía.</p> <p>λ 24 47 26·81 L 82 18 37·55 Nos. 112, 113</p>	<p>Oudh Masjid No. 1, (<i>Fyzabad</i>) N. Minaret.</p> <p>λ 26 48 25·5 L 82 14 48·7</p>	<p>Paighambarpur Dargah, (<i>Allahabad</i>) Centre.</p> <p>λ 25 31 9·0 L 81 58 11·8</p>
<p>Nagrai Rock s. (<i>Baghelkhand, Rewah State</i>) On southern face of the Drummondganj range, about $1\frac{1}{4}$ miles W. of Dammodagarh, and $1\frac{1}{4}$ miles S.E. of Rámpur village.</p> <p>λ 24 36 25·02 L 82 0 22·76 No. 98</p>	<p>Oudh Masjid No. 1, (<i>Fyzabad</i>) S. minaret.</p> <p>λ 26 48 24·9 L 82 14 48·6</p>	<p>Panasa Tree. (<i>Allahabad</i>) On old fort.</p> <p>λ 25 16 21 L 82 5 26</p>
<p>Nansa, XXI. (<i>Vide page 7—N.</i>)</p> <p>λ 26 31 45·70 L 82 19 52·27 H 344 h <i>Not forthcoming</i> No. 21</p>	<p>Oudh Masjid No. 2, (<i>Fyzabad</i>) N. minaret.</p> <p>λ 26 48 32·5 L 82 14 48·7</p>	<p>Pándipura h.s. (<i>Mirzapur</i>) About $1\frac{1}{4}$ miles N.E. of Dube Patti, and $\frac{1}{2}$ of a mile S.W. of Parsa village.</p> <p>λ 25 6 43·63 L 82 31 22·35 Nos. 46, 165, 168</p>
<p>Naun Hill Mark. (<i>Baghelkhand, Rewah State</i>) On N. face of the Drummondganj range.</p> <p>λ 24 46 20·39 L 82 13 17·23 No. 123</p>	<p>Oudh Masjid No. 2, (<i>Fyzabad</i>) S. minaret.</p> <p>λ 26 48 31·5 L 82 14 48·6</p>	<p>Panjerio Hill Mark. (<i>Baghelkhand, Rewah State</i>)</p> <p>λ 24 29 10·09 L 82 44 18·73 Nos. 37, 38</p>
<p>Naun Temple, (<i>Baghelkhand, Rewah State</i>) Spire.</p> <p>λ 24 44 33·2 L 82 11 40·1 No. 128</p>	<p>Oudh Temple No. 1. (<i>Fyzabad</i>) Spire of great temple called Rámádhín's temple.</p> <p>λ 26 47 45·7 L 82 14 55·1 No. 285</p>	<p>Parila Temple, (<i>Allahabad</i>) Spire.</p> <p>λ 25 32 47·2 L 81 56 15·1</p>
	<p>Oudh Temple No. 2. (<i>Fyzabad</i>) Spire of N. temple.</p> <p>λ 26 48 11·6 L 82 15 1·9 Nos. 293, 294</p>	<p>Parípura, XIV. (<i>Vide page 6—N.</i>)</p> <p>λ 25 54 33·57 L 82 9 4·94 H 332 h 20 No. 14</p>

* This height refers to the mark-stone let into the upper surface of the pillar. This height as determined by Revenue Survey Spirit Levelling Operations is 392·23 feet.

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Parsádi Temple. (Allahabad) Spire of temple on high road.</p> <p style="text-align: center;">o ' "</p> <p>λ 25 34 57·1 L 82 10 10·3</p>	<p>Rájapur h.s. (Mirzapur) About 1½ miles N.E. of Dikhwah, and 1½ miles S. of Umariá Sardar Gir.</p> <p style="text-align: center;">o ' "</p> <p>λ 24 56 35·92 L 82 45 44·34 Nos. 42, 43</p>	<p>Sabkalai h.s. (Baghelkhand, Rewah State) On the Drummond-ganj range S.W. of Baisaur village.</p> <p style="text-align: center;">o ' "</p> <p>λ 24 48 18·27 L 82 5 20·49 No. 116</p>
<p>Parsía s. (Mirzapur) On N.E. angle of tank bund, about ¼ of a mile N.W. of Parsía Khurd, 1½ miles W. of Jhagaha village, and ¼ of a mile S. of Murpeli.</p> <p>λ 24 36 57·42 L 82 24 34·24 No. 105</p>	<p>Rája Taláo Temple. (Mirzapur) Or Baggah Temple.</p> <p>λ 25 15 48·7 L 82 53 21·5 No. 59</p>	<p>Saibara, XLIII. † (Vide page 8—N.)</p> <p>λ 27 26 58·94 L 82 8 0·31 H_s 389·90§ h 24 No. 32</p>
<p>Pátpára h.s. (Baghelkhand, Rewah State) On range ¼ of a mile S.E. of village of the same name, 1½ miles N.E. of Kakraba, and ¼ of a mile W. of Salia village.</p> <p>λ 24 28 44·80 L 81 56 12·54 Nos. 93, 94</p>	<p>Rajauli Paka House s. (Fyzabad) On right bank of the Gogra river, on a paka house belonging to the late queen of Fyzabad near Guptar Ghat one of the remarkable places of pilgrimage.</p> <p>λ 26 48 11·27 L 82 10 7·76</p>	<p>Saifabad, XV. (Vide page 6—N.)</p> <p>λ 26 1 5·10 L 82 18 58·32 H 340 h 12 No. 15</p>
<p>Paua h.s. (Mirzapur) Also called Manjarah h.s.; ¼ of a mile N.E. of Newrha Mánpuri, and ¼ of a mile S.W. of Hutwa Mánpuri.</p> <p>λ 25 5 35·34 L 82 41 57·78 Nos. 44, 45</p>	<p>Rájgarh Temple. (Baghelkhand, Rewah State)</p> <p>λ 24 33 20·7 L 82 12 15·6</p>	<p>Sanderipahár Hill Mark. (Baghelkhand, Rewah State) On the peak of the range running N.E. from Gurdari Hill Mark.</p> <p>λ 24 24 36·12 L 82 27 20·22 No. 69</p>
<p>Phúlpur Temple. (Allahabad) Spire of temple in city.</p> <p>λ 25 32 57·2 L 82 8 8·6</p>	<p>Rámapura, XII. (Vide page 5—N.)</p> <p>λ 25 44 55·09 L 82 8 7·76 H 356 h 30 No. 12</p>	<p>Sansárpur Hill Mark. (Allahabad) On S. edge of the Kaimúr range.</p> <p>λ 24 52 26·98 L 82 7 50·88 No. 134</p>
<p>Pokra, XXXI.* (Vide page 4—N.)</p> <p>λ 24 18 47·97 L 82 31 5·68 H 2207 h 3 No. 1</p>	<p>Rámpur Shiwála. (Mirzapur) Spire of Shiwála on S. bank of the Ganges.</p> <p>λ 25 15 2·5 L 82 27 49·2 No. 251</p>	<p>Sarái Masjid, (Allahabad) S.W. minaret.</p> <p>λ 25 29 24·4 L 82 15 38·0 No. 261</p>
<p>Pokra s. (Baghelkhand, Rewah State) Mark at the village.</p> <p>λ 24 18 19·48 L 82 31 38·26 See Synoptical Volume of the Calcutta Longitudinal Series of the South-East Quadrilateral.</p>	<p>Rarauli, XX. (Vide page 6—N.)</p> <p>λ 26 26 54·27 L 82 10 43·82 H 357 h 32 No. 20</p>	<p>Saráia s. (Jaunpur) On S.W. bank of an old tank, about 0·2 of a mile S. of village of the same name, 1·7 miles N.E. of Kasni, and 0·9 of a mile N.W. of Marsil village.</p> <p>λ 25 41 57·47 L 82 32 55·02 No. 265</p>
<p>Ráhet, XXII. (Vide page 7—N.)</p> <p>λ 26 37 1·92 L 82 10 53·86 H_s 343·80† h 25·5 No. 22</p>	<p>Sabanjot, XXVII. (Vide page 7—N.)</p> <p>λ 27 2 53·90 L 82 25 39·64 H 333 h 32 No. 27</p>	<p>Sarju River s. (Fyzabad) On right bank, about ¼ of a mile N. of Tekeah, and 1 mile E. of Ajudhya Deh.</p> <p>λ 26 44 38·54 L 82 16 35·30 Nos. 291, 292</p>

* Of the Calcutta Longitudinal Series of the S. E. Quadrilateral. † This height refers to the mark-stone let into the ground floor of the tower.
‡ Of the North-East Longitudinal Series. § This height refers to the mark-stone let at 1½ inches below the upper surface of the pillar.

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Sathar s. (Allahabad) On tree, about $\frac{1}{4}$ of a mile N.W. of Mamraj Sarai masjid, and 1 mile S.W. of Sarai masjid.</p> <p>λ 25 28 53·01 L 82 14 59·33 No. 260</p>	<p>Siwara h.s. (Mirzapur) On the hill 3 miles E. of Lalganj.</p> <p>λ 25 0 0·37 L 82 27 30·50 No. 164</p>	<p>Tendua h.s. (Baghelkhand, Rewah State) About $2\frac{1}{4}$ miles N.E. of Sirua, and the same distance S.W. of Nauriah village.</p> <p>λ 24 28 29·70 L 82 30 39·85 No. 33</p>
<p>Seona, IX. (Vide page 5—N.)</p> <p>λ 25 27 33·51 L 82 18 30·96 H 333 h 23 No. 9</p>	<p>Sohagi Hill Mark. (Baghelkhand, Rewah State) W. of high road, about 1 mile W. of the village.</p> <p>λ 24 58 22·90 L 81 43 41·20</p>	<p>Tharwa Factory. (Allahabad) Also called Thorui factory; flag on top of Mr. Sander's house.</p> <p>λ 25 32 33 L 81 57 32</p>
<p>Shiopur House. (Mirzapur) Staircase of a high house.</p> <p>λ 25 9 56·7 L 82 31 51·5 No. 252</p>	<p>Sugringari Tomb s. (Fyzabad) On tomb S. of Oudh, about $\frac{1}{4}$ of a mile N.W. of Kasuna on the Grand Trunk Road from Oudh to Fyzabad.</p> <p>λ 26 47 35·22 L 82 14 8·97 No. 286</p>	<p>Tikeria, XXVI. (Vide page 7—N.)</p> <p>λ 26 57 26·86 L 82 16 27·96 H 348 h 26 No. 26</p>
<p>Shiopur Temple. (Mirzapur) Spire of Mahadeo's temple.</p> <p>λ 25 10 12·8 L 82 32 1·1</p>	<p>Tanda Masjid No. 1, (Fyzabad) S. minaret.</p> <p>λ 26 33 12·4 L 82 42 18·0</p>	<p>Tikor, V. (Vide page 4—N.)</p> <p>λ 25 3 53·27 L 82 21 58·17 H 542 h 16 No. 5</p>
<p>Sihawal h.s. (Baghelkhand, Rewah State) On rocks W. of the village, about $\frac{1}{4}$ of a mile S. of the road along N. bank of the Son river, and 1 mile S. of Ladbah village.</p> <p>λ 24 33 37·27 L 82 16 28·31 Nos. 86, 87</p>	<p>Tanda Masjid No. 1, (Fyzabad) N. minaret.</p> <p>λ 26 33 12·7 L 82 42 18·0</p>	<p>Tikor Hill Mark. (Mirzapur) On the highest part and to N.E. side of the hill.</p> <p>λ 25 5 35·26 L 82 23 41·45 Nos. 178, 179</p>
<p>Sikandra Temple, (Allahabad) In city.</p> <p>λ 25 35 15·6 L 82 1 6·1</p>	<p>Tanda Masjid No. 2, (Fyzabad) S. minaret.</p> <p>λ 26 33 19·5 L 82 42 14·6</p>	<p>Tons and Belan Junction s. (Baghelkhand, Rewah State) At the junction, 0·2 of a mile S.W. of Gurkata village.</p> <p>λ 25 1 57·51 L 81 47 56·14</p>
<p>Sirmaul s. (Allahabad) Also called Sirhaul s.; on S.E. bund of tank, 0·6 of a mile S. of village of the same name.</p> <p>λ 24 57 20·43 L 82 15 48·77</p>	<p>Tand Masjid No. 2, (Fyzabad) N. minaret.</p> <p>λ 26 33 20·0 L 82 42 14·6</p>	<p>Tulsipur Pagoda, (Mirzapur) Dome, N. of the great road.</p> <p>λ 25 2 22·2 L 82 27 24·4 No. 170</p>
<p>Sirwara, XVIII. (Vide page 6—N.)</p> <p>λ 26 16 23·86 L 82 9 57·19 H 348 h 28 No. 18</p>	<p>Taripater Rock s. (Baghelkhand, Rewah State) On southern face of the Drummondganj range, about $1\frac{1}{4}$ miles S.E. of Baroha, and $1\frac{1}{4}$ miles N.E. of Sardawan village.</p> <p>λ 24 36 43·72 L 82 5 55·66 Nos. 101, 102</p>	<p>Urkutia Hill Mark. (Baghelkhand, Rewah State) On a great peak, 3 miles N.E. of Kumoria, and 3 miles N. of Jiawan.</p> <p>λ 24 22 11·89 L 82 19 20·69 Nos. 62, 63</p>
<p>Siwara s. (Baghelkhand, Rewah State) Mark 20 yards S.W. from the stump of a pipal tree.</p> <p>λ 24 17 52·42 L 82 20 54·30 No. 66</p>	<p>Tatpahar Hill Mark. (Baghelkhand, Rewah State) On Tatpahar range, N. of Parira village.</p> <p>λ 24 25 9·27 L 82 9 16·61 No. 70</p>	<p>X s. (Jaunpur) In field, close to and W. of the Grand Trunk Road from Benares to Jaunpur, about $\frac{1}{4}$ of a mile N. of Hossinabad, and $\frac{1}{4}$ of a mile N. of Jaunpur Cantonment Telegraph Post; thana Haveli Jaunpur.</p> <p>λ 25 44 19·63 L 82 43 43·21 No. 275</p>
<p>Siwara h.s. (Baghelkhand, Rewah State) On Tatpahar range, N.W. of Kochipur village.</p> <p>λ 24 24 17·25 L 82 7 11·10 No. 68</p>		

GURWANI MERIDIONAL SERIES.

SUPPLEMENTARY LIST OF
CO-ORDINATES AND DESCRIPTIONS OF STATIONS AND POINTS.

Since the printing of the Alphabetical List of all stations and points it has been decided to include a further portion of the Ganges River Triangulation in this Volume, the stations of which appear below. In addition to the usual information the year when the point was fixed is also given.

Name of station, district, description, co-ordinates, &c.	Name of station, district, description, co-ordinates, &c.	Name of station, district, description, co-ordinates, &c.
Balipurwa Village. 1848. (<i>Mirzapur</i>). $\begin{array}{r} \lambda \quad 25 \quad 11 \quad 36 \\ L \quad 82 \quad 36 \quad 36 \end{array}$	Bedauli House, In village. 1848. (<i>Mirzapur</i>). $\begin{array}{r} \lambda \quad 25 \quad 11 \quad 0 \\ L \quad 82 \quad 43 \quad 9 \end{array}$	Bhogaon Temple. 1848. (<i>Mirzapur</i>). $\begin{array}{r} \lambda \quad 25 \quad 13 \quad 36 \cdot 3 \\ L \quad 82 \quad 36 \quad 23 \cdot 8 \end{array}$
Baria Temple, On ghat. 1848. (<i>Mirzapur</i>). $\begin{array}{r} \lambda \quad 25 \quad 9 \quad 10 \cdot 9 \\ L \quad 82 \quad 36 \quad 54 \cdot 0 \end{array}$	Behari House, In village. 1848. (<i>Mirzapur</i>). $\begin{array}{r} \lambda \quad 25 \quad 13 \quad 15 \\ L \quad 82 \quad 38 \quad 34 \end{array}$	Bisundarpur House, In village. 1848. (<i>Mirzapur</i>). $\begin{array}{r} \lambda \quad 25 \quad 10 \quad 29 \\ L \quad 82 \quad 38 \quad 28 \end{array}$
Basahi House. Two storied house in village. 1848. (<i>Mirzapur</i>). $\begin{array}{r} \lambda \quad 25 \quad 9 \quad 6 \cdot 0 \\ L \quad 82 \quad 34 \quad 56 \cdot 5 \end{array}$	Bhatauli Hut, On ghat. 1848. (<i>Mirzapur</i>). $\begin{array}{r} \lambda \quad 25 \quad 12 \quad 2 \\ L \quad 82 \quad 42 \quad 55 \end{array}$	Chapaur House, In village. 1848. (<i>Mirzapur</i>). $\begin{array}{r} \lambda \quad 25 \quad 12 \quad 32 \\ L \quad 82 \quad 41 \quad 52 \end{array}$
Batauwa Bungalow. Top of factory bungalow. 1848. (<i>Mirzapur</i>). $\begin{array}{r} \lambda \quad 25 \quad 8 \quad 36 \cdot 1 \\ L \quad 82 \quad 51 \quad 15 \cdot 7 \end{array}$	Bhiti Temple. 1848. (<i>Mirzapur</i>). $\begin{array}{r} \lambda \quad 25 \quad 14 \quad 2 \cdot 7 \\ L \quad 82 \quad 38 \quad 46 \cdot 7 \end{array}$	Chila Shiwala, Flag. 1848. (<i>Mirzapur</i>). $\begin{array}{r} \lambda \quad 25 \quad 9 \quad 32 \cdot 4 \\ L \quad 82 \quad 36 \quad 4 \cdot 1 \end{array}$

Name of station, district, description, co-ordinates, &c.	Name of station, district, description, co-ordinates, &c.	Name of station, district, description, co-ordinates, &c.
<p>Chunar Fort, Flagstaff. 1848. (<i>Mirzapur</i>).</p> <p style="text-align: center;">o ' "</p> <p>λ 25 7 30·0 L 82 55 1·6</p> <p>See Synoptical Vol. of the Gora Meridional Series.</p>	<p>Ganges River No. 56 s. On left bank. 1848. (<i>Mirzapur</i>).</p> <p style="text-align: center;">o ' "</p> <p>λ 25 9 48·18 L 82 37 31·88</p>	<p>Ganges River No. 66 s. On left bank, 1·5 miles S.E. of Sasepura village house, and 100 yards W.S.W. of Bhogaon village house. 1848. (<i>Mirzapur</i>).</p> <p style="text-align: center;">o ' "</p> <p>λ 25 13 36·48 L 82 36 34·00</p>
<p>Chunar Fort, Sentry box in S.W. angle. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 7 11·2 L 82 55 7·9</p>	<p>Ganges River No. 57 s. On right bank. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 9 56·94 L 82 38 13·50</p>	<p>Ganges River No. 67 s. On right bank. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 12 51·70 L 82 37 22·26</p>
<p>Fulaha Temple. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 9 31·0 L 82 49 10·8</p>	<p>Ganges River No. 58 s. On left bank and about 0·1 of a mile from it. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 10 30·54 L 82 38 7·64</p>	<p>Ganges River No. 68 s. Also called Pachaura Village s., on left bank, 0·3 of a mile W.S.W. of Pachaura temple, and 100 feet E.S.E. of Pachaura village house. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 13 44·58 L 82 37 27·10</p>
<p>Gagraon Temple, In village. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 14 2·7 L 82 38 46·3</p>	<p>Ganges River No. 59 s. On right bank. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 10 32·53 L 82 38 24·52</p>	<p>Ganges River No. 69 s. On right bank, 0·2 of a mile N.W. of Nauria village. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 13 19·96 L 82 37 47·11</p>
<p>Ganges River No. 50 s. On left bank, 0·5 of a mile W. of Moia building. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 9 59·68 L 82 34 3·74</p>	<p>Ganges River No. 60 s. On right bank. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 11 2·10 L 82 38 6·33</p>	<p>Ganges River No. 70 s. On left bank. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 13 55·85 L 82 38 20·61</p>
<p>Ganges River No. 51 s. On right bank. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 9 6·86 L 82 35 1·43</p>	<p>Ganges River No. 61 s. On left bank, 0·3 of a mile E. of Bara Kolua, and 0·5 of a mile E.S.E. of Chhota Kolua village. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 10 52·86 L 82 37 51·14</p>	<p>Ganges River No. 71 s. On right bank, 0·1 of a mile N.N.E. of Behari village. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 13 21·45 L 82 38 37·50</p>
<p>Ganges River No. 52 s. On left bank, 0·2 of a mile S.S.W. of Purāna Bara. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 9 30·91 L 82 35 15·88</p>	<p>Ganges River No. 62 s. On right bank. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 11 43·78 L 82 37 23·88</p>	<p>Ganges River No. 72 s. On left bank. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 14 0·54 L 82 39 12·89</p>
<p>Ganges River No. 53 s. On right bank. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 9 4·26 L 82 36 20·55</p>	<p>Ganges River No. 63 s. Also called Saunkapura Village s., on left bank. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 11 24·53 L 82 36 52·86</p>	<p>Ganges River No. 73 s. On right bank, 0·5 of a mile N.N.W. of Khutaha village, and 0·6 of a mile N.N.E. of Nauhan. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 13 14·58 L 82 39 28·93</p>
<p>Ganges River No. 54 s. On left bank, 0·3 of a mile S.W. of Gargari house, and 0·1 of a mile S. of Shiodat Singh's temple. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 9 28·86 L 82 36 47·29</p>	<p>Ganges River No. 64 s. Also called Taksari Village s., on left bank, 50 yards N. of Taksari village. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 12 10·97 L 82 36 2·15</p>	<p>Ganges River No. 74 s. On left bank. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 13 53·48 L 82 41 2·42</p>
<p>Ganges River No. 55 s. Also called Mirzapur Court House s. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 9 18·28 L 82 37 23·79</p>	<p>Ganges River No. 65 s. On right bank. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 12 19·72 L 82 37 6·14</p>	<p>Ganges River No. 75 s. On right bank, 0·1 of a mile N.N.W. of Sinhora village, and 0·6 of a mile W.N.W. of Mahādeva village. 1848. (<i>Mirzapur</i>).</p> <p>λ 25 12 49·60 L 82 40 30·11</p>

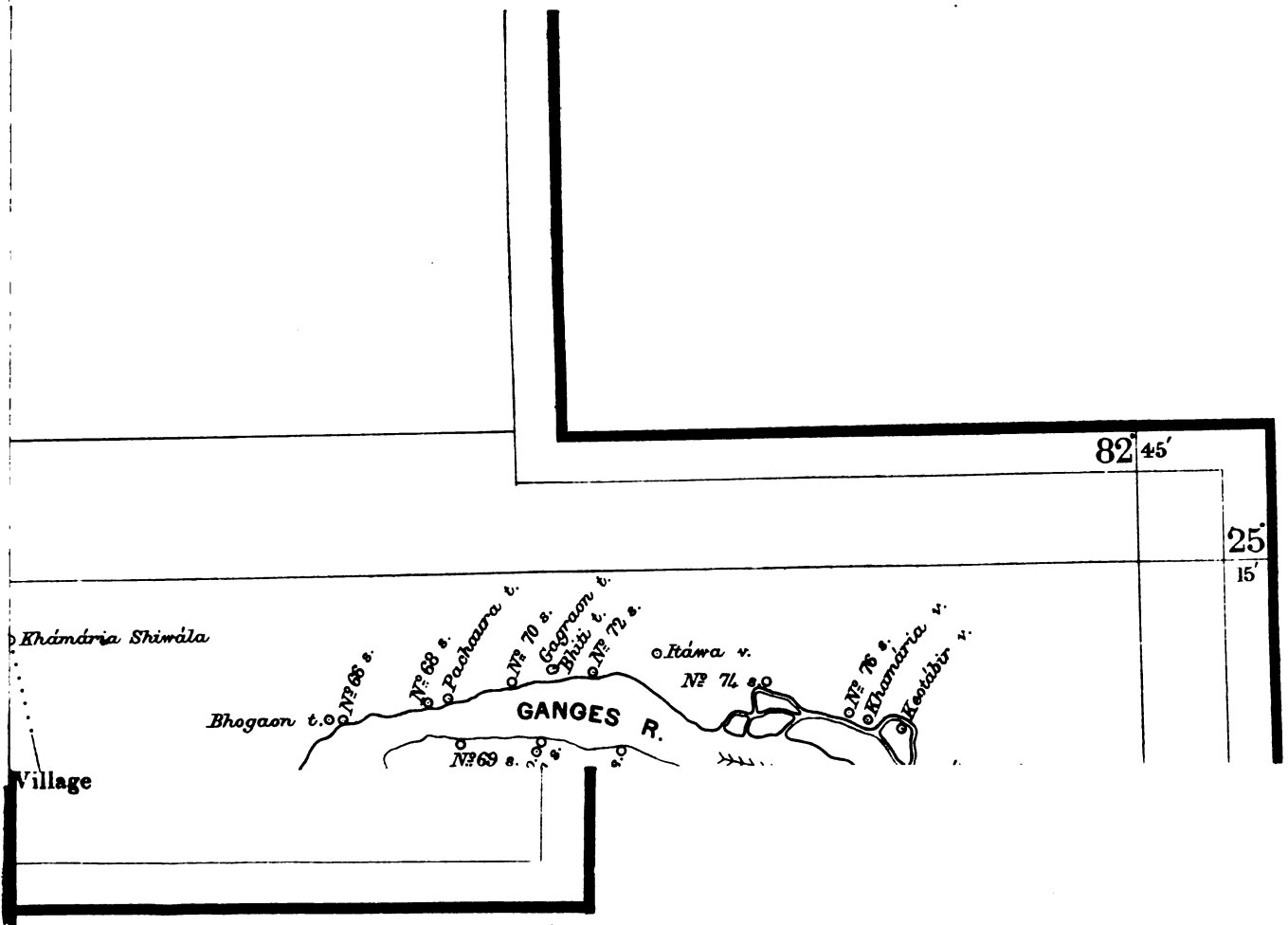
Name of station, district, description, co-ordinates, &c.	Name of station, district, description, co-ordinates, &c.	Name of station, district, description, co-ordinates, &c.
Ganges River No. 76 s. On left bank, 0·2 of a mile W.N.W. of Khamária village. 1848. (<i>Mirzapur</i>). λ 25 13 34·44 L 82 41 53·27	Ganges River No. 86 s. On left bank. 1848. (<i>Mirzapur</i>). λ 25 11 22·81 L 82 44 56·85	Ganges River No. 96 s. On left bank. 1848. (<i>Mirzapur</i>). λ 25 8 1·69 L 82 49 23·42
Ganges River No. 77 s. On right bank, 0·1 of a mile N.N.E. of Majgawa village, the same distance E.N.E. of Leru village, and 0·2 of a mile W.N.W. of Chapaur village. 1848. (<i>Mirzapur</i>). λ 25 12 40·36 L 82 41 31·39	Ganges River No. 87 s. On left bank. 1848. (<i>Mirzapur</i>). λ 25 10 54·13 L 82 45 37·26	Ganges River No. 97 s. On right bank. 1848. (<i>Mirzapur</i>). λ 25 7 15·16 L 82 49 48·08
Ganges River No. 78 s. On right bank. 1848. (<i>Mirzapur</i>). λ 25 12 35·31 L 82 41 52·15	Ganges River No. 88 s. On right bank, 0·5 of a mile E. of Chatáha village, and 0·3 of a mile N.N.E. of Dharmdeva village. 1848. (<i>Mirzapur</i>). λ 25 10 4·41 L 82 45 8·01	Ganges River No. 98 s. On left bank, 0·6 of a mile S.E. of Rámgarh village house, and 0·3 of a mile S.S.W. of Gahmai village house. 1848. (<i>Mirzapur</i>). λ 25 7 27·03 L 82 50 9·21
Ganges River No. 79 s. On left bank. 1848. (<i>Mirzapur</i>). λ 25 12 59·67 L 82 43 4·08	Ganges River No. 89 s. On left bank. 1848. (<i>Mirzapur</i>). λ 25 10 34·04 L 82 46 35·57	Ganges River No. 99 s. On right bank, 0·1 of a mile N.N.E. of Suraisa vil- lage. 1848. (<i>Mirzapur</i>). λ 25 7 4·17 L 82 50 26·82
Ganges River No. 80 s. On right bank, 0·1 of a mile E.N.E. of Bhatauli village, and the same distance N.W. of Bhatauli bázár. 1848. (<i>Mirzapur</i>). λ 25 12 5·75 L 82 42 49·18	Ganges River No. 90 s. On right bank. 1848. (<i>Mirzapur</i>). λ 25 9 18·19 L 82 45 52·04	Ganges River No. 100 s. On left bank, 0·5 of a mile S.W. of Gornia village house, and 0·6 of a mile W.S.W. of Sikhar build- ing. 1848. (<i>Mirzapur</i>). λ 25 7 21·25 L 82 51 2·67
Ganges River No. 81 s. Also called Jaunsara Village s., on right bank. 1848. (<i>Mirzapur</i>). λ 25 11 54·08 L 82 43 7·15	Ganges River No. 91 s. On right bank, 0·1 of a mile N.N.W. of Nánupura village. 1848. (<i>Mirzapur</i>). λ 25 8 28·20 L 82 47 22·72	Ganges River No. 101 s. On right bank, 0·3 of a mile E. of Sindhaura vil- lage. 1848. (<i>Mirzapur</i>). λ 25 6 38·64 L 82 51 33·32
Ganges River No. 82 s. On left bank, 0·3 of a mile S.W. of Baraini village house, and 0·4 of a mile W.S.W. of Baraini temple. 1848. (<i>Mirzapur</i>). λ 25 12 25·93 L 82 43 46·60	Ganges River No. 92 s. On left bank, 0·5 of a mile S.S.W. of Bidyapur village. 1848. (<i>Mirzapur</i>). λ 25 10 24·22 L 82 48 5·46	Ganges River No. 102 s. On left bank, 0·2 of a mile W.S.W. of Bithalpur village house. 1848. (<i>Mirzapur</i>). λ 25 7 12·47 L 82 51 43·88
Ganges River No. 83 s. On right bank. 1848. (<i>Mirzapur</i>). λ 25 11 26·34 L 82 43 41·57	Ganges River No. 93 s. On left bank, 0·7 of a mile S.S.E. of Gosáinpara village, and 0·9 of a mile S. of Shiopura village. 1848. (<i>Mirzapur</i>). λ 25 9 26·02 L 82 48 44·44	Ganges River No. 103 s. On left bank, 0·2 of a mile W.S.W. of Silpi village. 1848. (<i>Mirzapur</i>). λ 25 7 1·64 L 82 52 31·28
Ganges River No. 84 s. On left bank. 1848. (<i>Mirzapur</i>). λ 25 11 51·91 L 82 44 24·90	Ganges River No. 94 s. On left bank, 0·5 of a mile N.N.W. of Paimápur village house, and 0·3 of a mile N. of Kantápura village house. 1848. (<i>Mirzapur</i>). λ 25 8 38·12 L 82 48 52·53	Ganges River No. 104 s. On right bank, 0·1 of a mile N.E. of Dhaurára vil- lage. 1848. (<i>Mirzapur</i>). λ 25 6 24·09 L 82 52 43·44
Ganges River No. 85 s. On right bank, 0·3 of a mile E.S.E. of Gautampatti village, and 0·2 of a mile N. of Baktambo village. 1848. (<i>Mirzapur</i>). λ 25 10 52·76 L 82 44 19·63	Ganges River No. 95 s. On right bank. 1848. (<i>Mirzapur</i>). λ 25 7 59·13 L 82 48 8·63	Ganges River No. 105* s. On left bank, 0·8 of a mile S.W. of Madhi village building. 1848. (<i>Mirzapur</i>). λ 25 7 5·19 L 82 53 2·47

* The continuation of the Ganges River Triangulation to the east will be found in the Co-ordinate List of the Gora Meridional Series, where the stations are numbered afresh and not in continuation of those here given.

Name of station, district, description, co-ordinates, &c.	Name of station, district, description, co-ordinates, &c.	Name of station, district, description, co-ordinates, &c.
Gosáinpara Mat. 1848. (<i>Mirzapur</i>). o ' " λ 25 12 28·7 L 82 35 49·3	Mirzapur House No. 2. Parthráam Mahant's house. 1848. (<i>Mirzapur</i>). o ' " λ 25 8 41·6 L 82 35 49·8	Narghát Masjid, E. minaret. 1848. (<i>Mirzapur</i>). o ' " λ 25 8 57·1 L 82 36 8·3
Gosáinpara Temple. 1848. (<i>Mirzapur</i>). λ 25 9 31·1 L 82 49 10·7	Mirzapur House No. 3. Hamilton & Co's house chimney. 1848. (<i>Mirzapur</i>). λ 25 9 7·9 L 82 36 45·7	Narghát Masjid, W. minaret. 1848. (<i>Mirzapur</i>). λ 25 8 57·1 L 82 36 7·7
Itáwa Village. 1848. (<i>Mirzapur</i>). λ 25 14 10 L 82 39 53	Mirzapur House No. 4. Mr. Money's house chimney. 1848. (<i>Mirzapur</i>). λ 25 9 44·1 L 82 38 1·8	Pachaura Temple. 1848. (<i>Mirzapur</i>). λ 25 13 47·9 L 82 37 41·3
Jaunsara Mat. 1848. (<i>Mirzapur</i>). λ 25 11 46·0 L 82 43 10·7	Mirzapur House No. 5. Tiled house chimney. 1848. (<i>Mirzapur</i>). λ 25 10 8·7 L 82 38 20·3	Pipardar House, In village. 1848. (<i>Mirzapur</i>). λ 25 11 24 L 82 37 49
Kachahwa Mound. 1848. (<i>Mirzapur</i>). λ 25 12 6·9 L 82 45 14·8	Mirzapur, Mission Church, Turret. 1848. (<i>Mirzapur</i>). λ 25 9 11·7 L 82 37 17·8	Rámgarh Temple. 1848. (<i>Mirzapur</i>). λ 25 7 56·0 L 82 49 36·4
Keotábir Village. 1848. (<i>Mirzapur</i>). λ 25 13 25 L 82 42 27	Mirzapur s. <i>Vide</i> Ganges River No. 55 s.	Sabesar House, In village. 1848. (<i>Mirzapur</i>). λ 25 13 10 L 82 49 12
Khamária Village. 1848. (<i>Mirzapur</i>). λ 25 13 31 L 82 42 6	Munjhara Dharmśála. 1848. (<i>Mirzapur</i>). λ 25 12 28·8 L 82 35 49·1	Semra House, In village. 1848. (<i>Mirzapur</i>). λ 25 12 1 L 82 37 16
Leru Temple. 1848. (<i>Mirzapur</i>). λ 25 12 38·8 L 82 40 56·7	Munjhara House, In Bara Munjhara village. 1848. (<i>Mirzapur</i>). λ 25 12 50 L 82 35 36	Shamaspur Temple. White temple. 1848. (<i>Mirzapur</i>). λ 25 6 29·9 L 82 53 23·9
Mirzapur, Garden Gate. Lála Manbor's garden gate. 1848. (<i>Mirzapur</i>). λ 25 8 52·0 L 82 35 2·2	Murli h.s. On a hill about 2 miles S. of the Ganges. 1848. (<i>Mirzapur</i>). λ 25 5 21·45 L 82 51 22·55 See Synoptical Vol. of the Gora Meridional Series.	Sinhora Temple. 1848. (<i>Mirzapur</i>). λ 25 12 38·8 L 82 40 56·6
Mirzapur Hotel, Staircase. 1848. (<i>Mirzapur</i>). λ 25 9 31·4 L 82 37 47·4	Nánupura House, In village. 1848. (<i>Mirzapur</i>). λ 25 8 24 L 82 47 26	Tree on long hill. 1848. (<i>Mirzapur</i>). λ 25 5 39 L 82 41 54

March, 1883.

W. H. COLE,
Offg. in charge of Computing Office.



G. G. Ollenbach, Zircu

Handwritten text, possibly a signature or title, located in the lower-left quadrant of the page.

Handwritten text, possibly a date or a line of a list, located near the bottom center of the page.

GORA MERIDIONAL SERIES.

GORA MERIDIONAL SERIES—(LONG. 83° 17').

INTRODUCTION.

The completion of the Northern Section of the Great Arc Series in the year 1842, left sufficient hands available for taking up, besides those in progress, two more of the meridional series, which had been designed by the Surveyor General in 1831 and approved by the Hon'ble Court of Directors, to span the great plain of the River Ganges and its affluents, in Bengal and the North-West Provinces.

These series, or chains of triangles, were to be carried successively at intervals of one degree (about 60 miles) of longitude apart, from the Great Arc Series in the centre of the Peninsula, eastwards.

The first four chains, the Budhon (1), Rangír (2), Amuá (3), and Karára (4), were now in progress or finished, and the 5th and 6th, the Gurwáni and Gora, Series being the next in order to the eastward of the Karára, were in contemplation. But the Governor General in Council here interposed, and directed that the two new parties formed from the *personnel* of the Great Arc Establishment, should be employed, not on the 5th and 6th (Gurwáni and Gora) Series, but upon the Gora (6th) and the Chendwár (8th), *i.e.* on the alternate series, at two degrees apart from one another, the Gurwáni (5th) and Huriláong (7th) being omitted for the time.

The Gora Series, so named from the station of that name, to the meridian of which (83° 17') it closely adheres, was based on the side Gora-Sewádhi of the Calcutta Longitudinal Series, whence it was carried for a distance of 210 miles to the northward, traversing the districts of Mirzapur (east side), Shahabad (west border), Benares, Ghazipur (west), Azamgarh, Gorakhpur (west side), and the eastern border of Basti, fixing the important towns of Chunar, Benares, Ghazipur, Azamgarh, and Gorakhpur.

It consists of twenty-nine stations, of which the six southernmost are on the Kaimúr range and other hills between the rivers Son (Soane) and Ganges, whilst the remaining twenty-three are tower stations of an average height of about 26 feet, in the plains.

The Series begins with two large single triangles stretching from the origin to the Kaimúr range, a distance of 41 miles, followed by six stations forming a compound figure round Basoha H.S., extending the Series a distance of 46 miles to the neighbourhood of Benares. The remainder of the Series consists of a chain of twenty-one single symmetrical triangles, having sides of about 12 miles in length.

During the recess season of 1843 the Surveyor General (Colonel G. Everest) directed Mr. W. N. James to organize a triangulating party of the usual strength, with the assistants marginally noted, and furnished with Harris and Barrow's 15-inch theodolite*

Season 1843-44.

PERSONNEL.

Mr. W. N. James, 1st Principal Sub-Assistant.
 " H. Keelan, "
 (joined late in the season). "
 " T. Olliver, "
 " W. R. James, "

which had been reconstructed in the departmental workshop. The party left the Head Quarters at Dehra Dún on the 1st of October 1843 and, after a long march of more than 500 miles, reached the scene of operations in January

1844, preceded by an advanced party which commenced the approximate series about the middle of December.

The progress of the work was much delayed owing to the haziness of the atmosphere, aggravated by the prevalence of forest fires in the neighbourhood of the operations. The approximate series however, was carried across the hill country a distance of 60 miles, and principal observations made at four stations, besides the determination of an astronomical azimuth, and a considerable quantity of secondary triangulation.

Mr. James went into recess quarters at Chunar on the 10th of May, but intended to resume the final observing as soon as the atmosphere should become clear. The party however suffered a good deal from sickness, five cases of cholera and two of sun-stroke proving fatal. Mr. James himself was taken ill in May, and died, unexpectedly, on the 14th June.

Lieutenant Peter Garforth of the Bengal Engineers, who had recently been appointed to the G. T. Survey Department and attached to the Chendwár Series, was forthwith ordered to take charge of the Gora Series, and reached Chunar on the 18th July 1844. His attention was first directed to a scrutiny of Mr. James's principal observations, and upon his report the Surveyor General directed them to be set aside, and the work to be recommenced from the origin. Accordingly Lieutenant Garforth took the field on the 1st October 1844 and proceeded to revise the work.

A good start seems to have been made at the outset, for on the 1st November he reported considerable progress in the approximate series, but afterwards the party was much hindered by sickness, and in the following months, November and December, was so

Season 1844-45.

PERSONNEL.

Lieut. P. Garforth, Bengal Engineers, 2nd Asst.
 Mr. H. Keelan, Sub-Assistant.
 " T. Olliver, "
 " W. R. James, "

crippled that no further progress was made, and the best part of the season for observing passed away fruitlessly.

During January 1845 the work was resumed, but slowly, and the rest of the field season was spent in ray-tracing, line-clearing, and building the towers at the selected stations.

In June the Series had been laid out as far as Barhanpur (x)† on the north bank of the Ganges, a distance of about 100 miles from origin, and the party then went into recess quarters at Allahabad where Lieutenant Garforth had the benefit of the Surveyor General's personal instructions and counsel, whilst the recruiting and training the party went on at his head quarters.

* For description of this instrument see page 72 of Appendices to Vol. II of the *Account of the Operations, &c.*

† The Roman number after the name of a station indicates its position in the series in numerical order.

The party took the field again early in October, reinforced by Mr. J. W. Armstrong who had already on several occasions had independent charge of a party, and reached the scene of the work before the end of the month. In accordance with his instructions Lieutenant Garforth employed the first part of the season in pushing on the approximate series in advance, so as to avoid entering the unhealthy tract of

Season 1845-46.

PERSONNEL.

Lieut. P. Garforth, B. E., 2nd Assistant.
Mr. J. W. Armstrong, 2nd Principal Sub-Asst.
" T. Olliver, "
" C. A. Olliver, "

hilly country to the south, in which, by neglecting this precaution, his whole party had been disabled by sickness and all progress stayed, the previous year. About the middle of November, having selected the stations as far as Chit Bistrám (xiv), 130 miles from origin, he returned southwards selecting *en route* the stations of Khám (v) and Kandákot (ii) on the Bindháchal and Kaimúr hill ranges, by which Mr. James's original plan of the Series was much improved, and extended by the formation of the polygonal figure round Basoha (iii).

The final observation of the horizontal and vertical angles was begun on the 12th of December at Gora H.S., where a set of star observations for azimuth to δ Ursæ Minoris, at both (E. and W.) elongations, was also taken in supersession of that observed by Mr. Olliver here in the course of the Calcutta Longitudinal Series, and the work was carried on and completed at the undermentioned stations, as follows:—

at Gora	H.S. (xxxv*)	between	December 12th	and	December 28th,	1845
„ Sewádhi	„ (xxxviii*)	„	January 3rd	„	January 8th,	1846
„ Bagdharua	„ (i)	„	„ 14th	„	„ 26th	„
„ Khám	„ (v)	„	„ 29th	„	„ 30th	„
„ Kandákot	„ (ii)	„	February 3rd	„	February 6th	„
„ Khorádi	„ (iv)	„	„ 9th	„	„ 13th	„
„ Basoha	„ (iii)	„	„ 18th	„	„ 25th	„
„ Garda	„ (vi)	„	March 2nd	„	March 5th	„
„ Sikri	T.S. (vii)	„	„ 9th	„	„ 21st	„
„ Hirdepur	„ (ix)	„	„ 31st	„	April 23rd	„
„ Barháni	„ (viii)	„	April 24th	„	June 4th,	several visits.
„ Barhanpur	„ (x)	„	June 7th	„	„ 10th	
„ Gaura	„ (xi)	„	„ 11th	„	„ 14th	
„ Kanaun	„ (xii)	„	„ 16th	„	July 5th	
„ Kharakpur	„ (xiii)	„	July 6th	„	„ 15th	
„ Chit Bistrám	„ (xiv)	„	„ 16th	„	„ 24th	
„ Samenda	„ (xv)	„	„ 25th	„	August 8th	

Luminous signals were observed throughout; heliotropes by day, and argand lamps by night.

At Hirdepur, α Ursæ Minoris was observed for azimuth at both elongations between March 30th and April 16th.

Latterly the work was very much retarded by thick hazy weather, especially at Barhá-

* Of the Calcutta Longitudinal Series.

ni, where two of the rays were from 25 to 30 miles in length, too long to be ordinarily practicable, except in very clear weather.

The principal observations at the last eight stations had occupied over four months, only one being done in April, and none in May. Lieutenant Garforth however felt obliged to remain in the field and accomplish the task set before him, in order to make up for the want of progress during the previous season. He only reached head quarters, Allahabad, on the 25th of August.

The party suffered a good deal by continuing the field work in the rainy season, and Mr. Armstrong was obliged to quit the field about the end of June. But for its inordinate length, the season's work would have been an unusually good one, comprising final observations at 17 principal stations, extending the Series over 130 miles from south to north, and including two sets of circumpolar star observations for azimuth, with a good proportion of secondary triangulation, chiefly on the Ganges, between Chunar, Sultánpur, Benares, and Ghazipur.

The approximate series, including the tracing and clearing of rays, and the selection and building of stations, was carried about 60 miles through the plain country, in the Ghazipur and Azamgarh districts, as far north as the river Gogra, three triangles in advance of the closing point of the final observations.

The Surveyor General visited and inspected the party at Basoha H.S., near Benares, in the latter part of February, when he found it necessary to clean the axis of the large theodolite, on account of its excessive and increasing stiffness, by which the horizontal angles must ere long have been deteriorated, although no ill effects were noticed in the measurements already made.

The party took the field again, as marginally noted, on the 9th of October, and reached

Season 1846-47.

PERSONNEL.

Lieutenant P. Garforth, B.E., 2nd Assistant.
Mr. J. W. Armstrong, 2nd Principal Sub-Assist.
" G. E. Terry, 1st Class Sub-Assistant.
" C. A. Olliver, 2nd Class "

the terminal point of the previous season's work on the 20th. Lieutenant Garforth at once took in hand the preliminary selection of stations in advance, whilst his assistants followed him, completing the requisite ray-clearing and tower-building, and by the beginning of December he had reached the northern limit of the Series, after which he returned southwards to Samenda (xv), where he observed a set of circumpolar star observations to δ Ursæ Minoris at both (E. and W.) elongations, at the periodic time for that star, between the 19th and 28th of December. This done, he hurried back to the north end of the Series, where he designed a polygonal figure round Púrena T.S. (lv of the North-East Longitudinal Series), which however he was not called upon to complete.

By the middle of February the approximate series was so far advanced as to be ready for the final measurements to be taken up where they had been left off the previous season.

Lieutenant Garforth therefore again repaired to the spot, and resumed the final observations which he completed at the undermentioned stations, as follows:—

at Samenda	T.S. (xv)	between February 15th and February 18th, 1847
„ Bhadir	„ (xvi)	„ „ 18th „ „ 21st „
„ Balariáganj	„ (xvii)	„ „ 21st „ „ 24th „

at Baniápár	T.S. (xviii)	between February 24th and March 2nd, 1847
„ Rájgarh	„ (xx)	„ March 5th „ „ 13th „
„ Barhiáchak	„ (xix)	„ „ 13th „ „ 14th „
„ Bhisia	„ (xxi)	„ „ 14th „ „ 18th „
„ Katwar	„ (xxii)	„ „ 18th „ „ 22nd „
„ Deokali	„ (xxiii)	„ „ 22nd „ „ 26th „
„ Saraia	„ (xxiv)	„ „ 26th „ „ 27th „
„ Muhammadpur	„ (xxv)	„ „ 30th „ April 2nd „
„ Rájabári	„ (xxvi)	„ April 2nd „ „ 18th „
„ Gharbaria	„ (lviii)*	„ „ 18th „ „ 20th „
„ Nandaur	„ (xxvii)	„ „ 20th „ „ 22nd „
„ Dharamsingua	„ (lvi)*	„ „ 22nd „ „ 23rd „

A final set of circumpolar star observations for azimuth was taken at Rájabári, between the 6th and 18th of April to α Ursæ Minoris, at both (E. and W.) elongations.

The triangles that had been laid out to the north of Gharbaria-Dharamsingua were not observed this season, and as they appertain to the North-East Longitudinal Series, no account of them will be found in the published results of this Series. It may be remarked that Lieutenant Garforth's rate of progress in carrying on the final observations had increased greatly, for in the last seven weeks he completed eleven stations, including the eleven days spent in the azimuth observations at Rájabári. The out-turn of principal work for this season comprised: thirteen new stations selected, and the rays between them traversed, and cleared; twelve new towers built, over 25 feet in height (one of which Barhiáchak (xix) fell down twice, after completion to a height of 28 feet); fourteen triangles finally observed, extending the Series in a single chain 77 miles, in which two sets of star observations for azimuth were taken, besides a considerable amount of secondary triangulation which will be noticed separately below.

The entire period occupied by the Gora Series was four seasons, one of which, the first, may be said to have been lost, inasmuch as Mr. James's work had to be re-done, whence arose the necessity for re-visiting the unhealthy tract of country in which the party was disabled by sickness for a great part of the second season. On the whole, the entire Series, 210 miles in length, may be considered a very fair amount for three seasons, at the rate of about 70 miles per season, two of them being in a plain country.

On the completion of the Simultaneous Reduction of the North-East Quadrilateral, it was found that the undermentioned errors had been actually dispersed over the Gora Series between its origin, Gora-Sewádhi, of the Calcutta Longitudinal Series, and its terminus, Dharamsingua-Gharbaria, of the North-East Longitudinal Series:—

In Logarithm of the latter side—0'000, 0020,1 or about 0'3 inches per mile.

„ Azimuth	„	+0''628
„ Latitude of Gharbaria	„	+0'044
„ Longitude	„	+0'021

* Of the North-East Longitudinal Series.

Trigonometrical Heights.

The trigonometrical determinations of the height of the stations of this Series above mean sea level, were derived in the first place from those of Gora-Sewádhi, as trigonometrically determined between Sironj and Calcutta by the Calcutta Longitudinal Series adjusted to the spirit-leveled values of its origin and terminus. The height of thirteen of the stations, however, was subsequently determined by connection with the lines of spirit-levels executed of late years by the Survey Department, and corrections have been applied to the trigonometrical values to make them correspond with the former.

The actual corrections applied to the trigonometrical heights of the twenty-nine stations of this Series, as brought up from origin to terminus, a distance of 210 miles, average 4·7 feet per station; the largest cumulative error disclosed being at Katwar (xxii) 8·3 feet. The largest error detected on any one side is 3·7 feet, which occurs on the side Barhání-Hirdepur (viii-ix). For further information regarding the details of the dispersion of this error see page 40 of Part I of Volume VII of the *Account of the Operations &c.*

Secondary Triangulation.

The secondary triangulation in connection with the Gora Series may be divided into six parts:—

1st. The hill triangles. Many conspicuous objects and points, chiefly in the hilly country at the south end of the Series, were fixed by the 15-inch theodolite, occasionally supplemented by observations with the 7-inch theodolite; amongst these were several points in and about Chunar and Benares, and the famous hill fort of Bijaigarh.

2nd. A minor series was carried along the Ganges by Mr. Armstrong with a 7-inch theodolite between Chunar and Benares, a direct distance of about 20 miles, starting from two points near the former, fixed by the triangulation above mentioned, and checked near its close, by another point determined in the same way. Several points in the old cantonment of Sul-tánpur were fixed by this work.

3rd. A ray-trace triangulation was carried by Mr. Armstrong in April 1846 with a 12-inch theodolite to fix Ghazipur and its environs, starting from Kanaun (xii), and closing on Barhanpur (x) of the Gora Series with the final values of which it is made to accord as usual.

4th. The position of two permanent points at Azamgarh was determined by some triangulation dependent on the ray-trace triangles between Samenda (xv) and Balariáganj (xvii). This work was done by Mr. Armstrong in 1846-47 with a 7-inch theodolite.

5th. The position of several points in Gorakhpur was fixed in the same manner by some minor triangulation dependent on, and in extension of, the ray-trace triangulation from Muhammadpur (xxv) to Saraia (xxiv).

6th. In season 1852-53 a chain of secondary triangles was carried up the river Gogra, crossing the Gora Series from east to west between the stations of Baniápár (xviii), and Barhiáchak (xix), with which it is connected. The details of this minor series between stations Nos. 59 and 114 are published as a portion of the Gora Series; the eastern portion is fitted in between Khádípur T.S. of the Huriláong Series and Baniápár of this Series; the western portion, between Barhiáchak and Bisaul of the Gurwáni Series.

In parts 2nd, 3rd, 4th, 5th, and 6th, where the intermediate stations of observation were not permanently marked, no details of the triangles are now published.

In all, the position-values of 315 secondary points are published, but many of the stations or points of observation, could not probably be now found and identified. Temples, landmarks, forts, and other buildings of a permanent kind, were fixed to the number of 180.

August 1881.

B. R. BRANFILL.

GORA MERIDIONAL SERIES.

ALPHABETICAL LIST OF STATIONS.

Bagdharua	I.	Hirdepúr	IX.
Balaríáganj	XVII.	Katwar	XXII.
Baníápár	XVIII.	Kanáon	XII.
Barháni	VIII.	Kandákot	II.
Barhánpúr	X.	Khám	V.
Barhíáchak	XIX.	Kharakpúr	XIII.
Basoha	III.	Khorádi	IV.
Bhádir	XVI.	Máhamadpúr	XXV.
Bhisía	XXI.	Nandáor	XXVII.
Chit Bisráam	XIV.	Rájábári	XXVI.
Deokali	XXIII.	Rájgarh	XX.
Dharamsingua	LVI.	Samenda	XV.
(of North-East Longitudinal Series).		Saraia	XXIV.
Gaora	XI.	Sewádhi	XXXVIII.
Garda	VI.	(of Calcutta Longitudinal Series).	
Gharbaria	LVIII.	Sikri	VII.
(of North-East Longitudinal Series).			
Gora	XXXV.		
(of Calcutta Longitudinal Series).			

GORA MERIDIONAL SERIES.

NUMERICAL LIST OF STATIONS.

XXXV	Gora. (of Calcutta Longitudinal Series).	XV	Samenda.
XXXVIII	Sewádhi. (of Calcutta Longitudinal Series).	XVI	Bhádir.
I	Bagdharua.	XVII	Balaríaganj.
II	Kandákot.	XVIII	Baníápár.
III	Basoha.	XIX	Barhíáchak.
IV	Khorádi.	XX	Rájgarh.
V	Khám.	XXI	Bhisía.
VI	Garda.	XXII	Katwar.
VII	Sikri.	XXIII	Deokali.
VIII	Barháni.	XXIV	Saraia.
IX	Hirdepúr.	XXV	Máhamadpúr.
X	Barhánpúr.	XXVI	Rájábári.
XI	Gaora.	XXVII	Nandáor.
XII	Kanáon.	LVI	Dharamsingua. (of North-East Longitudinal Series).
XIII	Kharakpúr.	LVIII	Gharbaria. (of North-East Longitudinal Series).
XIV	Chit Bisráam.		

GORA MERIDIONAL SERIES.

DESCRIPTION OF STATIONS.



XXXV. (*Of Calcutta Longitudinal Series*). Gora Hill Station, lat. $24^{\circ} 5'$, long. $83^{\circ} 17'$, has been named after the village of Gora which lies about 1 mile to the S.E., pargana Singraoli of the Mirzapore district. The hill is called Chandol by the villagers; another hill called Mirgáráni, connected with it by a low ridge, is about 1 mile to E., and the detached hill of Margári is 2 miles to N.

The station was constructed in 1827 for the original triangulation of the Calcutta Longitudinal Series, as a raised platform with two mark-stones, one at the level of the hill summit, the other on the surface of the platform. The upper mark was found in good preservation when the station was visited in 1844, on commencing the Gora Series; the platform was then raised 2 feet, and a new mark-stone inserted on the surface in the normal of the original mark-stone; the new mark-stone was found in good preservation when the station was re-visited in February, 1864, in the course of the revision of the Calcutta Longitudinal Series.

XXXVIII. (*Of Calcutta Longitudinal Series*). Sewádhi Hill Station, lat. $23^{\circ} 58'$, long. $83^{\circ} 48'$, has been named after the village Sewádhi, which is situated about 1 mile to the N.W.; district Pálámao. The respectable village of Ranka lies about 2 miles to the N.E.

The station was constructed in 1827 for the original triangulation of the Calcutta Longitudinal Series, and consists of a raised platform with two mark-stones, one on the level of the hill summit, the other on the surface of the platform. The upper mark was found in good preservation when the station was visited in 1844, on commencing the Gora Series, and again in February, 1864, in the course of the revision of the Calcutta Longitudinal Series.

I. Bagdharua Hill Station, lat. $24^{\circ} 33'$, long. $83^{\circ} 32'$, is situated in the Mirzapore district, and stands on a hill, locally called Chaoria, appertaining to the Kaimúr range. The station is on the left bank of the river Son. The circumjacent villages, with their distances and bearings, are,—Barela and Maholi, about $1\frac{1}{4}$ miles to the N.E., and Parti, on the opposite bank of the river, about the same distance to the S.W.

The platform is solid, and about 16 feet in height, with an isolated central paka pillar containing the mark-stones.

II. Kandákot Hill Station, lat. $24^{\circ} 38'$, long. $83^{\circ} 3'$, is situated in the Barhar pargana

of the Mirzapore district, on the Kaimúr range, at a distance of about 4 miles S.E. of the village of Rájpur, and 6 miles S.E. of that of Sháganj. A fort, partially built, stands on the hill not far from the station.

The station consists of a central paka pillar containing the mark-stones, and isolated from the surrounding platform.

III. Basoha Hill Station, lat. $24^{\circ} 53'$, long. $83^{\circ} 19'$, is situated in pargana Magrar of the Mirzapore district, and stands on one of the many knolls appertaining to the Bindráchal range. The adjacent villages, with their distances and bearings, are,—Naogarh, about $2\frac{1}{2}$ miles S.; Laoari, about 3 miles to the W.; and Amdáha, 4 miles to the S.W. by W.

The station consists of a central paka pillar containing the mark-stones, and isolated from the surrounding platform.

IV. Khorádi Hill Station, lat. $24^{\circ} 54'$, long. $83^{\circ} 1'$, is situated in the Bhagwant pargana of the Mirzapore district, and stands on a knoll rising from a nearly level plot of ground covered with jungle.

The station consists of a central paka pillar containing the mark-stones, and isolated from the surrounding platform.

V. Khám Hill Station, lat. $24^{\circ} 47'$, long. $83^{\circ} 34'$, is situated in the Chainpúr pargana of the Sháhábád district, and stands on a swell of ground locally called Sankra, rising out of the table-land to the north of the Kaimúr range. The adjacent villages, with their distances and bearings, are,—Bara Khám, about 1 mile to the S.W., and Bhanera, about $1\frac{1}{2}$ miles to the S.E.

The station consists of a central paka pillar containing the mark-stones, and isolated from the surrounding platform.

VI. Garda Hill Station, lat. $24^{\circ} 57'$, long. $83^{\circ} 35'$, is situated in the Chainpúr pargana of the Sháhábád district, and stands on a steep and nearly inaccessible hill, which is separated by a deep ravine from the Bindráchal range of mountains. The run of the hill is W.S.W. and E.N.E., and is about $2\frac{1}{2}$ miles in length. The ascent to the station is very steep, and is made from the village of Rámgarh, which lies at the foot of the hill to the E.N.E., at a distance of $2\frac{1}{2}$ miles. The city of Chainpúr is about 7 miles to the N.E.

The station consists of a central paka pillar containing the mark-stones, and isolated from the surrounding platform.

VII. Sikri Tower Station, lat. $25^{\circ} 12'$, long. $83^{\circ} 15'$, is situated in the Majwar pargana of the Benares district, and stands on a small mound, at the northern skirt of the village after which it is named. The adjacent places, with their distances and bearings, are,—Babúri village, about $1\frac{1}{2}$ miles S.W., and Chanoli thana, on the Grand Trunk road, about $5\frac{1}{2}$ miles to the N.E.

The tower is solid and circular, diameter 18 feet at base, and $15\frac{1}{2}$ at summit, height 27 feet. It has an isolated central paka pillar for the theodolite to rest on, with a mark-stone at top, another at bottom, and three others intermediate.

VIII. Barhání Tower Station, lat. $25^{\circ} 18'$, long. $83^{\circ} 27'$, is situated in the Narwan

pargana of the Benares district, and stands on a small mound at the edge of a tank near the road leading from Sadraza to Amra, which latter is distant nearly half a mile to the W. of the village of Barháni.

The tower is solid and circular, diameter 32 feet at base and 16 at summit, height 27 feet; an isolated central paka pillar contains the mark-stones.

IX. Hirdepúr Tower Station, lat. $25^{\circ} 24'$, long. $83^{\circ} 17'$, is situated in the Mohuári pargana of the Benares district, and stands on a mound about 400 yards S.S.W. of the village of that name, and half a mile south of the road from Benares *viá* Balúa to Ghazeepore.

The tower is solid and circular, diameter 17 feet at base and 15 at summit, height about 32 feet; an isolated central paka pillar contains the mark-stones.

X. Barhánpúr Tower Station, lat. $25^{\circ} 32'$, long. $83^{\circ} 26'$, is situated in pargana Bhitri of the Ghazeepore district, and stands on the raised bank of a tank distant about 200 yards to the N.E. of the village from which it takes its name. The road from Benares to Ghazeepore passes about $\frac{1}{4}$ of a mile to the N., and the village of Dharwa lies about $1\frac{1}{2}$ miles to the N.E. by E. of the station.

The tower is solid and circular, diameter 25 feet at base and 14 feet at summit, height 22 feet; an isolated central paka pillar contains the mark-stones.

XI. Gaora Tower Station, lat. $25^{\circ} 38'$, long. $83^{\circ} 17'$, is situated in pargana Bhitri of the Ghazeepore district, and stands on a high mound surrounded by the scattered hamlet of Gaora.

The tower is solid and circular, diameter 25 feet at base and $13\frac{1}{2}$ feet at summit, height about 20 feet; an isolated central paka pillar contains the mark-stones.

XII. Kanáon Tower Station, lat. $25^{\circ} 43'$, long. $83^{\circ} 26'$, is situated in the Ghazeepore district, and stands on a small mound, about 100 yards to the N.N.E. of the principal portion of the scattered village of Kanáon. The villages of Rámpúr and Perojpúr are distant about 7 miles to the S.E. by E., and Sikhári factory, $2\frac{1}{4}$ miles to the E. by N.

The tower is solid and circular, diameter 21 feet at base and 15 at summit, height about 20 feet; an isolated central paka pillar contains the mark-stones.

XIII. Kharakpúr Tower Station, lat. $25^{\circ} 50'$, long. $83^{\circ} 16'$, is situated in pargana Belbahans of the Azimgarh district, and stands on a mound about 50 yards square, said to be the site of an old fort. The village of Kharakpúr lies scattered at a distance of 100 yards to the west, north, and north-east of the station.

The tower is solid and circular, diameter 25 feet at base and 15 at summit, height about 20 feet. It has an isolated central paka pillar for the theodolite to rest on, with a mark-stone at top, and another at bottom.

XIV. Chit Bistrám Tower Station, lat. $25^{\circ} 54'$, long. $83^{\circ} 26'$, is situated in the Mahamdábád pargana of the Azimgarh district, and stands on a mound at the edge of a small tank, surrounded by the scattered village of Chit Bistrám.

The tower is solid and circular, diameter 25 feet at base and 15 at summit, height about 23 feet; an isolated central paka pillar contains the mark-stones.

XV. Samenda Tower Station, lat. $26^{\circ} 0'$, long. $83^{\circ} 16'$, is situated in the Mahamdábád pargana of the Azimgarh district, and stands on the bank of a tank adjoining the S.W. side of the large village of Samenda. The town of Azimgarh is distant 4 miles to the N.W. by N.

The tower is solid and circular, diameter 21 feet at base and 16 at summit, height 25 feet; an isolated central paka pillar contains the mark-stones.

XVI. Bhádir Tower Station, lat. $26^{\circ} 5'$, long. $83^{\circ} 26'$, is situated in the Mahamdábád pargana of the Azimgarh district, and stands close to the south side of the village of that name.

The tower is solid and circular, diameter 21 feet at base and $16\frac{1}{2}$ at summit, height about 33 feet; an isolated central paka pillar contains the mark-stones.

XVII. Balaríáganj Tower Station, lat. $26^{\circ} 12'$, long. $83^{\circ} 16'$, is situated in pargana Sagri of the Azimgarh district, and stands on the east side of a tank 300 yards N.E. of the large village of Balaríáganj.

The tower is solid and circular, diameter 21 feet at base and 16 at summit, height about 33 feet; an isolated central paka pillar contains the mark-stones.

XVIII. Baníápár Tower Station, lat. $26^{\circ} 15'$, long. $83^{\circ} 25'$, is situated in the Sagri pargana of the Azimgarh district, and stands on a slight elevation at the south side of the hamlet of Baníápár. The village of Badíha is distant half a mile to the W. The station is in the kadar land of the river Ghágra.

The tower is solid and circular, diameter 21 feet at base and 17 at summit, height 25 feet; an isolated central paka pillar contains the mark-stones.

XIX. Barhíáchak Tower Station, lat. $26^{\circ} 21'$, long. $83^{\circ} 16'$, is situated in pargana Dhuríápúr of the Goruckpore district, and stands on the south-west side of the small village of Barhíáchak. The station is in the kadar land of the river Ghágra.

The tower is solid, 20 feet square at base, 14 feet square at top, and about 28 feet in height; an isolated central paka pillar contains the mark-stones.

XX. Rájgarh Tower Station, lat. $26^{\circ} 25'$, long. $83^{\circ} 26'$, is situated in the Dhuríápúr pargana of the Goruckpore district, and stands contiguous to the southern side of the village after which it is named.

The tower is solid, 20 feet square at base, 14 feet square at top, and about 26 feet in height; an isolated central paka pillar contains the mark-stones.

XXI. Bhisía Tower Station, lat. $26^{\circ} 29'$, long. $83^{\circ} 12'$, is situated in pargana Bhowapúr of the Goruckpore district, and stands on a small mound within the village of that name, on the right bank of the Kuána stream.

The tower is solid, 20 feet square at base, 14 feet square at top, and about 23 feet in height; an isolated central paka pillar contains the mark-stones.

XXII. Katwar Tower Station, lat. $26^{\circ} 34'$, long. $83^{\circ} 20'$, is situated in pargana Anaol

of the Goruckpore district, and stands on a slight elevation 200 yards S.E. of the small village of Katwar, and 300 yards N.N.W. of the Bitáha indigo factory.

The tower is solid, 20 feet square at base, 14 feet square at top, and about 23 feet in height. It has an isolated central paka pillar for the theodolite to rest on, with a mark-stone at top, and another at bottom.

XXIII. Deokali Tower Station, lat. $26^{\circ} 38'$, long. $83^{\circ} 8'$, is situated in the Maholi pargana of the Goruckpore district, and stands on a small mound contiguous to the south side of the hamlet of that name. The village of Mulapúr is distant 1 mile to the N.E.

The tower is solid, 20 feet square at base, 14 feet square at top, and about 23 feet in height. It has an isolated central paka pillar for the theodolite to rest on, with a mark-stone at top, and another at bottom.

XXIV. Saraia Tower Station, lat. $26^{\circ} 44'$, long. $83^{\circ} 19'$, is situated in pargana Bhowapúr of the Goruckpore district, and stands on the eastern bank of a tank 300 yards N.E. of the village of Saraia. The road from Goruckpore to Bakhra passes close to the station to the south. The town of Goruckpore lies about 4 miles towards the E. The circumjacent villages, with their distances and bearings, are,—Bargahán, about $\frac{1}{2}$ a mile to the E.N.E.; Kalesar, about $1\frac{1}{2}$ miles to the N.W. by W., and Máhamadpúr, about $2\frac{1}{2}$ miles to the N.N.W.

The tower is solid, 20 feet square at base, 14 feet square at top, and about 28 feet in height; an isolated central paka pillar contains the mark-stones.

XXV. Máhamadpúr Tower Station, lat. $26^{\circ} 46'$, long. $83^{\circ} 9'$, is situated in the Maghar pargana of the Goruckpore district, and stands about 150 yards to the north of the deserted village of that name on the left bank of the Ami stream. The large village of Maghar is distant $2\frac{1}{2}$ miles to the E. by S.

The tower is solid, 20 feet square at base, 14 feet square at top, and about 28 feet in height; an isolated central paka pillar contains the mark-stones.

XXVI. Rájábári Tower Station, lat. $26^{\circ} 54'$, long. $83^{\circ} 18'$, is situated in pargana Haveli Goruckpore of the Goruckpore district, and stands on a mound 80 yards W. of the village of that name. The river Rápti flows to the west of the station, at a distance of half a mile, and the village of Aiasoál is distant nearly 200 yards to the W. by N.

The tower is solid, 20 feet square at base, 14 feet square at top, and about 28 feet in height; an isolated central paka pillar contains the mark-stones.

XXVII. Nandáor Tower Station, lat. $26^{\circ} 57'$, long. $83^{\circ} 7'$, is situated in pargana Maghar of the Basti district, and stands about 200 yards to the S.E. of the village of Nandáor. The road from Goruckpore to Bánsi passes close to the station, and the town of Bakhra is distant $1\frac{1}{2}$ miles to the S.E.

The tower is solid, 20 feet square at base, 14 feet square at top, and about 26 feet in height. It has an isolated central paka pillar for the theodolite to rest on, with a mark-stone at top, and another at bottom.

LVI. (*Of the North-East Longitudinal Series*). Dharamsingua Tower Station, lat. $27^{\circ} 5'$,

long. $83^{\circ} 7'$, is situated in pargana Báñsi of the Goruckpore district, and stands on the bund of a tank 200 yards E.S.E. of Dharamsingua village, and 300 yards S.W. of that of Gaori-Rái.

The tower is solid, 20 feet square at base, 14 feet square at top, and about 25 feet high; an isolated central paka pillar contains the mark-stones. It was found in good preservation when the station was visited in 1849, in the course of the North-East Longitudinal Series.

LVIII. (*Of the North-East Longitudinal Series*). Gharbaria Tower Station, lat. $27^{\circ} 3'$, long. $83^{\circ} 18'$, is situated in pargana Haveli Goruckpore of the Goruckpore district, and stands 50 yards within the western verge of the forest. The Gúñghi nadi flows at about 1.8 miles to the W. The village of Gharbaria, near the road from Karmeni Ghat to Máhádeoa, is distant about 80 yards to the N.W.

The tower is solid, 20 feet square at base, 14 feet square at top, and about 25 feet high; an isolated central paka pillar contains the mark-stones. It was found in good preservation when the station was visited in 1849, in the course of the North-East Longitudinal Series.

GORA 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, made by the Civil Officials to whose care the stations have been committed. The statement also gives additional information as to position, construction, and 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	Villages surrounding the Station	Remarks on the Construction and Condition of the Station
XXXV	Gohnda	Mirzapur	Tah. Roberts-ganj, P. Sing-rauli, Thá. Chaupan	Gohnda	...	In 1866 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.
XXXVIII	...	Lohardugga	P. Palamow, Thá. Rámkunda	Sewádhi	...	...
I	Barela Mahuli	Mirzapur	Tah. Roberts-ganj, P. Bijai-garh, Thá. Pan-naganj	Barela Mahuli	...	The pillar fallen down as reported in 1876.
II	Kandákot	"	Tah. and Thá. Robertsganj, P. Barhar	Bahuara	...	The top of the pillar broken as reported in 1875.
III	Simra	"	Tah. Chakia, P. Kera Mang-raur, Thá. Ah-raura	Simra	...	...
IV	Khorádi	Mirzapur	Tah. and Thá. Chunar, P. Bhagwant	Khorádi	...	...

NOTE.—Stations XXXV and XXXVIII appertain to the Calcutta Longitudinal Series of the South-East Quadrilateral.

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

No. of Station	Local name	District	Pargana, &c.	Village in which the Station lies	Villages surrounding the Station	Remarks on the Construction and Condition of the Station
V	Khám	Shahabad	Thá. Bhubooah, P. Chainpur	Khám	...	...
VI	Garda or Ghari	"	Thá. Mohania, P. Chainpur	Ghari	...	...
VII	Sikri	Benares	Tah. Chandauli, P. Majwar	Sikri	...	...
VIII	Barháni	"	Tah. Chandauli, P. Narwan	Barháni	...	...
IX	Hirdepur	"	Tah. Chandauli, P. Mohuári	Hirdepur	...	...
X	Barhanpur	Ghazipur	Tah. Sayyidpur, P. Bhítari, Thá. Nandganj.	Barhanpur Seh Patti	...	...
XI	Gaura	"	Tah. Sayyidpur Bhítari, P. Bahariabad, Thá. Sádát	Gaura	Sádát N. E. by E. 4½ Makdumpur W. N. W. 1½	Upper portion of the tower, nearly 2 feet, broken as reported in 1867.
XII	Kanaun	"	Tah. Ghazipur, P. and Thá. Shádiabad	Kanaun	Koiri S. S. W. 3½	No trace of the station found as reported in 1874.
XIII	Kharakpur	Azamgarh	Tah. Deogaon, P. Belhabáns, Thá. Chiriakot	Kharakpur	Belha S. by W. 4 Maholi S. W. by W. 5½	...
XIV	Chit Bistrám	"	Tah. and P. Muhammadabad	Chit Bistrám	Ránipur N. E. by E. 2 Chiriakot W. S. W. 4½	...
XV	Samenda	"	Ditto.	Samenda	Amaun E. 4 Mitupur S. by E. 3½	...
XVI	...	"	...	...	...	There is no mark of mound or pillar at this spot over which the zamíndár has built a hut, as reported in 1867.
XVII	Balariaganj	"	Tah., P. and Thá. Sagri	Balariaganj	Akbarpur N. E. 1½ Ramipur S. S. W. 2 Bachaur E. by N. 3½	"The upper part of each of these towers is knocked down to a certain extent, and the stonework in each case is not in existence", as reported in 1867.
XVIII	Baniapár	"	Tah. and P. Sagri, Thá. Raunapár	Baniapár	Máhula E. S. E. 4 Bardela W. 1½ Muhammadpur S. by E. 2½	
XIX	...	Gorakhpur	Tah. Bánsaon, P. Dhuriapár, Thá. Kothibhár	Barhiachak	Sháhpur N. 3½ Ratanpur N. E. 3½	"Now only a kacha masonry mound 15 feet high exists", as reported in 1874.

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

No. of Station	Local name	District	Pargana, &c.	Village in which the Station lies	Villages surrounding the Station	Remarks on the Construction and Condition of the Station
XX	...	Gorakhpur	Tah. Bánsgaon, P. Dhuriapár, Thá. Kothibhár	Rájgarh	Naribuzurg N. E. 1½ Kohari S. by E. 1	Now only a mound 18 feet high exists as reported in 1874.
XXI	...	...	...	...	...	Entirely swept away by the Kuána stream as reported in 1870.
XXII	...	Gorakhpur	Tah. Bánsgaon, P. Anaul, Thá. Kothibhár	Katwar	Sháhpur Kabra E. S. E. 3½ Bhadar W. by S. 4½ Babhnauli S. S. E. 2½	A paka pillar 19 feet high exists from which bricks have come out here and there as reported in 1874.
XXIII	Deokali	Basti	Tah. Khalílabad, P. and Thá. Mahuli	Deokali	...	In a state of complete ruin as reported in 1879.
XXIV	...	Gorakhpur	Tah. Sadar, P. Bhowapur, Thá. Kotwáli	Bargahán	...	No mark-stone is in existence. The station is about 9 feet in height, as reported in 1867.
XXV	...	„	Tah. Sadar, P. Maghar, Thá. Sahjanwa	Muhammadpur	...	“No mark-stone is in existence. The station is about 24 feet in height”, as reported in 1867.
XXVI	...	„	Tah. Sadar, P. Haveli, Thá. Ragauli	Rájabári	...	No mark-stone in existence, part of the station has been injured: it is about 6 feet high, as reported in 1867.
XXVII	Nandaur	Basti	Tah. Khalílabad, P. Hasanpur Maghar, Thá. Mihndáwal	Nandaur	...	...
LVI	Dharam-singua	„	Tah. and P. Bánsi, Thá. Májhra	Dharam-singua	Safti W. 1 Fatehpur N. W. 1½ Jamia E. by S. 2½	The station as built in 1847 consists of a solid tower, 20 feet square at base, 14 feet at top, and about 25 feet high, enclosing a central, isolated pillar of masonry which contains mark-stones. When again visited in 1849, in the course of the North-East Longitudinal Series operations, it was found in good preservation, and no alteration in its construction appears to have been made.
LVIII	...	Gorakhpur	Tah. Maharáj-ganj, P. Haveli, Thá. Ragauli	Gharbaria	Ragauli S. W. 2½	The station as built in 1847 consists of a solid tower, 20 feet square at base, 14 feet at top, and about 25 feet high, enclosing a central, isolated and perforated pillar of masonry which contains mark-stones. When again visited in 1849, in the course of the North-East Longitudinal Series operations, it was found in good preservation, and no alteration in its construction appears to have been made. Part of the tower injured, and no mark-stone found, as reported in 1867.

NOTE.—Stations LVI and LVIII appertain to the North-East Longitudinal Series.

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

August, 1882.

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

GORA MERIDIONAL SERIES.

PRINCIPAL TRIANGULATION. TRIANGLES.

NOTE.—The preceding pages, 1—0. to 8—0., having been printed in 1869, the spelling of Indian proper names occurring in them is in accordance with the Departmental or old rules; these prevailed until 1874, when the Government or new rules for spelling were published. The transition now (1879) necessary from the old to the new rules is effected hereafter as follows. Names not already printed are rendered by only one method of spelling, *i.e.*, the new. Any name that has appeared in the preceding pages is given by both methods, *viz.*, in Roman type by the new rules and in Italics by the old; to avoid needless repetitions, this is done *only* in the *first* instance that a name of the kind occurs. It will be seen that the two methods of spelling differ but slightly.

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle				Distance		
			Log. feet	Feet	Miles				
1	Gora, XXXV	2'57	75	49	6'52	5'3530121	225430'2	42'695	
	Sewádhi, XXXVIII	2'56	54	40	18'32	5'2780650	189699'0	35'928	
	Bagdharua, I	2'56	49	30	35'16	5'2475620	176832'5	33'491	
2	Gora, XXXV	2'39	48	13	57'32	5'2220843	166757'1	31'583	
	Bagdharua, I	2'40	73	43	19'36	5'3316618	214615'9	40'647	
	Kandákot, II	2'39	58	2	43'32	5'2780650	189699'0	35'928	
3	Bagdharua, I	1'39	48	22	31'19	5'1091679	128578'4	24'352	
	Kandákot, II	1'40	55	49	7'51	5'1531940	142296'4	26'950	
	Basoha, III	1'40	75	48	21'30	5'2220843	166757'1	31'583	
4	Bagdharua, I	'57	35	36	45'40	4'9409101	87279'1	16'530	
	Basoha, III	'58	36	4	33'36	4'9457716	88261'6	16'716	
	Khám, V	'58	108	18	41'24	5'1531940	142296'4	26'950	
5	Basoha, III	'38	38	12	20'78	4'7665010	58411'9	11'063	
	Khám, V	'39	74	15	16'04	4'9585601	90899'2	17'216	
	Garda, VI	'39	67	32	23'18	4'9409101	87279'1	16'530	

NOTES.—1. The values of the side are given in the same line with the opposite angle.
 2. Gora, XXXV, and Sewádhi, XXXVIII 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
6	Basoha, III	84	85	3	40'24	5'1523208	142010'6	26'896	
	Garda, VI	84	55	19	2'96	5'0689759	117213'0	22'199	
	Sikri, VII	83	39	37	16'80	4'9585601	90899'2	17'216	
7	Garda, VI	78	31	34	47'74	4'8772941	75386'6	14'278	
	Sikri, VII	78	67	50	37'97	5'1249077	133323'8	25'251	
	Barhání, VIII	78	80	34	34'29	5'1523208	142010'6	26'896	
8	Kandákot, II	79	50	52	20'76	5'0065581	101521'5	19'228	
	Basoha, III	78	49	51	56'81	5'0002386	100054'9	18'950	
	Khorádi, IV	79	79	15	42'43	5'1091679	128578'4	24'352	
9	Basoha, III	91	74	59	2'62	5'1261766	133713'9	25'325	
	Khorádi, IV	90	57	51	2'08	5'0689759	117213'0	22'199	
	Sikri, VII	90	47	9	55'30	5'0065581	101521'5	19'228	
10	Basoha, III	95	57	50	48'51	5'1249077	133323'8	25'251	
	Garda, VI	96	86	53	51'36	5'1965780	157245'4	29'781	
	Barhání, VIII	95	35	15	20'13	4'9585601	90899'2	17'216	
11	Sikri, VII	37	56	6	54'51	4'8501795	70823'8	13'414	
	Barhání, VIII	37	61	48	0'08	4'8761434	75187'1	14'240	
	Hirdepur (<i>Hirdepúr</i>), IX	38	62	5	5'41	4'8772941	75386'6	14'278	
12	Barhání, VIII	39	52	38	5'56	4'8528341	71258'1	13'496	
	Hirdepur, IX	39	75	11	6'52	4'9379023	86676'7	16'416	
	Barhanpur (<i>Barhánpúr</i>), X	38	52	10	47'92	4'8501795	70823'8	13'414	
13	Hirdepur, IX	34	47	29	3'82	4'7973166	62707'1	11'876	
	Barhanpur, X	35	75	37	38'64	4'9159843	82410'8	15'608	
	Gaura (<i>Gaora</i>), XI	34	56	53	17'54	4'8528341	71258'1	13'496	
14	Barhanpur, X	26	54	35	45'81	4'7727365	59256'6	11'223	
	Gaura, XI	27	65	47	59'12	4'8215832	66310'6	12'559	
	Kanaun (<i>Kandón</i>), XII	27	59	36	15'07	4'7973166	62707'1	11'876	
15	Gaura, XI	30	62	22	33'62	4'8452193	70019'6	13'261	
	Kanaun, XII	31	69	2	57'90	4'8680763	73803'4	13'978	
	Kharakpur (<i>Kharakpúr</i>), XIII	30	48	34	28'48	4'7727365	59256'6	11'223	
16	Kanaun, XII	29	52	9	49'20	4'7790468	60123'9	11'387	
	Kharakpur, XIII	29	60	56	46'98	4'8231421	66549'1	12'604	
	Chit Bistrám, XIV	29	66	53	23'82	4'8452193	70019'6	13'261	
17	Kharakpur, XIII	28	68	6	55'07	4'8355919	68484'4	12'971	
	Chit Bistrám, XIV	27	57	19	53'76	4'7932873	62128'0	11'767	
	Samenda, XV	27	54	33	11'17	4'7790468	60123'9	11'387	
18	Chit Bistrám, XIV	30	56	19	47'69	4'8101702	64590'7	12'233	
	Samenda, XV	31	61	44	6'67	4'8347814	68356'8	12'946	
	Bhadir (<i>Bhádír</i>), XVI	31	61	56	5'64	4'8355919	68484'4	12'971	
19	Samenda, XV	31	60	32	10'80	4'8337564	68195'6	12'916	
	Bhadir, XVI	31	63	54	40'67	4'8472356	70345'4	13'323	
	Balariáganj (<i>Balaríáganj</i>), XVII	31	55	33	8'53	4'8101702	64590'7	12'233	
20	Bhadir, XVI	24	48	39	29'51	4'7260752	53220'0	10'080	
	Balariáganj, XVII	24	57	10	41'51	4'7750267	59569'9	11'282	
	Baniápár (<i>Baniápár</i>), XVIII	24	74	9	48'98	4'8337564	68195'6	12'916	

PRINCIPAL TRIANGULATION. TRIANGLES.

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle			Distance		
						Log. feet	Feet	Miles
21	Balariáganj, XVII	22	71	56	50.29	4.8021156	63403.8	12.008
	Baniápár, XVIII	22	55	6	26.60	4.7379726	54698.2	10.359
	Barhiáchak (<i>Barhiáchak</i>), XIX	21	52	56	43.11	4.7260752	53220.0	10.080
22	Baniápár, XVIII	25	55	57	26.99	4.7673367	58524.4	11.084
	Barhiáchak, XIX	25	60	11	2.18	4.7873126	61279.1	11.606
	Rájgarh, XX	26	63	51	30.83	4.8021156	63403.8	12.008
23	Barhiáchak, XIX	24	85	23	48.06	4.8741104	74836.0	14.173
	Rájgarh, XX	23	43	23	14.45	4.7124241	51573.2	9.768
	Bhisia (<i>Bhisia</i>), XXI	24	51	12	57.51	4.7673367	58524.4	11.084
24	Rájgarh, XX	24	44	38	26.21	4.7237514	52936.0	10.026
	Bhisia, XXI	24	51	58	12.82	4.7733634	59342.2	11.239
	Katwar, XXII	25	83	23	20.97	4.8741104	74836.0	14.173
25	Bhisia, XXI	24	77	27	20.45	4.8440192	69826.3	13.225
	Katwar, XXII	24	54	48	42.56	4.7668745	58462.1	11.072
	Deokali, XXIII	23	47	43	56.99	4.7237514	52936.0	10.026
26	Katwar, XXII	30	62	29	49.24	4.8389174	69010.9	13.070
	Deokali, XXIII	30	53	40	32.80	4.7971617	62684.7	11.872
	Saraia, XXIV	31	63	49	37.96	4.8440192	69826.3	13.225
27	Deokali, XXIII	22	51	28	19.58	4.7385104	54765.9	10.372
	Saraia, XXIV	22	48	11	58.08	4.7175644	52187.3	9.884
	Muhammadpur (<i>Máhamadpur</i>), XXV	22	80	19	42.34	4.8389174	69010.9	13.070
28	Saraia, XXIV	25	70	5	29.23	4.8201488	66092.0	12.517
	Muhammadpur, XXV	24	58	43	45.58	4.7787376	60081.1	11.379
	Rájabári (<i>Rájabári</i>), XXVI	24	51	10	45.19	4.7385104	54765.9	10.372
29	Muhammadpur, XXV	27	57	32	46.20	4.7935789	62169.7	11.775
	Rájabári, XXVI	28	58	40	46.09	4.7989235	62939.5	11.920
	Nandaur (<i>Nandáor</i>), XXVII	28	63	46	27.71	4.8201488	66092.0	12.517
30	Rájabári, XXVI	25	72	18	26.32	4.8365002	68627.8	12.998
	Nandaur, XXVII	25	48	1	55.66	4.7288365	53559.5	10.144
	Gharbaria, LVIII	25	59	39	38.02	4.7935789	62169.7	11.775
31	Nandaur, XXVII	23	59	18	50.34	4.7837907	60784.2	11.512
	Gharbaria, LVIII	23	44	31	49.93	4.6952012	49568.0	9.388
	Dharamsingua, LVI	23	76	9	19.73	4.8365002	68627.8	12.998

NOTE.—Dharamsingua, LVI, and Gharbaria, LVIII appertain to the North-East Longitudinal Series.

February 1879.

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

GORA MERIDIONAL SERIES.
SECONDARY TRIANGULATION. TRIANGLES.

PRINCIPAL-AUXILIARY STATIONS AND INTERSECTED POINTS.

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

No. of Triangle	Station	Corrected Plane Angle	Distance			No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used	
			Log. feet	Feet	Miles				Log. feet	Feet	Miles		
32	Gora, XXXV	107 4 48	5.440841	275957	52.265	37	Gora, XXXV	16 49 2	4.693195	49340	10	Inch 15 7	
	Sewádhí, XXXVIII	35 8 49	5.220609	166191	31.476		Khempur	30 44 40	4.940416	87180	16.511		7
	Pípardar	37 46 23	5.247562	176833	33.491		Kandwa	132 26 18	5.099876	125857	23.836		"
33	Gora, XXXV	31 15 39	4.993542	98524	18.660	38	Khempur	55 40 56	4.751905	56481	10.697	"	
	Bagdharua, I	61 5 9	5.220609	166191	31.476		Kandwa	78 8 25	4.825595	66926	12.075		"
	Pípardar	87 39 12	5.278065	189699	35.928		Bahrádol Hill Mark (Heliotrope)		4.693195	49340	9.345		"
34	Bagdharua, I	36 31 40	4.769624	58833	11.143	39	Gora, XXXV	40 13 46	4.751905	56481	10.697	15	
	Pípardar	24 33 29	4.871793	74438	14.098		Kandwa	54 17 53	4.851364	71017	13.450		7
	Khempur	94 36 52	4.993542	98524	18.660		Bahrádol Hill Mark (Heliotrope)		4.940416	87180	16.511		"
35	Gora, XXXV	14 13 48	4.871793	74438	14.098	40	Gora, XXXV	77 50 33	5.094901	124423	23.565	15	
	Bagdharua, I	24 33 29	5.099876	125857	23.836		Khempur	3 35 16	3.901171	7065	1.508		7
	Khempur	141 12 43	5.278065	189699	35.928		Mirgaráni		5.099876	125857	23.836		"
36	Bagdharua, I	26 45 16	4.693195	49340	9.345	41	Khempur	27 9 24	4.922271	83612	15.836	"	
	Khempur	110 28 3	5.011500	102683	19.448		Kandwa	137 13 7	5.094901	124423	23.565		"
	Kandwa	42 46 41	4.871793	74438	14.098		Mirgaráni		4.693195	49340	9.345		"

NOTES.—1. Names followed by Roman numerals are those of Principal Stations.
Quadrilateral.

2. The values of the side are given in the same line with the opposite angle.

Stations Gora, XXXV, and Sewádhí, XXXVIII appertain to the Calcutta Longitudinal Series of the South-East

No. of Triangle	Station	Corrected Plane Angle	Distance			No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
42	Bagdharua, I Pipardar Magarda	h.s. " "	4° 30' 13.9 4° 9' 10.626 4° 93' 34.2	29330 81400 98524	3° 850 15° 417 18° 660	55	Kandakot, II Mangesar Hill Mark Surhau Ghat (Pass)	69° 8' 29 102° 25' 20	4° 62' 79.13 3° 82' 38.15 4° 64' 70.63	42453 6665 44367	8° 040 1° 262 8° 403	Inch 15 7
43	Pipardar Magarda Bijaigarh	h.s. " "	4° 35' 7.327 4° 15' 53.72 4° 30' 8.139	22768 14301 20330	4° 312 2° 709 3° 850	56	Kandakot, II Khoradi, IV Dibar Hill Mark	80° 5' 32 23° 38' 9	5° 00' 63.00 4° 61' 58.86 5° 00' 02.39	101461 41294 100055	19° 216 7° 821 18° 950	15 "
44	Bagdharua, I Pipardar Bijaigarh	h.s. " "	4° 15' 53.72 5° 01' 70.93 4° 99' 35.42	14301 104158 98524	2° 709 19° 727 18° 660	57	Magarda Bijaigarh Rangarh Building	78° 34' 39 64° 54' 42	4° 57' 41.40 4° 53' 07.91 4° 35' 73.27	37509 34057 22708	7° 104 6° 564 4° 312	7 "
45	Gora, XXXV Mirgarani Murgari Hill Mark (heliotrope)	h.s.	4° 19' 26.03 4° 12' 00.05 3° 90' 11.71	15585 13185 7965	2° 952 2° 497 1° 508	58	Bagdharua, I Kham, V Moraina	9° 57' 39 140° 50' 9	4° 49' 54.15 5° 05' 78.36 4° 94' 57.72	31291 114245 88262	5° 026 21° 637 16° 716	12 15
46	Khempur Kandwa Kona Building	h.s. " "	4° 68' 99.7 4° 01' 68.90 4° 69' 31.95	48753 10395 49340	9° 233 1° 969 9° 345	59	Kandakot, II Khoradi, IV Surharia No. 1	80° 58' 40 52° 27' 6	4° 96' 21.22 5° 09' 56.47 5° 00' 02.39	91648 124637 100055	17° 358 23° 605 18° 950	" 7
47	Khempur Kandwa Kona Temple No. 1	h.s. " "	4° 69' 08.87 4° 04' 71.84 4° 69' 31.95	50083 11148 49340	9° 485 2° 111 9° 345	60	Kandakot, II Basaha, III Surharia No. 1	65° 20' 22 110° 21' 30	4° 01' 23.42 5° 09' 56.47 5° 10' 91.68	10288 124637 128578	1° 949 23° 605 24° 352	15 7
48	Khempur Kandwa Kona Temple No. 2	h.s. " "	4° 71' 20.89 4° 00' 16.31 4° 69' 31.95	51533 10038 49340	9° 760 1° 901 9° 345	61	Kandakot, II Surharia No. 1 Surharia No. 2	77° 55' 53 98° 53' 4	3° 84' 53.38 5° 09' 11.82 5° 09' 56.47	7007 123362 124637	1° 327 23° 364 23° 605	" "
49	Pipardar Bijaigarh Gidwas Hill Mark	h.s. " "	4° 41' 48.16 4° 29' 10.51 4° 15' 53.72	25991 19546 14301	4° 922 3° 702 2° 709	62	Basaha, III Surharia No. 1 Surharia No. 2	40° 39' 54 32° 25' 37 106° 54' 29	3° 84' 53.38 3° 76' 68.80 4° 01' 23.42	7007 5766 10288	1° 327 1° 092 1° 949	15 7 "
50	Pipardar Bijaigarh Bajjnath Hill Mark	h.s. " "	4° 62' 64.58 4° 52' 21.26 4° 15' 53.72	42311 33276 14301	8° 014 6° 302 2° 709	63	Basaha, III Surharia No. 2 Naugarh Building	65° 11' 47 93° 31' 56	4° 15' 91.96 4° 20' 04.03 3° 76' 68.80	14428 15864 5766	2° 733 3° 004 1° 092	15 7
51	Pipardar Magarda Bajjnath Hill Mark	h.s. " "	4° 34' 26.68 4° 52' 21.26 4° 30' 8.139	22012 33276 20330	4° 169 6° 302 3° 850	64	Basaha, III Surharia No. 1 Basaha	99° 5' 19 44° 53' 43	3° 93' 03.99 4° 15' 81.66 4° 01' 23.42	8571 14393 10288	1° 623 2° 726 1° 949	" "
52	Bagdharua, I Pipardar Kothadei Platform	h.s.	4° 89' 68.99 4° 32' 27.18 4° 99' 35.42	78868 21024 98524	14° 937 3° 982 18° 660	65	Basaha, III Surharia No. 2 Basaha	80° 4' 38 23° 14' 30	4° 15' 28.70 4° 15' 81.66 3° 76' 68.80	14219 14393 5766	2° 693 2° 726 1° 092	" "
53	Kandakot, II Basaha, III Mangesar Hill Mark	h.s.	5° 16' 21.44 4° 64' 70.63 5° 10' 91.68	145259 44307 128578	27° 511 8° 403 24° 352	66	Basaha, III Surharia No. 1 Surharia Hill Mark	54° 57' 20 95° 40' 5	4° 23' 47.92 4° 31' 95.35 4° 01' 23.42	17171 26871 10288	3° 252 3° 953 1° 949	15 7
54	Basaha, III Khoradi, IV Mangesar Hill Mark	h.s.	5° 15' 01.05 5° 16' 21.44 5° 00' 65.58	141288 145259 101522	26° 759 27° 511 19° 228	67	Garda, VI Sikri, VII Champur	18° 0' 55 156° 17' 44	5° 03' 84.13 4° 54' 42.87 5° 15' 23.21	109248 35018 142011	20° 691 6° 632 26° 896	15 7

NOTE.—Station Gora, XXXV sp. pertains to the Calcutta Longitudinal Series of the South-East Quadrilateral.

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	
68	Sikri, VII Barhání, VIII Chainpur	75 50 49 41 59 53	4' 998357 5' 038413 4' 877294	99622 109248 75587	18.868 20.691 14.278	15 7	Sikri, VII Balhui Deobal	76 28 3	4' 323024 4' 789118 4' 779549	21039 61534 60193	3.085 11.654 11.400	Inch 7	
69	Garda, VI Chainpur Paharía	78 35 5 58 43 2	4' 603839 4' 443832 4' 544287	40164 27786 35018	7.607 5.263 6.632	15 7	Kota Balhui Málda House	118 28 38 12 46 49	4' 243678 3' 644496 4' 175762	17526 4411 14989	3.319 0.835 2.839	"	
70	Chainpur Paharía Mahesari	44 20 8 118 33 23	4' 128778 4' 504562 4' 003839	13452 31957 40164	2.548 6.052 7.607	"	Kota Balhui Thiari House	32 50 30 23 28 1	3' 989874 3' 855742 4' 175762	9770 7174 14989	1.850 1.359 2.839	"	
71	Garda, VI Chainpur Mahesari	65 49 36 25 35 24 88 35 0	4' 504562 4' 179831 4' 544287	31957 15130 35018	6.052 2.865 6.632	15 7	Kota Balhui Deheri Siwála	76 0 12 29 39 5	4' 179088 3' 886539 4' 175762	15104 7701 14989	2.861 1.458 2.839	"	
72	Paharía Mahesari Rámgarh Siwála	21 28 11 71 4 2	3' 602696 4' 105049 4' 128778	4928 12736 13452	0.933 2.412 2.548	"	Balhui Deobal Sikandarpur Siwála	106 10 23	4' 390995 4' 502950 4' 323024	24603 36550 21039	4.660 6.923 3.985	"	
73	Paharía Mahesari Bhubooh Temple No. 1	133 11 56 17 47 49	4' 305867 3' 928366 4' 128778	20224 8479 13452	3.830 1.606 2.548	"	Kota Balhui Ilia Siwála	92 47 55 31 22 9	4' 257530 3' 974510 4' 175762	18094 9430 14989	3.427 1.786 2.839	"	
74	Paharía Mahesari Bhubooh Temple No. 2	141 9 41 20 1 10	4' 417494 4' 154594 4' 128778	26151 14276 13452	4.953 2.704 2.548	"	Kota Balhui Samra Semaphore	28 9 20 140 40 41	4' 562544 4' 690592 4' 175762	36521 49045 14989	6.917 9.289 2.839	"	
75	Chainpur Mahesari Chainpur Masjid	71 16 38 7 21 19	4' 489554 3' 620449 4' 504562	30871 4173 31957	5.847 0.790 6.052	"	Kota Balhui Parmandápur Semaphore	90 55 13 62 9 16	4' 519772 4' 406384 4' 175762	33096 29267 14989	6.268 5.543 2.839	"	
76	Chainpur Mahesari Chainpur Siwála	57 14 0 11 9 15	4' 460956 3' 822789 4' 504562	28904 6650 31957	5.474 1.259 6.052	"	Balhui Deobal Parmandápur Semaphore	24 44 31	4' 707659 4' 519772 4' 323024	51010 33096 21039	9.661 6.268 3.985	"	
77	Garda, VI Sikri, VII Kota	12 12 0 154 3 4	4' 836225 4' 887243 5' 152321	68584 77134 142011	12.989 14.609 26.896	15 7	Khorádi, IV Sikri, VII Bhoili	16 23 41 19 4 9 144 32 10	4' 813245 4' 876768 5' 126177	65050 75295 133714	12.320 14.260 25.325	15 7	
78	Garda, VI Barhání, VIII Kota	43 46 49 101 42 49	4' 974088 4' 887243 5' 124908	94208 77134 133324	17.842 14.609 25.251	15 7	Khorádi, IV Bhoili Magan Diwána	11 10 2 25 22 22 143 27 36	4' 389041 4' 733928 4' 876768	24493 54191 75295	4.639 10.263 14.260	15 7	
79	Sikri, VII Kota Balhui	50 35 30 118 18 57	4' 175762 4' 779549 4' 836225	14989 60193 68584	2.839 11.400 12.989	"	Sikri, VII Bhoili Magan Diwána	15 31 35 119 9 48	4' 389041 4' 902552 4' 813245	24493 79901 65050	4.639 15.133 12.320	15 7	
80	Sikri, VII Kota Deobal	85 35 26	4' 548825 4' 789118 4' 836225	35385 61534 68584	6.702 11.654 12.989	"	Khorádi, IV Magan Diwána Bheri	69 30 0 66 32 01 43 57 59	4' 864008 4' 854929 4' 733928	73115 71603 54191	13.848 13.561 10.263	15 7	

SECONDARY TRIANGULATION. TRIANGLES.

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used	No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles					Log. feet	Feet	Miles	
94	Khorádi, IV	58 19 58	4.855295	71663	13.573	Inch	108	Bhoili	20 9 44	4.419725	26286	4.978	Inch
	Bhoili	58 15 17	4.854929	71603	13.561	15		Bheri	49 50 15	4.765527	58281	11.038	7
	Bheri	63 24 45	4.876768	75295	14.260	"		Chunar Fort	4.855295	71663	13.573	"	"
95	Bhoili	76 25 12	4.861536	72700	13.769	"	104	Bheri	68 5 18	4.380951	24041	4.553	"
	Bheri	73 22 13	4.855295	71663	13.573	"		Chunar Fort	28 56 26	4.098273	12539	2.375	"
	Rája Kirpál-ka-Pahár	82 53 15	4.861536	72700	13.769	"		Murli	4.410239	25718	4.871	"	
96	Magan Diwána	86 20 56	4.864008	73115	13.848	"	105	Bheri	65 23 44	4.379351	23953	4.536	"
	Bheri	6 53 5	4.136169	13683	2.591	"		Chunar Fort	4.098273	12539	2.375	"	
	Rája Kirpál-ka-Pahár	156 34 40	4.136169	13683	2.591	"		Murli	4.419725	26286	4.978	"	
97	Magan Diwána	49 1 50	4.014537	10340	1.958	"	106	Bheri	20 52 57	4.108111	12827	2.429	"
	Rája Kirpál-ka-Pahár	43 23 20	3.973479	9408	1.782	"		Chunar Fort	24 44 13	4.177756	15058	2.852	"
	Latifgath Fort	88 49 8	4.228683	16931	3.207	"		Tamalganj Building	4.410239	25718	4.871	"	
98	Magan Diwána	37 17 0	4.011073	10258	1.943	"	107	Bheri	46 36 21	4.762254	57842	10.955	"
	Rája Kirpál-ka-Pahár	49 1 50	4.014537	10340	1.958	"		Chunar Fort	114 32 42	4.859799	72410	13.714	"
	Ahraura Temple	88 49 8	4.228683	16931	3.207	"		Bhoili Semaphore	4.410239	25718	4.871	"	
99	Magan Diwána	87 6 5	4.925066	84152	15.938	"	108	Magan Diwána	24 23 1	4.479904	30193	5.718	"
	Rája Kirpál-ka-Pahár	40 1 35	4.733928	54191	10.263	"		Bheri	64 19 47	4.818988	65916	12.484	"
	Darhana Building	20 34 4	4.410239	25718	4.871	"		Chunar Church	4.864008	73115	13.848	"	
100	Khorádi, IV	87 6 5	4.925066	84152	15.938	"	109	Bheri	59 26 20	4.374275	23674	4.484	"
	Magan Diwána	40 1 35	4.733928	54191	10.263	"		Murli	4.438451	27444	5.108	"	
	Chunar Fort	20 34 4	4.410239	25718	4.871	"		Miria Temple	4.098273	12539	2.375	"	
101	Magan Diwána	66 35 27	4.827239	67180	12.723	"	110	Bheri	11 31 18	4.303100	20006	3.806	"
	Bheri	92 50 29	4.864008	73115	13.848	"		Chunar Fort	153 40 4	4.649605	44628	8.452	"
	Chunar Fort	20 34 4	4.410239	25718	4.871	"		Sultánpur Stables	4.410239	25718	4.871	"	
102	Bhoili	96 34 56	4.862780	72909	13.808	"	111	Sikri, VII	67 5 32	4.895638	78639	14.894	15
	Rája Kirpál-ka-Pahár	52 34 13	4.765527	58281	11.038	"		Bhoili	63 16 15	4.882236	76249	14.441	7
	Chunar Fort	4.575562	37632	7.127	"	Benares Mosqué		4.813245	65050	12.320	"		

February 1879.

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

GORA 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	Name of station with azimuths of surrounding points	° ' "	No. of triangle giving distance	Name of station with azimuths of surrounding points	° ' "	No. of triangle giving distance
BAGHARUA, I			BALHUI h.s.			BARHANI, VIII		
Kandwa	24 53 58	86	Deobal	h.s.	71 19 6	Basoha, III	17 1 56 04	10
Gora, XXXV*	27 5 45 07	1	Sikandarpur Siwála		111 35 21	Sikri, VII	62 21 10 03	7
Khemppur	51 39 14	34	Samra Semaphore		132 37 22	Hirdepur, IX	124 9 10 48	11
Kothádei Platform	69 41 29	52	Sikri, VII		154 59 6	Barhanpur, X	176 47 16 43	12
Pipardar	88 10 54	33	Parmandápur Semaphore		211 8 47	Garda, VI	341 46 34 96	7
Mogarda	95 11 50	42	Iliá Siwála		241 55 54	Chainpur	h.s.	68
Bijaigarh	95 37 17	44	Deheri Siwála		243 38 58			
Kandákot, II	100 49 6 83	2	Thiari House		249 50 2	BARHANPUR, X		
Basoha, III	149 11 39 41	3	Málda House		260 31 14	Hirdepur, IX	48 57 41 97	12
Moraina	174 50 46	58	Kota	h.s.	273 18 3	Gaura, XI	124 35 20 96	13
Khám, V	184 48 25 38	4				Kanaun, XII	179 11 7 03	14
Sewádhí, XXXVIII*	337 35 7 35	1	BANIAPAR, XVIII			Barháni, VIII	350 46 53 67	12
			Balariáganj, XVII		69 12 55 97			
BALARIAGANJ, XVII			Barhiáchak, XIX		124 19 22 79			
Samenda, XV	1 52 45 16	19	Rájiagarh, XX		180 16 50 03	BARHACHAK, XIX	158 40 17 01	23
Barhiáchak, XIX	177 12 4 06	21	Bhadir, XVI		355 3 6 75	Bhisia, XXI	244 4 5 31	22
Baniápár, XVIII	249 8 54 57	20				Rajgarh, XX	304 15 7 74	21
Bhadir, XVI	306 19 36 32	19	BARHANI, VIII			Balariáganj, XVII	357 11 51 06	21
			Kota	h.s.	16 16 57			

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

Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance																														
BASOHA, III Naugarch Building Mangesar Hill Mark Kandakot, II Surharia No. 2 Khorádi, IV Surharia No. 1 Basoha Surharia Hill Mark Sikri, VII Barháni, VIII Garda, VI Khám, V Bagdharua, I	63 68 53 3 62 8 60 64 66 6 10 5 4 8	o ' " 4 23 12 27 36 25 44 54 31 21 h.s. 69 34 59 94 46 28 80 " 110 14 53 " 146 15 51 165 12 13 169 45 32 33 196 58 23 95 254 49 13 41 293 1 34 57 329 6 8 51	63 68 53 3 62 8 60 64 66 6 10 5 4 8	BHOILI h.s. Chunar Fort Benares Mosque Sikri, VII Magan Diwána h.s.	102 111 90 91	o ' " 98 51 3 172 37 37 235 53 52 h.s. 355 3 40	DHARAMSINGUA, LVI* Gharbaria, LVIII* Nandaur, XXVII GARDA, VI Khám, V Basoha, III Kota Sikri, VII Chainpur Barháni, VIII Mahesari Pahária	31 31 5 5 77 6 67 7 71 69	o ' " 281 11 55 17 357 21 15 13 7 23 31 43 74 55 55 00 h.s. 118 2 59 " 130 14 58 80 " 148 15 54 " 161 49 47 32 " 214 5 30 " 226 50 59	DHARAMSINGUA, LVI* Gharbaria, LVIII* Nandaur, XXVII GARDA, VI Khám, V Basoha, III Kota Sikri, VII Chainpur Barháni, VIII Mahesari Pahária	31 31 5 5 77 6 67 7 71 69	CHAINPUR h.s. Sikri, VII Barháni, VIII Chainpur Masjid Chainpur Siwála Pahária Mahesari Garda, VI	67 68 75 76 69 70 67	o ' " 124 32 13 166 32 6 231 22 27 245 25 5 h.s. 285 32 36 " 302 39 5 " 328 14 29	GHARA, XI Hirdepur, IX Kharakpur, XIII Kanaun, XII Barhanpur, X	13 15 14 13	o ' " 1 24 35 25 176 20 44 06 238 43 17 98 304 31 17 37	GHARBARIA, LVIII* Nandaur, XXVII Dharamsingua, LVI* Rájabári, XXVI	80 31 30	o ' " 56 45 5 03 101 16 55 19 357 5 26 76	GHARBARIA, LVIII* Nandaur, XXVII Dharamsingua, LVI* Rájabári, XXVI	80 31 30	GORA, XXXV† Kandakot, II Bahradol H. Mark. (Heliotrope) Pipardar Murgari H. Mark. (Heliotrope) Khempur Bagdharua, I Kandwa Mirgaráni Sewádhí, XXXVIII†	2 39 32 45 35 1 37 40 1	o ' " 158 45 21 41 109 20 49 h.s. 175 43 42 179 4 18 h.s. 192 45 33 206 59 21 12 " 209 34 35 " 270 36 6 " 282 48 30 21	GORA, XXXV† Kandakot, II Bahradol H. Mark. (Heliotrope) Pipardar Murgari H. Mark. (Heliotrope) Khempur Bagdharua, I Kandwa Mirgaráni Sewádhí, XXXVIII†	2 39 32 45 35 1 37 40 1	HIRDEPUR, IX Sikri, VII Gaura, XI Barhanpur, X Barháni, VIII	11 13 12 11	o ' " 6 9 42 58 181 24 25 72 228 53 29 88 304 4 36 79	HIRDEPUR, IX Sikri, VII Gaura, XI Barhanpur, X Barháni, VIII	11 13 12 11	KANAUN, XII Gaura, XI Kharakpur, XIII Chit Bisram, XIV Barhanpur, X	14 15 16 14	o ' " 58 47 17 91 127 50 16 12 180 0 5 61 359 11 2 57	KANAUN, XII Gaura, XI Kharakpur, XIII Chit Bisram, XIV Barhanpur, X	14 15 16 14
BASOHA h.s. Surharia No. 1 Basoha, III Surharia No. 2	64 64 65	h.s. 11 8 57 326 15 14 349 29 44	64 64 65	CHIT BISRAM, XIV Kanaun, XII Kharakpur, XIII Samenda, XV Bhadir, XVI	16 16 17 18	o ' " o 5 62 66 53 29 73 124 13 23 76 180 33 11 75	CHIT BISRAM, XIV Kanaun, XII Kharakpur, XIII Samenda, XV Bhadir, XVI	16 16 17 18	CHUNAR FORT s. Bheri Tamálganj Building Murli Sultánpur Stables Bhoili Semaphore Magan Diwána Khorádi, IV	101 106 104 110 107 100	h.s. " 31 28 17 56 12 30 60 24 43 185 8 21 276 55 35 298 37 48 338 39 23	CHUNAR FORT s. Bheri Tamálganj Building Murli Sultánpur Stables Bhoili Semaphore Magan Diwána Khorádi, IV	101 106 104 110 107 100	DEOBAL h.s. Sikandarpur Siwála Sikri, VII Parmandápur Semaphore Balhui Kota	85 80 89 81 80	o ' " 145 7 11 174 49 31 226 33 3 251 17 34 260 24 57	DEOBAL h.s. Sikandarpur Siwála Sikri, VII Parmandápur Semaphore Balhui Kota	85 80 89 81 80	DEOKALI, XXIII Muhammadpur, XXV Saraia, XXIV Katwar, XXII Bhisia, XXI	27 26 25 25	o ' " 185 5 35 64 226 33 55 44 290 14 28 54 337 58 25 76	DEOKALI, XXIII Muhammadpur, XXV Saraia, XXIV Katwar, XXII Bhisia, XXI	27 26 25 25														
BHISIA, XXI Deokali, XXIII Katwar, XXII Rájgarh, XX Barhiáchak, XIX	25 24 23 23	h.s. 158 0 13 65 235 27 34 34 287 25 47 40 338 38 45 15	25 24 23 23	BHOILI h.s. Rája Kirpál-ka-Pahár Khorádi, IV Bheri	95 90 94	h.s. 2 16 7 20 26 2 78 41 19	BHOILI h.s. Rája Kirpál-ka-Pahár Khorádi, IV Bheri	95 90 94	DEOBAL h.s. Sikandarpur Siwála Sikri, VII Parmandápur Semaphore Balhui Kota	85 80 89 81 80	o ' " 145 7 11 174 49 31 226 33 3 251 17 34 260 24 57	DEOBAL h.s. Sikandarpur Siwála Sikri, VII Parmandápur Semaphore Balhui Kota	85 80 89 81 80	DEOKALI, XXIII Muhammadpur, XXV Saraia, XXIV Katwar, XXII Bhisia, XXI	27 26 25 25	o ' " 185 5 35 64 226 33 55 44 290 14 28 54 337 58 25 76	DEOKALI, XXIII Muhammadpur, XXV Saraia, XXIV Katwar, XXII Bhisia, XXI	27 26 25 25																			

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

Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance
KANDAKOT, II Súrhan Ghat (Pass) Dibar Hill Mark Khorádi, IV Surharia No. 1 Surharia No. 2 Basoha, III Bagdharua, I Mangesar Hill Mark Gora, XXXV*	55 56 8 59 61 3 2 53 2	37 6 18 h.s. 93 49 46 173 55 17.62 220 29 32 223 40 35 224 47 39.17 260 36 48.08 327 57 49 338 39 33.79	17 32 38 h.s. 142 4 4 s. 158 41 44 h.s. 200 24 2 " 211 34 4 216 47 43.20 " 272 55 49 274 38 46.18 346 0 26 353 54 29.40	MAHESARI h.s. Bhuboah Temple No. 1 Paharía Rámgarh Siwála MIRGARANI h.s. Gora, XXXV* Murgari H. Mark (Heliotrope) Khempur Kandwa MORAINA h.s. Khám, V Bagdharua, I MUHAMMADPUR, XXV Deokali, XXIII Nandaaur, XXVII Rájabári, XXVI Saraia, XXIV MURI h.s. Miria Temple Chunar Fort Chunar Fort Bheri NANDAUR, XXVII Dharamsingua, LVI† Gharbaria, LVIII† Rájabári, XXVI Muhammadpur, XXV PAHARIA h.s. Rámgarh Siwála Garda, VI Mahesari Chainpur Bhuboah Temple No. 1 Bhuboah Temple No. 2 PIPARDAB h.s. Gidwas Hill Mark Bijaigarh Magarda Bagdharua, I Kothádei Platform Bajnáth Hill Mark Khempur Sewádhí, XXXVIII* Gora, XXXV*	78 70 72 40 45 40 41 58 58 27 29 28 27 109 105 104 104 31 30 29 29 72 69 70 69 73 74 49 43 42 33 52 50 34 32 32
KANDWA h.s. Mirgaráni Gora, XXXV* Bahrádol Hill Mark (Heliotrope) Khempur Kona Temple No. 2 Kona Building Kona Temple No. 1 Bagdharua, I KATWAR, XXII Bhisia, XXI Deokali, XXIII Saraia, XXIV Rájgarh, XX	41 37 38 36 48 46 47 36 24 25 26 24	24 50 57 h.s. 29 37 46 83 55 39 h.s. 162 4 4 173 12 54 174 12 54 174 54 54 204 50 45 55 31 8.78 110 19 51.58 172 49 41.12 332 7 47.56	80 27 38 h.s. " 93 19 12 121 28 32 126 9 42 143 54 42 169 19 24 184 14 25 186 7 7 196 14 57 211 47 50 297 57 46	MORAINA h.s. Khám, V Bagdharua, I MUHAMMADPUR, XXV Deokali, XXIII Nandaaur, XXVII Rájabári, XXVI Saraia, XXIV MURI h.s. Miria Temple Chunar Fort Chunar Fort Bheri NANDAUR, XXVII Dharamsingua, LVI† Gharbaria, LVIII† Rájabári, XXVI Muhammadpur, XXV PAHARIA h.s. Rámgarh Siwála Garda, VI Mahesari Chainpur Bhuboah Temple No. 1 Bhuboah Temple No. 2 PIPARDAB h.s. Gidwas Hill Mark Bijaigarh Magarda Bagdharua, I Kothádei Platform Bajnáth Hill Mark Khempur Sewádhí, XXXVIII* Gora, XXXV*	56 93 100 90 91 9 59 8 54 8 80 79 87 83 77 84 88 86 78 82 77 96 97 91 98 98 100 108 91 92 99 42 43 57 42 51 71 70 75 76 74
KHAM, V Bagdharua, I Basoha, III Moraina Garda, VI KHARAKPUR, XIII Samenda, XV Chit Bisráam, XIV Kanaun, XII Gaura, XI KHEMPUR h.s. Mirgaráni Gora, XXXV* Bahrádol Hill Mark (Heliotrope) Pípardar Bagdharua, I Kona Temple No. 2 Kona Temple No. 1 Kona Building Kandwa	17 16 15 15 40 35 38 34 34 48 47 46 36	15 15 0 h.s. 22 8 5 31 36 14 64 16 50 98 8 15 118 42 19 122 31 16 175 3 50 220 22 27 286 25 52 h.s. 58 48 11 " 97 2 12 175 36 51 275 5 45 315 16 21 34 6 9 h.s. 122 41 9 130 2 28 135 50 24 221 13 22	58 48 11 h.s. " 97 2 12 175 36 51 275 5 45 315 16 21 34 6 9 h.s. 122 41 9 130 2 28 135 50 24 221 13 22	MAHESARI h.s. Garda, VI Chainpur Chainpur Masjid Chainpur Siwála Bhuboah Temple No. 2	72 69 70 69 73 74 49 43 42 33 52 50 34 32 32

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

AZIMUTHS OF STATIONS AND INTERSECTED POINTS.

Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance
RAJABARI, XXVI Muhammadpur, XXV Nandaur, XXVII Gharbaria, LVIII* Saraia, XXIV	46 6 27.44 104 47 13.81 177 5 40.38 354 55 42.01	SARAIA, XXIV Deokali, XXIII Muhammadpur, XXV Rajabari, XXVI Katwar, XXII	28 29 30 28	SURHARIA No. 1. h.s. Kandakot, II Khoradi, IV Basoha Surharia Hill Mark Basoha, III Surharia No. 2	59 59 64 66 60 61
RAJA KIRPAL-KA-PAHAR h.s. Latifgarh Fort Bheri Chunar Fort Ahraura Temple Bhoili Magan Diwana Darnana Building	38 40 3 108 53 47 129 41 47 151 51 23 182 16 0 195 14 43 232 31 43	SEWADHI, XXXVIII† Gora, XXXV† Pipardar Bagdharua, I	1 82 1	SURHARIA No. 2 h.s. Kandakot, II Surharia No. 1 Basoha Basoha, III Naugarh Building	61 61 65 62 63
RAJGARH, XX Baniapur, XVIII Barhichhak, XIX Bhisia, XXI Katwar, XXII	0 16 51.49 64 8 22.58 107 31 37.24 152 10 3.69	SIKRI, VII Khoradi, IV Magan Diwana Bhoili Benares Mosque Hirdepur, IX Barhani, VIII Chainpur Garda, VI Kota Balhui Basoha, III Deobal	9 92 90 111 11 7 6 77 79 6 80	SURHAU GHAT (Pass) h.s. Kandakot, II Mangesar Hill Mark	61 61 65 62 63
SAMENDA, XV Balariaganj, XVII Bhadir, XVI Chit Bistrām, XIV Kharakpur, XIII	181 52 34.03 242 24 45.14 304 8 52.12 358 42 3.56				55 55

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

February 1879.

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

GORA 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 letters h.s. and s. The names in italics are those of the territories, states or districts in which the stations or points are situated. For alterations of district and other boundaries and consequent transfer of stations from one district to another since date of survey, see Addendum following page 8—o.

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Ahraura Temple. (<i>Mirzapur</i>) o ' "</p> <p style="padding-left: 40px;">λ 25 1 19'4</p> <p style="padding-left: 40px;">L 83 4 19'0</p> <p style="padding-left: 40px;">No. 98</p>	<p>Bahrádol Hill Mark (Heliotrope). (<i>Mirzapur</i>) On bank of Dol nadi about 3 miles W. of Dadhi and 2 miles E. of Bahrádol village.</p> <p style="padding-left: 40px;">λ 24 16 27'19</p> <p style="padding-left: 40px;">L 83 14 18'75</p> <p style="padding-left: 40px;">Nos. 38, 39</p>	<p>Balariáganj, XVII. (<i>Azamgarh</i>. <i>Vide page 6—o.</i>) o ' "</p> <p style="padding-left: 40px;">λ 26 12 0'37</p> <p style="padding-left: 40px;">L 83 16 23'13</p> <p style="padding-left: 40px;">H_s 259'50*</p> <p style="padding-left: 40px;"><i>h</i> 33</p> <p style="padding-left: 40px;">No. 19</p>
<p>Azamgarh Church, (<i>Azamgarh</i>) N.E. Spire.</p> <p style="padding-left: 40px;">λ 26 3 3'3</p> <p style="padding-left: 40px;">L 83 13 21'4</p>	<p>Baijnáth Hill Mark. (<i>Mirzapur</i>) On platform, about 2 miles S.E. of village so called and the same distance N.E. of Tharia village.</p> <p style="padding-left: 40px;">λ 24 31 27'05</p> <p style="padding-left: 40px;">L 83 20 22'69</p> <p style="padding-left: 40px;">Nos. 50, 51</p>	<p>Balhui h.s. (<i>Mirzapur</i>) On the highest part of a hill about 3½ miles W. of the large village of Ilia and ¼ mile N.E. of the small village of Mankpra; pargana Kera Mangraur.</p> <p style="padding-left: 40px;">λ 25 3 2'24</p> <p style="padding-left: 40px;">L 83 19 51'91</p> <p style="padding-left: 40px;">No. 79</p>
<p>Azamgarh Temple. (<i>Azamgarh</i>) On Siwála Ghat.</p> <p style="padding-left: 40px;">λ 26 3 57'5</p> <p style="padding-left: 40px;">L 83 13 52'0</p>	<p>Bajaur Hill Mark. (<i>Mirzapur</i>) About 4 miles N.E. of Chokahra village.</p> <p style="padding-left: 40px;">λ 24 56 30'67</p> <p style="padding-left: 40px;">L 82 58 8'77</p>	<p>Baniápár, XVIII. (<i>Azamgarh</i>. <i>Vide page 6—o.</i>)</p> <p style="padding-left: 40px;">λ 26 15 7'72</p> <p style="padding-left: 40px;">L 83 25 29'46</p> <p style="padding-left: 40px;">H_s 244'07*</p> <p style="padding-left: 40px;"><i>h</i> 25</p> <p style="padding-left: 40px;">No. 20</p>
<p>Bagdharua, I. (<i>Mirzapur</i>. <i>Vide page 3—o.</i>)</p> <p style="padding-left: 40px;">λ 24 32 49'67</p> <p style="padding-left: 40px;">L 83 32 13'14</p> <p style="padding-left: 40px;">H 2108</p> <p style="padding-left: 40px;"><i>h</i> 16</p> <p style="padding-left: 40px;">No. 1</p>	<p>Bakta House. (<i>Basti</i>) Flag on Gosáin's house on the Rapti river.</p> <p style="padding-left: 40px;">λ 26 45 32'6</p> <p style="padding-left: 40px;">L 83 16 34'3</p>	

* These heights refer to the mark-stone let into the ground floor of the tower.

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Bánkot Temple. (<i>Asamgarh</i>) λ 26 7 34.1 L 83 16 55.1	Barhiáchak, XIX. (<i>Gorakhpur</i> . <i>Vide page 6—0</i>) λ 26 21 1.50 L 83 15 53.77 H 273 h 28 No. 21	Benares, Siwála Ghat. (<i>Benares</i>) λ 25 17 40.5 L 83 3 0.3
Barhaj Temple. (<i>Gorakhpur</i>) On left bank of the Gogra river. λ 26 16 28.6 L 83 46 13.4	Basoha, III. (<i>Mirzapur</i> . <i>Vide page 4—0</i>) λ 24 52 59.91 L 83 19 1.67 H 1256 h <i>Not forthcoming</i> No. 3	Benares, Tulsí Dás's Ghat. (<i>Benares</i>) λ 25 17 22.0 L 83 2 57.5
Barhalganj Temple No. 1, (<i>Gorakhpur</i>) Highest. λ 26 16 47.2 L 83 33 18.7	Basoha h.s. (<i>Mirzapur</i>) On a knoll appertaining to the Bindháchal range, and N.N.W. of Basoha principal station from which it is separated by a branch of the Matani stream; pargana Kera Mangraur. A platform marks the station. λ 24 54 58.5 L 83 17 34.8 Nos. 64, 65	Benares, Turret, (<i>Benares</i>) High, in city. λ 25 18 31.3 L 83 3 4.5
Barhalganj Temple No. 2. (<i>Gorakhpur</i>) λ 26 16 49.0 L 83 32 49.2	Bhadir, XVI. (<i>Asamgarh</i> . <i>Vide page 6—0</i>) λ 26 5 19.87 L 83 26 25.82 H 283 h 33 No. 18	Bhaurai Building. (<i>Mirzapur</i>) White square building in village. λ 25 6 15.4 L 82 52 7.5
Barhalganj Temple No. 3. (<i>Gorakhpur</i>) λ 26 16 48.3 L 83 32 52.3	Benares, Bisheshwar Temple, (<i>Benares</i>) N. Spire. λ 25 18 39.2 L 83 3 12.2	Bheri h.s. (<i>Mirzapur</i>) About a mile S. of Kanwahi and 1½ miles S.E. of Marfa village. A platform marks the station. λ 25 3 41.77 L 82 52 43.95 Nos. 93, 94
Barhalganj Temple No. 4. (<i>Gorakhpur</i>) λ 26 16 48.4 L 83 32 52.6	Benares, Mán Mandir. (<i>Benares</i>) The Hindu Observatory. λ 25 18 24.9 L 83 3 13.3	Bhisia, XXI. (<i>Gorakhpur</i> . <i>Vide page 6—0</i>) λ 26 28 57.29 L 83 12 27.30 H 283 h 23 No. 23
Barhalganj Temple No. 5. (<i>Gorakhpur</i>) λ 26 16 48.6 L 83 32 51.2	Benares Masjid. (<i>Benares</i>) Dome of Gyánbápi Masjid. λ 25 18 38.0 L 83 3 12.4	Bhoili h.s. (<i>Mirzapur</i>) On the highest point of the hill which has the village of that name at its foot and the Semaphore on its shoulder; pargana Bhoili. A platform denotes the site of observation. λ 25 6 1.55 L 83 5 28.25 No. 90
Barhalganj Temple No. 6. (<i>Gorakhpur</i>) λ 26 16 49.6 L 83 32 57.8	Benares Mosque, (<i>Benares</i>) Minaret, E. pillar. λ 25 18 54.1 L 83 3 38.3 No. 111	Bhoili Mosque, (<i>Mirzapur</i>) White, on S. face of a small hill, about 200 yards N. of village. λ 25 6 14.3 L 83 5 44.4
Barháni, VIII. (<i>Benares</i> . <i>Vide page 4—0</i>) λ 25 17 49.56 L 83 27 21.90 H_s 275.07* h 27 Nos. 7, 10	Benares Rájghat s. (<i>Benares</i>) On building in old fort. λ 25 19 35.59 L 83 4 39.99	
Barhanpur, X. (<i>Ghazipur</i> . <i>Vide page 5—0</i>) λ 25 32 6.83 L 83 26 28.87 H_s 256.58† h 22 No. 12	Benares, Sikraul Observatory. (<i>Benares</i>) λ 25 20 1.8 L 83 1 43.9	

* This height refers to the mark-stone let into the upper surface of the pillar.

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

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Bhoili Semaphore. (<i>Mirzapur</i>) λ 25 6 9.6 L 83 5 34.7 No. 107	Chainpur Mausoleum, (<i>Shahabad</i>) Old high, top of dome. λ 25 1 49.5 L 83 31 52.8	Chunar Monument, (<i>Mirzapur</i>) Highest, in burial ground at foot of the fort. λ 25 7 18.1 L 82 55 3.0
Bhubooah Temple No. 1. (<i>Shahabad</i>) λ 25 1 24.4 L 83 38 58.4 No. 73	Chainpur Siwála, (<i>Shahabad</i>) Small and Elegant, W. of Chainpur village. λ 25 2 17.3 L 83 32 40.4 No. 76	Chunar Semaphore. (<i>Mirzapur</i>) λ 25 7 16.2 L 82 55 9.2.
Bhubooah Temple No. 2. (<i>Shahabad</i>) λ 25 2 13.8 L 83 39 34.5 No. 74	Chakia Bungalow. (<i>Mirzapur</i>) Rája's bungalow. λ 25 2 45.4 L 83 15 54.5	Chunar Temple. (<i>Mirzapur</i>) Near ferry-ghat. λ 25 7 36.6 L 82.55 17.2
Bijaigarh h.s. (<i>Mirzapur</i>) On building in fort. λ 24 34 29.59 L 83 13 30.11 Nos. 43, 44	Chakia Hill, (<i>Mirzapur</i>) Small. λ 25 2 34.6 L 83 16 4.8	Chunar, Tikor Dargah. (<i>Mirzapur</i>) In karbalu. λ 25 6 54.9 L 82 54 43.8
Biktamb Hill Stone. (<i>Gya</i>) λ 24 14 9.8 L 83 48 7.3 See Synoptical Vol. of the Calcutta Longitudinal Series of the South-East Quadrilateral.	Chakia Siwála, (<i>Mirzapur</i>) High, W. of tank. λ 25 2 44.3 L 83 15 43.1	Chunar, Tikor House. (<i>Mirzapur</i>) Staircase of Mr. DeGruyther's house. λ 25 7 3.7 L 82 54 51.9
Bisheshwarpur Factory, (<i>Mirzapur</i>) Godown. λ 25 12 33 L 83 3 39	Chikda Temple. (<i>Mirzapur</i>) On ghat. λ 25 12 19.8 L 83 3 8.6	Chunar, Tikor Temple. (<i>Mirzapur</i>) On bank of the Ganges. λ 25 7 8.9 L 82 54 56.6
Budhásali h.s. (<i>Shahabad</i>) On a swell of ground about 1½ miles S. of Khám principal station; pargana Chainpur. A small heap of stones marks the station. λ 24 45 51.86 L 83 33 9.56	Chit Bistrám, XIV. (<i>Azamgarh. Vide page 5—0.</i>) λ 25 54 2.82 L 83 26 18.58 H_s 251.29* h 23 No. 16	Danwár Hill Mark. (<i>Garhjat States, Chota Nagpore Division</i>) In Sirgúja. λ 23 57 33.50 L 83 30 9.24 See Synoptical Vol. of the Calcutta Longitudinal Series of the South-East Quadrilateral.
Chainpur h.s. (<i>Shahabad</i>) On a hill about 1 mile S.W. of the town of that name; pargana Chainpur. λ 25 1 49.86 L 83 31 34.68 Nos. 67, 68	Chunar Church, (<i>Mirzapur</i>) Tower, in Cantonment. λ 25 7 50.5 L 82 55 46.3 No. 108	Darhana Building, (<i>Mirzapur</i>) White and black. λ 25 1 31.1 L 83 7 38.2 No. 99
Chainpur Indigo Factory. (<i>Shahabad</i>) Chimney of bungalow. λ 25 1 37.6 L 83 32 5.0	Chunar Fort, (<i>Mirzapur</i>) Flagstaff. λ 25 7 30.0 L 82 55 1.6 Nos. 102, 103	Deheri Siwála. (<i>Mirzapur</i>) In village. λ 25 4 8.6 L 83 22 19.1 No. 84
Chainpur Masjid, (<i>Shahabad</i>) Small, near S.W. limit of village. λ 25 2 15.7 L 83 32 10.1 No. 75	Chunar Fort s. (<i>Mirzapur</i>) On building called the <i>Baramahal</i> in centre of Barracks. λ 25 7 19.10 L 82 55 9.99 Nos. 100, 101	Deobal h.s. (<i>Mirzapur</i>) On a hill about 1 mile S.E. of Chakia, a large village and country seat of the Rája of Benares; pargana Kera Mangraur. λ 25 1 55.44 L 83 16 15.19 Nos. 80, 81

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

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Deokali, XXIII. (Gorakhpur. Vide page 7—0.)</p> <p>λ 26° 37' 54" 11 L 83° 8' 25" 98 H 293 h 23 No. 25</p> <p>Deopura h.s. (Mirzapur) About 4 miles S.W. of Rámpur village. λ 24° 56' 27" 54 L 82° 49' 25" 89 See Synoptical Vol. of the Gurwáni Meridional Series.</p> <p>Deori Fort s. (Azamgarh) λ 26° 16' 28" 21 L 83° 33' 0" 76</p> <p>Deori Ghat s. (Azamgarh) At Indigo Factory bungalow. λ 26° 16' 20" 51 L 83° 33' 35" 30</p> <p>Deori Masjid, N. Minaret. (Azamgarh) λ 26° 16' 28" 2 L 83° 33' 3" 7</p> <p>Deori Masjid, S. Cupola. (Azamgarh) λ 26° 16' 28" 1 L 83° 33' 3" 6</p> <p>Deori Masjid, S. Minaret. (Azamgarh) λ 26° 16' 29" 7 L 83° 33' 10" 8</p> <p>Deori Temple No. 1. (Azamgarh) λ 26° 16' 28" 4 L 83° 33' 7" 0</p> <p>Deori Temple No. 2. (Azamgarh) λ 26° 16' 29" 6 L 83° 33' 11" 2</p> <p>Dharamsingua, LVI.* (Gorakhpur. Vide page 7—0.) λ 27° 4' 50" 15 L 83° 6' 33" 09 H 309 h 25 No. 31</p>	<p>Dharua Temple No. 1. (Ghazipur) In plain E. of village. λ 25° 32' 41" 0 L 83° 27' 49" 2</p> <p>Dharua Temple No. 2. (Ghazipur) On road side. λ 25° 32' 44" 1 L 83° 27' 34" 0</p> <p>Dhaurára Siwála. (Mirzapur) In village. λ 25° 6' 38" 5 L 82° 52' 52" 7</p> <p>Dibar Hill Mark. (Mirzapur) About 1½ miles N. of Khadra and 2 miles N.E. of Purwa Ganpat. A platform marks the station. λ 24° 38' 24" 00 L 82° 55' 11" 17 No. 56</p> <p>Gadápahári Building. (Mirzapur) Small stone building on hill. λ 25° 6' 49" 8 L 82° 54' 57" 1</p> <p>Ganges River No. 1 s. (Mirzapur) On N. bank, ¼ a mile E. of Silpi. λ 25° 7' 2" 87 L 82° 53' 13" 77</p> <p>Ganges River No. 2 s. (Mirzapur) On S. bank about 350 yards W. of Tamálganj. λ 25° 6' 36" 56 L 82° 53' 44" 36</p> <p>Ganges River No. 3 s. (Mirzapur) On N. bank, ¼ of a mile S.E. of Mowai. λ 25° 7' 22" 65 L 82° 54' 8" 74</p> <p>Ganges River No. 4 s. (Mirzapur) On N. bank, ¼ a mile S.E. of Misirpura village. λ 25° 7' 35" 66 L 82° 54' 35" 97</p> <p>Ganges River No. 5 s. (Mirzapur) On N. bank above the ferry-ghat and about 20 yards N. of the road from Chunar to Benares. λ 25° 7' 56" 11 L 82° 54' 50" 04</p>	<p>Ganges River No. 6 s. (Mirzapur) On right bank, on a square stone platform near the northern limits of the Chunar parade ground. λ 25° 8' 14" 77 L 82° 55' 46" 17</p> <p>Ganges River No. 7 s. (Mirzapur) On N. high bank near the village of Chamrauli. λ 25° 8' 50" 22 L 82° 55' 12" 55</p> <p>Ganges River No. 8 s. (Mirzapur) On E. bank, in the Khádar lands formed by the river. λ 25° 8' 41" 75 L 82° 56' 8" 25</p> <p>Ganges River No. 9 s. (Mirzapur) On W. bank, 1 mile S. of the station of Sultánpur. λ 25° 9' 57" 77 L 82° 55' 31" 39</p> <p>Ganges River No. 10 s. (Mirzapur) In the alluvial land on E. bank opposite to Sultánpur. λ 25° 10' 29" 66 L 82° 56' 42" 83</p> <p>Ganges River No. 11 s. (Mirzapur) On W. bank, within the compound of a bungalow belonging to Mr. DeGruyther. λ 25° 10' 54" 87 L 82° 56' 12" 64</p> <p>Ganges River No. 12 s. (Mirzapur) On E. bank, in the Khádar lands formed by the river. λ 25° 11' 4" 22 L 82° 56' 50" 03</p> <p>Ganges River No. 13 s. (Mirzapur) On high W. bank, ¼ a mile E. of the Sultánpur burial ground. λ 25° 11' 42" 05 L 82° 56' 33" 18</p>

* Of the North-East Longitudinal Series.

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Ganges River No. 14 s. (Mirzapur) On E. bank, in the Khádar lands about ½ a mile W. of Saipur village.	Ganges River No. 24 s. (Benares) On left bank.	Ganges River No. 35 s. (Benares) On left bank.
λ 25 11 28·35	λ 25 12 38·31	λ 25 13 0·42
L 82 57 8·38	L 82 58 59·34	L 83 2 17·86
Ganges River No. 15 s. (Mirzapur) On high W. bank.	Ganges River No. 25 s. (Mirzapur) On right bank.	Ganges River No. 36 s. (Mirzapur) On right bank.
λ 25 11 58·11	λ 25 12 15·84	λ 25 12 13·62
L 82 56 52·67	L 83 0 0·68	L 83 2 55·60
Ganges River No. 16 s. (Mirzapur) On E. bank, in the Khádar lands form- ed by the river.	Ganges River No. 26 s. (Benares) On left bank.	Ganges River No. 37 s. (Mirzapur) On right bank.
λ 25 11 41·00	λ 25 12 41·47	λ 25 12 59·12
L 82 57 21·27	L 82 59 51·70	L 83 3 46·51
Ganges River No. 17 s. (Mirzapur) On W. bank.	Ganges River No. 27 s. (Benares) On left bank.	Ganges River No. 38 s. (Benares) On left bank.
λ 25 12 8·34	λ 25 12 42·27	λ 25 13 12·46
L 82 57 13·50	L 83 0 16·87	L 83 2 52·67
Ganges River No. 18 s. (Mirzapur) On right bank.	Ganges River No. 28 s. (Mirzapur) On right bank.	Ganges River No. 39 s. (Benares) On left bank.
λ 25 12 1·36	λ 25 12 15·95	λ 25 13 50·79
L 82 57 59·33	L 83 0 25·48	L 83 3 24·99
Ganges River No. 19 s. (Mirzapur) On left bank.	Ganges River No. 29 s. (Benares) On left bank.	Ganges River No. 40 s. (Mirzapur) On right bank.
λ 25 12 18·38	λ 25 12 41·58	λ 25 13 26·40
L 82 57 37·62	L 83 0 33·40	L 83 4 6·54
Ganges River No. 20 s. (Mirzapur) On left bank.	Ganges River No. 30 s. (Mirzapur) On right bank.	Ganges River No. 41 s. (Benares) On left bank.
λ 25 12 28·20	λ 25 12 16·02	λ 25 14 7·42
L 82 58 18·18	L 83 0 52·62	L 83 3 33·68
Ganges River No. 21 s. (Mirzapur) On right bank.	Ganges River No. 31 s. (Benares) On left bank.	Ganges River No. 42 s. (Mirzapur) Also called Chota Mirzapur, on right bank.
λ 25 12 10·53	λ 25 12 46·77	λ 25 14 13·59
L 82 58 32·26	L 83 0 50·35	L 83 4 30·79
Ganges River No. 22 s. (Mirzapur) On left bank.	Ganges River No. 32 s. (Mirzapur) On right bank.	Ganges River No. 43 s. (Benares) On left bank.
λ 25 12 34·69	λ 25 12 14·10	λ 25 14 42·42
L 82 58 40·96	L 83 1 25·55	L 83 3 58·74
Ganges River No. 23 s. (Mirzapur) On right bank.	Ganges River No. 33 s. (Benares) On left bank.	Ganges River No. 44 s. (Benares) On right bank.
λ 25 12 14·66	λ 25 12 48·88	λ 25 15 24·21
L 82 59 9·81	L 83 1 40·78	L 83 4 20·22
Ganges River No. 23 s. (Mirzapur) On right bank.	Ganges River No. 34 s. (Mirzapur) On right bank.	Ganges River No. 45 s. (Benares) On left bank.
λ 25 12 14·66	λ 25 12 12·95	λ 25 15 4·31
L 82 59 9·81	L 83 2 3·44	L 83 3 35·34

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Ganges River No. 46 s. (Benares) On left bank. λ 25 15 47.90 L 83 3 18.25	Ganges River No. 56 s. (Ghazipur) On right bank. λ 25 35 6.46 L 83 42 8.36	Ganges River No. 67 s. (Ghazipur) On right bank. λ 25 32 6.64 L 83 48 1.14
Ganges River No. 47 s. (Benares) On left bank. λ 25 16 47.44 L 83 2 56.17	Ganges River No. 57 s. (Ghazipur) On left bank. λ 25 36 9.02 L 83 42 50.69	Ganges River No. 68† s. (Ghazipur) On left bank. λ 25 32 54.49 L 83 49 30.57
Ganges River No. 48 s. (Benares) On left bank. λ 25 17 3.92 L 83 3 0.44	Ganges River No. 58 s. (Ghazipur) On right bank. λ 25 34 55.42 L 83 43 18.13	Ganges River No. 69† s. (Ghazipur) On right bank. λ 25 31 30.95 L 83 49 47.61
Ganges River No. 49 s. (Benares) On right bank. λ 25 17 37.13 L 83 3 57.60	Ganges River No. 59 s. (Ghazipur) On left bank. λ 25 36 10.17 L 83 43 53.76	Garda, VI. (Shahabad. Vide page 4—0.) λ 24 50 54.86 L 83 34 54.96 H 1065 h I No. 5
Ganges River No. 50* s. (Benares) On right bank. λ 25 17 57.21 L 83 4 20.00	Ganges River No. 60 s. (Ghazipur) On right bank. λ 25 34 44.83 L 83 43 41.57	Gaura, XI. (Ghazipur. Vide page 5—0.) λ 25 37 59.15 L 83 17 4.76 H 289 h 20 No. 13
Ganges River No. 51* s. (Benares) On right bank. λ 25 18 40.58 L 83 4 50.54	Ganges River No. 61 s. (Ghazipur) On left bank. λ 25 35 59.39 L 83 45 31.74	Gharbaria, LVIII†. (Gorakhpur. Vide page 8—0.) λ 27 2 52.80 L 83 17 32.64 H 279.60§ h 25 No. 30
Ganges River No. 52* s. (Ghazipur) On right bank. λ 25 34 11.16 L 83 38 5.52	Ganges River No. 62 s. (Ghazipur) On right bank. λ 25 34 16.11 L 83 44 34.29	Ghauspur Dome. (Ghazipur) λ 25 36 44.6 L 83 44 28.1
Ganges River No. 53* s. (Ghazipur) On right bank. λ 25 34 51.64 L 83 39 32.15	Ganges River No. 63 s. (Ghazipur) On right bank. λ 25 33 38.78 L 83 45 30.38	Ghazipur Chapel. (Ghazipur) Belfry of Roman Catholic Chapel. λ 25 33 43.0 L 83 35 21.0
Ganges River No. 54 s. (Ghazipur) On right bank. λ 25 35 0.56 L 83 40 39.61	Ganges River No. 64 s. (Ghazipur) On left bank. λ 25 34 0.66 L 83 46 42.54	Ghazipur Church Steeple. (Ghazipur) In Cantonment. λ 25 33 36.46 L 83 35 14.25
Ganges River No. 55 s. (Ghazipur) On left bank. λ 25 36 0.58 L 83 41 28.29	Ganges River No. 65 s. (Ghazipur) On right bank. λ 25 32 40.05 L 83 46 52.08	
	Ganges River No. 66 s. (Ghazipur) On left bank. λ 25 33 23.71 L 83 48 3.44	

* Two portions of the River Ganges were spanned by the Secondary Series here given, of which one lies to the west and the other to the east of the Principal Triangulation; the two series are not continuous, the western terminates at stations 50 and 51, the eastern begins at 52 and 53. † The continuation of this triangulation will be found in the Co-ordinate List of the Hurluong Meridional Series. ‡ 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.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Ghazipur City No. 1 s. (Ghazipur) On Nawáb Hikut Ali Khán's Chahal-sutún. λ 25 35 1'51 L 83 38 24'34	Ghazipur New Burial Ground, (Ghazipur) Highest tomb. λ 25 33 6'9 L 83 34 33'0	Gogra River No. 60 s. (Gorakhpur) On left bank, 0.8 of a mile W. of the large village of Painah. λ 26 15 14'53 L 83 48 50'66
Ghazipur City No. 2 s. (Ghazipur) On Chahal-sutún gateway, Nawáb's Sarai. λ 25 35 6'02 L 83 38 20'74	Ghazipur Old Burial Ground. (Ghazipur) λ 25 34 45 L 83 35 2	Gogra River No. 61 s. (Azamgarh) On right bank, about 0.1 of a mile N.E. of Harnhi Tola and the same distance N.W. of Mallah Tola. λ 26 13 44'46 L 83 46 12'40
Ghazipur Fort. (Ghazipur) Shiv Náráyan Rái's house in old fort. λ 25 34 48'9 L 83 38 5'0	Ghazipur Permit Office, (Ghazipur) Chimney. λ 25 35 20'1 L 83 38 51'9	Gogra River No. 62 s. (Gorakhpur) On left bank, on a high mound near the large village of Barhuj and close to the high road to Gorakhpur. λ 26 16 19'05 L 83 46 17'26
Ghazipur Hospital, (Ghazipur) Medical servants' quarters. λ 25 32 50'4 L 83 34 55'8	Ghazipur Temple No. 1. (Ghazipur) Thákurdwára temple. λ 25 34 32'6 L 83 36 59'3	Gogra River No. 63 s. (Azamgarh) On right bank, 0.3 of a mile W. of Dharampur, 0.4 of a mile N. of Siswah and 0.7 of a mile N.E. of Bhansiawa. λ 26 13 44'71 L 83 43 5'18
Ghazipur House No. 1. (Ghazipur) Mr. Bruce's factory house. λ 25 35 30'8 L 83 39 11'3	Ghazipur Temple No. 2. (Ghazipur) Sheodayál Missar's temple. λ 25 34 54'2 L 83 37 39'8	Gogra River No. 64 s. (Gorakhpur) On left bank, S.E. of and close to Rájpur and near the junction of the Rápti and Gogra rivers. λ 26 16 28'26 L 83 43 20'75
Ghazipur House No. 2. (Ghazipur) Opium agent's house, signal staff. λ 25 34 25'8 L 83 37 10'4	Ghazipur Temple No. 3. (Ghazipur) On Khirki Ghat. λ 25 35 0'0 L 83 38 19'1	Gogra River No. 64a s. (Gorakhpur) At junction of the Gogra and Rápti rivers. λ 26 16 13'94 L 83 43 33'06
Ghazipur Indigo Factory. (Ghazipur) Chimney of Mr. Bruce's factory in Gosáindápur. λ 25 35 35'7 L 83 39 8'2	Ghazipur Temple No. 4. (Ghazipur) Mughal-pura temple. λ 25 35 5'8 L 83 38 30'1	Gogra River No. 65 s. (Gorakhpur) On left bank, near the high road to Gorakhpur, 0.2 of a mile W. of Gunghat, 0.7 of a mile S. of Khairanti and 1 mile E. of Bhundadi. λ 26 16 11'27 L 83 40 41'80
Ghazipur, Jamalpur Rauza. (Ghazipur) λ 25 35 33'8 L 83 38 21'5	Ghazipur Temple No. 5. (Ghazipur) Mádhó Dás's temple. λ 25 35 5'8 L 83 38 30'2	Gogra River No. 66 s. (Azamgarh) On right bank, 0.5 of a mile N.W. of Semara and 0.5 of a mile E. of Súrjapura fort. λ 26 13 52'04 L 83 39 27'73
Ghazipur Masjid No. 1. (Ghazipur) Manas-alam-ka-Masjid. λ 25 34 36'9 L 83 37 30'1	Ghazipur Temple No. 6. (Ghazipur) Kháki Gosáin's temple. λ 25 35 23'7 L 83 39 2'1	Gogra River No. 67 s. (Gorakhpur) On left bank, 0.5 of a mile S. of Dehra. λ 26 16 45'92 L 83 38 25'02
Ghazipur Masjid No. 2. (Ghazipur) In Nawábganj. λ 25 35 21'7 L 83 38 22'0	Gidwas Hill Mark. (Mirzapur) On platform, about 2 miles N.E. of Bandhaura village and 2½ miles N.W. of Panki Purwa. λ 24 30 39'26 L 83 11 24'25 No. 49	
Ghazipur Monument. (Ghazipur) Spire of dome of Lord Cornwallis's Monument. λ 25 33 30'7 L 83 35 19'7	Gogra River No. 59* s. (Azamgarh) On right bank, near a Sota on an island and surrounded by Jhau jungle. λ 26 12 57'76 L 83 49 17'96	

* The preceding portion of this triangulation will be found in the Co-ordinate List of the Hurliáong Meridional Series and the continuation in that of the Gurwáni Meridional Series.

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Gogra River No. 68 s. (Azamgarh) On right bank, 0·8 of a mile N. of Belwati and 0·6 of a mile E. of Gauridi. λ 26 14 7·91 L 83 36 36·05	Gogra River No. 78 s. (Azamgarh) On right bank, 0·4 of a mile N. of Baramadpur and 1 mile E. of Sahabadia. λ 26 15 10·33 L 83 28 16·63	Gogra River No. 88 s. (Azamgarh) On right bank, 0·2 of a mile S.W. of Dangardhia and 0·3 of a mile N.W. of Nawa Tola. λ 26 17 33·85 L 83 14 49·11
Gogra River No. 69 s. (Gorakhpur) On left bank, 0·2 of a mile W. of Kunda Tola. λ 26 17 9·73 L 83 36 21·74	Gogra River No. 79 s. (Gorakhpur) On Madruha fort on left bank. λ 26 17 25·50 L 83 27 11·38	Gogra River No. 89 s. (Gorakhpur) On left bank, 0·7 of a mile S. of Shio- pur Tola and 1·3 miles S.W. of Bfipur. λ 25 19 21·42 L 83 13 25·12
Gogra River No. 70 s. (Azamgarh) On right bank, 0·1 of a mile W. of Sarain village. λ 26 16 8·18 L 83 34 30·80	Gogra River No. 80 s. (Azamgarh) On right bank, 0·6 of a mile N. of Kunrohwa and 0·6 of a mile E. of Bariarganj. λ 26 16 59·06 L 83 25 16·51	Gogra River No. 90 s. (Azamgarh) On right bank, 0·2 of a mile N. of Patkauli and 0·7 of a mile E. of Tiprajpur. λ 26 16 4·30 L 83 11 52·33
Gogra River No. 71 s. (Gorakhpur) On left bank, on a mud fort in Nar- harpur village. λ 26 16 42·67 L 83 33 57·86	Gogra River No. 81 s. (Gorakhpur) On left bank at its junction with the Kwana nadi, 0·2 of a mile W. of Marha and about the same distance from Shio- pur. λ 26 19 22·19 L 83 25 8·67	Gogra River No. 91 s. (Gorakhpur) On left bank, 0·6 of a mile S.W. of Hukia and 0·7 of a mile S. of Hukia village. λ 26 19 5·60 L 83 11 55·46
Gogra River No. 72 s. (Azamgarh) On right bank, 0·5 of a mile S.E. of Deori and 0·25 of a mile N.E. of Bhurabar Tola. λ 26 15 57·71 L 83 33 30·72	Gogra River No. 82 s. (Azamgarh) On right bank, 0·6 of a mile W. of Hajipur, 0·2 of a mile N.E. of Bhadaura and 0·75 of a mile E. of Bānka. λ 26 17 30·54 L 83 22 56·30	Gogra River No. 92 s. (Azamgarh) On right bank, 0·2 of a mile W. of Nahrupur and 1·2 miles S.E. of Bankatwa. λ 26 17 32·06 L 83 9 50·15
Gogra River No. 73 s. (Gorakhpur) On left bank, on a paka house near the Ghat in the large village of Barhalganj. λ 26 16 49·18 L 83 33 2·41	Gogra River No. 83 s. (Gorakhpur) On left bank, 1·3 miles S.W. of Sri- nagar and 1·4 miles S.E. of Bhiropur. λ 26 19 35·39 L 83 22 45·79	Gogra River No. 93 s. (Fyzabad) On right bank, 0·6 of a mile N.E. of Bhadia. λ 26 19 46·72 L 83 8 59·54
Gogra River No. 74 s. (Azamgarh) On right bank, 0·5 of a mile N.W. of Dhausuti village. λ 26 15 53·71 L 83 32 32·06	Gogra River No. 84 s. (Azamgarh) On right bank, 1·4 miles N. of Rauna- pār and 1 mile N.E. of Mansāganj. λ 26 18 14·99 L 83 19 38·40	Gogra River No. 94 s. (Gorakhpur) On left bank, 0·2 of a mile S. of Pande Sisawa and 0·6 of a mile S.W. of Rāmdīāl Sisawa. λ 26 21 36·29 L 83 11 34·25
Gogra River No. 75 s. (Gorakhpur) On left bank, 0·8 of a mile W. of Jaipār village and 0·2 of a mile S.W. of a paka building (Devi's Sthān). The road to Gorakhpur passes close N. of the station. λ 26 16 54·69 L 83 31 28·12	Gogra River No. 85 s. (Gorakhpur) On left bank, 0·4 of a mile S. of Shio- pur and 0·2 of a mile S.E. of Dewal Pande's Tola. λ 26 19 59·91 L 83 20 33·54	Gogra River No. 95 s. (Fyzabad) On right bank, 1·4 miles E. of Kaithia and 1·5 miles S.E. of Gamaria paka building (Sati). λ 26 22 40·02 L 83 7 56·31
Gogra River No. 76 s. (Azamgarh) On right bank, 0·2 of a mile N.W. of Nauli village. λ 26 15 22·78 L 83 30 45·19	Gogra River No. 86 s. (Gorakhpur) On left bank, 1 mile S. of Kaliānpur and 0·4 of a mile S.W. of Urdiha Tola. λ 26 20 0·88 L 83 18 12·54	Gogra River No. 95 ₁ s. (Fyzabad) On right bank, 0·6 of a mile N.E. of Raimanpur and 0·4 of a mile E. of Pikar. λ 26 22 12·72 L 83 7 42·78
Gogra River No. 77 s. (Gorakhpur) On left bank, 0·1 of a mile N.E. of Dalua and 0·6 of a mile S. of Nawāda. λ 26 16 45·38 L 83 28 59·60	Gogra River No. 87 s. (Azamgarh) On right bank, 0·8 of a mile N. W. of Guriana Tola and 0·4 of a mile S.W. of Khar-Khaia. λ 26 18 5·18 L 83 17 11·24	Gogra River No. 96 s. (Gorakhpur) On left bank, 0·1 of a mile W. of Tennai and 0·5 of a mile S. of Khairanti on the road to Belwa. λ 26 23 19·44 L 83 10 30·17

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Gogra River No. 97 s. (Gorakhpur) On left bank, 0.1 of a mile N.W. of Nargara and 0.2 of a mile S.W. of Tikapur. λ 26 24 48.45 L 83 8 55.10	Gogra River No. 107 s. (Fyzabad) On right bank, near Chahora Ghat. λ 26 30 44.06 L 82 56 51.25	Gorakhpur House No. 1. (Gorakhpur) Bábu Hari's house. λ 26 45 3.9 L 83 23 28.6
Gogra River No. 98 s. (Fyzabad) On right bank, near Khamária Ghat, 0.3 of a mile E. of Janpur. λ 26 23 59.54 L 83 6 59.95	Gogra River No. 108 s. (Basti) On left bank, 0.5 of a mile N.W. of Kalilapur, 0.2 of a mile E. of Surha and 1 mile S. of Udua. λ 26 32 13.70 L 82 58 12.95	Gorakhpur House No. 2. (Gorakhpur) Damingar Collector's house. λ 26 45 37.4 L 83 22 6.9
Gogra River No. 99 s. (Basti) On left bank, 0.4 of a mile N. of Dholbája, 0.1 of a mile N.E. of Gaighat Tola and 0.4 of a mile W. of Kataha. λ 26 26 22.68 L 83 7 4.02	Gogra River No. 109 s. (Basti) On left bank, 1.3 miles W. of Gobindganj, 0.8 of a mile S. W. of Nakahi and 0.6 of a mile E. of Teghpur. λ 26 33 7.88 L 82 56 20.76	Gorakhpur Jail. (Gorakhpur) Upper ward. λ 26 44 46 L 83 23 38
Gogra River No. 100 s. (Fyzabad) On right bank, on a fort belonging to the Tálukdár of Chandápur. λ 26 24 57.18 L 83 6 1.87	Gogra River No. 110 s. (Fyzabad) On right bank, 0.3 of a mile N.W. of Maini village, on an old paka fort close to the water's edge. λ 26 32 35.21 L 82 53 54.83	Gorakhpur Mosque. (Gorakhpur) Near Rájghat. λ 26 44 28.6 L 83 23 37.6
Gogra River No. 101 s. (Basti) On left bank, 0.3 of a mile N.W. of Tilah, 0.4 of a mile S. of Rámpur and 0.7 of a mile N.E. of Daulatpur. λ 26 28 10.38 L 83 5 50.89	Gogra River No. 111 s. (Basti) On left bank, contiguous to the village of Dihupura, 0.3 of a mile W. of Ismailpur or Pareo and 0.5 of a mile S.W. of Chibra. λ 26 36 5.17 L 82 53 40.44	Gorakhpur Temple. (Gorakhpur) On Rájghat. λ 26 44 10.2 L 83 23 45.4
Gogra River No. 102 s. (Fyzabad) On right bank close to the water's edge, and on the edge of a patch of thorny jungle. λ 26 27 37.40 L 83 3 40.04	Gogra River No. 112 s. (Fyzabad) On right bank, 0.3 of a mile N.E. of Tarauli. λ 26 33 29.99 L 82 52 19.02	Gosáindáspur Temple. (Ghazipur) λ 25 35 9.1 L 83 38 36.5
Gogra River No. 103 s. (Basti) On left bank, 0.4 of a mile W. of Turkauli, 1 mile S.W. of Unchágnon and 0.6 of a mile S. of the Chapra Gurudwára. λ 26 29 28.51 L 83 3 20.45	Gogra River No. 113 s. (Basti) On left bank, 0.9 of a mile S. of Parmesrapur and 0.7 of a mile S.E. of Dhusua. λ 26 35 43.76 L 82 51 11.73	Hara Sida Hill Flag. (Lohardugga) λ 23 56 11.2 L 83 42 2.8
Gogra River No. 104 s. (Fyzabad) On right bank, in a patch of thorny jungle and E. of Masuraha village. λ 26 28 6.94 L 83 2 53.16	Gogra River No. 114 s. (Fyzabad) On right bank, 0.1 of a mile N. of Lachápur, and 0.2 of a mile S.E. of Mathia. λ 26 33 39.20 L 82 50 49.20	See 'Hará Sida' of the Synoptical Volume of the Calcutta Longitudinal Series of the South-East Quadrilateral.
Gogra River No. 105 s. (Fyzabad) On right bank, in Kasba Berar. λ 26 29 12.11 L 83 0 27.71	Gogra, XXXV.* (Mirzapur. Vide page 3—0.) λ 24 4 55.71 L 83 16 40.65 H 1828 h 3 No. 1	Hirdepur, IX. (Benares. Vide page 5—0.) λ 25 24 23.05 L 83 16 42.64 H, 288.88† h 32 No. 11
Gogra River No. 106 s. (Basti) On left bank, 0.6 of a mile N.W. of Gularia and 0.2 of a mile S.E. of Chapra. λ 26 31 25.21 L 83 0 16.48	Gorakhpur Building. (Gorakhpur) Ghási Mián-ka-Rausa. λ 26 45 20.4 L 83 22 53.0	Ilia Siwála, (Shahabad) Higher of two, in the middle of the village. λ 25 4 26.6 L 83 22 45.6 No. 86
		Kanaun, XII. (Ghazipur. Vide page 5—0.) λ 25 43 3.62 L 83 26 18.56 H, 270.52‡ h 20 No. 14

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

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Kandákot, II. <i>(Mirzapur. Vide page 3—0.)</i> λ 24 37 56.86 L 83 2 37.78 H 1446 h Not forthcoming No. 2	Kharakpur, XIII. <i>(Azamgarh. Vide page 5—0.)</i> λ 25 50 8.73 L 83 16 13.26 H 286 h 20 No. 15	Kotan Hill Stone. <i>(Lohardugga)</i> λ 24 6 2.2 L 83 44 34.0 See Synoptical Vol. of the Calcutta Longitudinal Series of the South-East Quadrilateral.
Kandwa h.s. <i>(Mirzapur)</i> About a mile S. of village so called and 2 miles N. of Diwi village. λ 24 17 26.72 L 83 24 25.80 Nos. 36, 37	Khás Bargawa Mark. <i>(Mirzapur)</i> λ 25 1 12.30 L 82 49 48.09	Kothádei Platform. <i>(Mirzapur)</i> On left bank of the Son river. λ 24 31 37.3 L 83 28 39.6 No. 52
Kariapahár Shikhar. <i>(Mirzapur)</i> About 2 miles N.E. of Budim village and 2½ miles W. of Dhusauria. λ 24 57 4 L 83 10 45	Khempur h.s. <i>(Mirzapur)</i> About 2½ miles S. of village so called and 3 miles W. of Kon Khás village. λ 24 25 11.77 L 83 21 41.43 Nos. 34, 35	Kuba h.s. <i>(Mirzapur)</i> About 1½ miles N. of Kuba Khurd (small) village. λ 25 2 20.26 L 82 51 9.34
Katailwa Temple. <i>(Gorakhpur)</i> λ 26 17 25.9 L 83 44 23.4	Khorádi, IV. <i>(Mirzapur. Vide page 4—0.)</i> λ 24 54 22.50 L 83 0 42.69 H 1037 h Not forthcoming No. 8	Kurtha Temple. <i>(Ghazipur)</i> On ghat. λ 25 32 43.9 L 83 34 48.5
Katesar Temple, <i>(Benares)</i> Half finished in 1846. λ 25 16 53.0 L 83 4 58.3	Kona Building. <i>(Mirzapur)</i> White building in village. λ 24 25 27.3 L 83 23 32.6 No. 46	Kusáhi Temple. <i>(Mirzapur)</i> λ 25 10 22.1 L 82 54 55.7 See Synoptical Vol. of the Gurwáni Meridional Series.
Kathaut Indigo Factory. <i>(Ghazipur)</i> W. corner of roof of bungalow. λ 25 36 31.6 L 83 43 36.9	Kona Temple No. 1. <i>(Mirzapur)</i> White temple at the northern extremity of village. λ 24 25 41.0 L 83 23 37.8 No. 47	Kusumi Temple. <i>(Ghazipur)</i> λ 25 33 18.3 L 83 29 41.5
Katwar, XXII. <i>(Gorakhpur. Vide page 6—0.)</i> λ 26 33 54.34 L 83 20 27.59 H_s 271.16* h 23 No. 24	Kona Temple No. 2. <i>(Mirzapur)</i> Old temple 500 yards N.W. of village. λ 24 25 53.7 L 83 23 19.9 No. 48	Larikákudan t.s. <i>(Benares)</i> λ 25 22 25.40 L 83 3 59.36
Kázipur Temple. <i>(Basti)</i> λ 26 45 14.9 L 83 10 46.7	Kota h.s. <i>(Shahabad)</i> On a hill about 1½ miles S. of the large village of Ilia and ¼ mile S.W. of Málda, a small village; pargana Chainpur. λ 25 2 53.67 L 83 22 34.65 Nos. 77, 78	Latifgarh Fort, <i>(Mirzapur)</i> N.E. tower. λ 24 59 4.5 L 83 4 32.9 No. 97
Khám, V. <i>(Shahabad. Vide page 4—0.)</i> λ 24 47 20.99 L 83 33 33.40 H 1442 h Not forthcoming No. 4	Madraha Masjid, <i>(Basti)</i> N. minaret. λ 26 31 34.2 L 82 59 23.4	Magan Diwána h.s. <i>(Mirzapur)</i> On an isolated hill about 1 mile N.E. of Ahraura; pargana Bhoili. A platform on the highest part of the hill, the top of which is nearly flat, denotes the site of observation. λ 25 1 59.82 L 83 5 51.18 Nos. 91, 92

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

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Magarda h.s. (<i>Mirzapur</i>) About 3 miles N.W. of Gudaun village.</p> <p>λ 24 34 2°01 L 83 17 34°93 No. 42</p>	<p>Muhammadpur Masjid. (<i>Azamgarh</i>)</p> <p>λ 26 10 30°0 L 83 16 51°0</p>	<p>Parmandápur Semaphore. (<i>Mirzapur</i>) About 3 miles N. of Ilia village.</p> <p>λ 25 7 42°8 L 83 22 58°2 Nos. 88, 89</p>
<p>Mahesari h.s. (<i>Shahabad</i>) On the highest part of a hill about 2½ miles S.W. of the large village of Blhuboah and ½ mile N.W. of Rámgarh, a small village; pargana Chainpur.</p> <p>λ 24 58 58°98 L 83 36 27°14 Nos. 70, 71</p>	<p>Murádeo Building. (<i>Benares</i>)</p> <p>λ 25 13 18 L 83 0 47</p>	<p>Parmit Temple. (<i>Ghazipur</i>)</p> <p>λ 25 31 37°4 L 83 31 55°0</p>
<p>Málda House. (<i>Mirzapur-Shahabad</i>) In centre of village.</p> <p>λ 25 3 30°8 L 83 22 59°9 No. 82</p>	<p>Murádeo Temple. (<i>Benares</i>)</p> <p>λ 25 13 19°1 L 83 0 47°2</p>	<p>Patita Fort. (<i>Mirzapur</i>) S.E. turret of palace.</p> <p>λ 25 3 5°3 L 82 59 47°0</p>
<p>Mangesar Hill Mark. (<i>Mirzapur</i>) On platform, about 2 miles S. of Belach and 2½ miles W. of Markáudi.</p> <p>λ 24 31 44°19 L 83 6 52°67 Nos. 53, 54</p>	<p>Murgari Hill Mark (heliotrope). (<i>Mirzapur</i>) On the highest part of the bluff.</p> <p>λ 24 7 6°32 L 83 16 38°34 No. 45</p>	<p>Pípardar h.s. (<i>Mirzapur</i>) On a hill about 1 mile E. of Pathári village. A platform marks the site of observation.</p> <p>λ 24 32 17°65 L 83 14 26°57 Nos. 32, 33</p>
<p>Milkípur Temple. (<i>Benares</i>) On ghat.</p> <p>λ 25 14 30°9 L 83 4 29°2</p>	<p>Murli h.s. (<i>Mirzapur</i>) On a hill about 2 miles S. of the Ganges.</p> <p>λ 25 5 21°45 L 82 51 22°55 Nos. 104, 105</p>	<p>Pirozpur Bridge. (<i>Ghazipur</i>) Over the Beas river.</p> <p>λ 25 39 31°5 L 83 31 56°4</p>
<p>Mirgaráni h.s. (<i>Mirzapur</i>) On the highest point of a hill about a mile N. of Gonda village and the same distance W. of Korhi.</p> <p>λ 24 4 54°87 L 83 18 6°60 Nos. 40, 41</p>	<p>Nandaur, XXVII. (<i>Basti. Vide page 7—o.</i>)</p> <p>λ 26 56 39°76 L 83 6 58°38 H 302 h 26 No. 29</p>	<p>Pirozpur Factory, (<i>Ghazipur</i>) Godown.</p> <p>λ 25 39 34 L 83 31 55</p>
<p>Miria Temple, (<i>Mirzapur</i>) Spire.</p> <p>λ 25 7 52°4 L 82 54 39°7 No. 109</p>	<p>Nandganj Masjid. (<i>Ghazipur</i>)</p> <p>λ 25 32 34°3 L 83 27 5°2</p>	<p>Rájabári, XXVI. (<i>Gorakhpur. Vide page 7—o.</i>)</p> <p>λ 26 54 3°04 L 83 18 2°67 H 267°89* h 28 No. 28</p>
<p>Moraina h.s. (<i>Shahabad</i>) On a hill above Jamni Nar village. A platform marks the site of observation.</p> <p>λ 24 51 36°89 L 83 30 21°69 No. 58</p>	<p>Narharpur Rája's House, (<i>Gorakhpur</i>) W. kalas.</p> <p>λ 26 16 48°5 L 83 34 22°7</p>	<p>Rája Kirpál-ka-Pahár h.s. (<i>Mirzapur</i>) On a hill which is connected by a lower ridge with the table-land of the Bindháchal and to the left of the road from Ahraura to Lauari by Amdar Ghat, and ½ a mile S. of Ahraura; pargana Bhoili. A small platform marks the station.</p> <p>λ 24 59 49°04 L 83 5 12°06 Nos. 95, 96</p>
<p>Muhammadpur, XXV. (<i>Gorakhpur. Vide page 7—o.</i>)</p> <p>λ 26 46 28°95 L 83 9 17°10 H 283 h 28 No. 27</p>	<p>Naugarh Building, (<i>Mirzapur</i>) Flag.</p> <p>λ 24 50 23°2 L 83 18 48°5 No. 63</p>	<p>Rájarh, XX. (<i>Gorakhpur. Vide page 6—o.</i>)</p> <p>λ 26 25 14°66 L 83 25 32°76 H 257°32* h 26 No. 23</p>
<p>Pahária h.s. (<i>Shahabad</i>) On a small rocky hill covered with jungle and rising about 60 feet above the surrounding plain, 200 yards S.E. of the village of that name and 2½ miles N. of Rámgarh; pargana Chainpur. A stone with ⊙ engraved on it and covered over with a pile of stones, marks the station.</p> <p>λ 25 0 3°08 L 83 38 35°34 No. 69</p>		

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

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Rámgarh Building. (Mirzapur) Centre of white house. λ 24 39 44·4 L 83 17 6·2 No. 57	Saipur Temple. (Gorakhpur) " " " " λ 26 43 43·9 L 83 23 30·5	Sikandarpur Siwála. (Mirzapur) " " " " λ 25 5 15·4 L 83 13 42·1 No. 85
Rámgarh Siwála, (Shahabad) Small. λ 24 58 26·1 L 83 37 6·8 No. 72	Samaspur House, (Mirzapur) Doorway near river. λ 25 6 30·3 L 82 53 23·2	Siklári Factory, (Ghazipur) Bungalow chimney. λ 25 43 19·9 L 83 28 55·1
Rámgarh Temple. (Mirzapur) λ 25 7 56·7 L 82 49 35·8	Samenda, XV. (Azamgarh. Vide page 6—o.) λ 26 0 23·97 L 83 15 57·85 H _s 260·29* h 25 No. 17	Sikri, VII. (Benares. Vide page 4—o.) λ 25 12 2·53 L 83 15 14·76 H 293 h 27 Nos. 6, 9
Ramna House. (Benares) Paka kothi in the park. λ 25 14 55·1 L 83 3 47·7	Samra Semaphore. (Mirzapur) λ 25 7 7·2 L 83 14 59·5 No. 87	Sultánpur Bungalow, (Mirzapur) Chimney of bow room. λ 25 11 6·8 L 82 56 11·9
Rámnagar Fort, (Benares) Flag. λ 25 16 7·3 L 83 4 1·9	Saraia, XXIV. (Gorakhpur. Vide page 7—o.) λ 26 44 10·32 L 83 19 1·26 H _s 256·76* h 28 No. 26	Sultánpur Masjid, (Mirzapur) Highest minaret. λ 25 11 33·9 L 82 55 55·6
Rámnagar House. (Benares) A large old upper storied brick house on the river side, S. of the fort. λ 25 15 37·2 L 83 4 16·7	Saraia Temple. (Gorakhpur) In village. λ 26 44 6·0 L 83 18 52·7	Sultánpur Monument. (Mirzapur) Highest pillar in burial ground. λ 25 11 31·2 L 82 56 8·2
Rámnagar Staircase. (Benares) λ 25 16 7 L 83 4 2	Sauram Temple No. 1, (Ghazipur) Small. λ 25 31 43·3 L 83 27 53·6	Sultánpur Stables. (Mirzapur) λ 25 10 37 L 82 55 30 No. 110
Rámnagar Temple. (Benares) On ghat N. of the fort. λ 25 16 15·2 L 83 4 0·7	Sauram Temple No. 2, (Ghazipur) Large. λ 25 31 55·3 L 83 27 24·2	Sultánpur s. (Mirzapur) Within the village so called. λ 25 10 29·52 L 82 55 59·72
Rámpur House. (Ghazipur) Gosáin's house near village. λ 25 39 18·1 L 83 31 32·7	Sewádhi, XXXVIII†. (Palamow. Vide page 8—o.) λ 23 58 24·17 L 83 47 40·02 H 1956 h 2 No. 1	Sultánpur Temple No. 1. (Mirzapur) λ 25 10 19·4 L 82 55 36·2
Sabitpur Temple. (Fyzabad) λ 26 19 45·9 L 83 8 33·3	Shikárganj Building. (Mirzapur) λ 25 0 56 L 83 9 49	Sultánpur Temple No. 2. (Mirzapur) On ghat. λ 25 10 21·5 L 82 55 45·7
Sahespura s. (Mirzapur) About ½ a mile S. of village so called. λ 25 10 2·56 L 83 0 11·32		Sultánpur Temple No. 3. (Mirzapur) Near the left bank of the Ganges. λ 25 10 40·5 L 82 56 8·9

* This height refers to the mark-stone let into the ground floor of the tower. † Of the Calcutta Longitudinal Series.

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Surharia Hill Mark. (Mirzapur) About 2 miles N.W. of Lendha village.</p> <p>λ 24 56 19·81 L 83 18 3·76 No. 66</p>	<p>Súrhaú Ghat (Pass) h.s. (Mirzapur) To the west of the pass and about 2 miles N.W. of Chirauli village. A platform marks the station.</p> <p> " " " λ 24 37 4·19 L 83 1 54·20 No. 55</p>	<p>Tári Factory, (Ghazipur) Bungalow.</p> <p> " " " λ 25 34 22·8 L 83 39 2·9</p>
<p>Surharia No. 1 h.s. (Mirzapur) About 1½ miles E. of Lowári village.</p> <p>λ 24 53 35·17 L 83 17 16·83 Nos. 59, 60</p>	<p>Talia Indigo Factory, (Gorakhpur) Chimney of bungalow.</p> <p>λ 26 14 25·3 L 83 50 56·1</p>	<p>Tendua Masjid. (Mirzapur) On hill.</p> <p>λ 25 6 36·9 L 82 54 40·6</p>
<p>Surharia No. 2 h.s. (Mirzapur) About 2 miles N. of Deokhár village.</p> <p>λ 24 52 39·98 L 83 18 2·98 Nos. 61, 62</p>	<p>Tamálganj Building. (Mirzapur) In village on bank of the river.</p> <p>λ 25 6 8 L 82 53 14 No. 106</p>	<p>Thiari House, (Mirzapur) Highest, in village.</p> <p>λ 25 3 35·6 L 83 21 31·7 No. 83</p>

March 1879.

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

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

ia T. S.
III

i T. S.
VI

a. No 2
by No. 21 }
S. J. S. } GORAKHPUR
& Sazpur t.
CIV

Bajaur	Hill Mark.	Dhaurára	Siwála.	Ghazipur	Monument.
Barhaj	Temple	Gadápahári	Building.	Do.	Temple No. 1.
Barhalganj	Temple No. 1.	Ganges River	No. 2 s.	Do.	do. No. 2.
Do.	do. No. 2.	Do.	No. 3 s.	Do.	do. No. 3.
Do.	do. No. 3.	Do.	No. 4 s.	Do.	do. No. 4.
Do.	do. No. 4.	Do.	No. 5 s.	Do.	do. No. 5.
Do.	do. No. 5.	Do.	No. 6 s.	Do.	do. No. 6.
Do.	do. No. 6.	Do.	No. 8 s.	Gogra River	No. 78. s.
Benares, Bisheshwar	Temple.	Do.	No. 11 s.	Gorakhpur	Mosque.
Do.	Mán Mandir.	Do.	No. 13 s.	Do.	Temple.
Do.	Masjid.	Do.	No. 14 s.	Gosáindáspur	do.
Do.	Siwála Ghat.	Do.	No. 16 s.	Katesar	do.
Do.	Tulsi Dás's Ghat.	Do.	No. 17 s.	Kathaut	Indigo Factory.
Do.	Turret.	Do.	No. 18 s.	Kurtha	Temple.
Bhaurai	Building.	Do.	No. 20 s.	Kusáhi	do.
Bhoili	Mosque.	Do.	No. 21 s.	Milkipur	do.
Bisheshwarpur	Factory.	Do.	No. 22 s.	Murádeo	Building.
Chainpur	Indigo Factory.	Do.	No. 23 s.	Do.	Temple.
Do.	Mausoleum.	Do.	No. 24 s.	Narharpur	Rája's House.
Chakia	Bungalow.	Do.	No. 27 s.	Patita	Fort.
Do.	Hill.	Do.	No. 28 s.	Ramna	House.
Do.	Siwála.	Do.	No. 30 s.	Rámnagar	Fort.
Chikda	Temple.	Do.	No. 31 s.	Do.	House.
Chunar	Monument.	Do.	No. 34 s.	Do.	Staircase.
Do.	Semaphore.	Do.	No. 35 s.	Do.	Temple.
Do.	Temple.	Do.	No. 39 s.	Sarasapur	House.

27
0



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

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

An Account of the Measurement of two Sections of the Meridional Arc of India, bounded by the parallels of $18^{\circ} 3' 5''$; $24^{\circ} 7' 11''$; and $29^{\circ} 30' 18''$. By Lieutenant-Colonel Everest, F.R.S., &c., late Surveyor General of India, and his Assistants. London, 1847.

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

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

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

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

- Volume VII. General Description of the Principal Triangulation of the North-East Quadrilateral including the Simultaneous Reduction and the Details of Five of the Component Series, the North-East Longitudinal, the Budhon Meridional, the Rangír Meridional, the Amua Meridional, and the Karára Meridional. Prepared under the directions of Lieutenant-General J. T. Walker, C.B., R.E., F.R.S., &c., &c., Surveyor General of India and Superintendent of the Trigonometrical Survey. Dehra Dún, 1882.
- Do. VIII. Details of the Principal Triangulation of Eleven of the Component Series of the North-East Quadrilateral, including the following Series; the Gurwáni Meridional, the Gora Meridional, the Huríláong Meridional, the Chendwár Meridional, the North Párasnáth Meridional, the North Malúncha Meridional, the Calcutta Meridional, the East Calcutta Longitudinal, the Brahmaputra Meridional, the Eastern Frontier—Section 23° to 26°, and the Assam Longitudinal. Prepared under the directions of Lieut.-General J. T. Walker, C.B., R.E., F.R.S., &c., &c., Surveyor General of India and Superintendent of the Trigonometrical Survey. Dehra Dún, 1882.
- Do. IX. Electro-Telegraphic Longitude Operations executed during the years 1875-77 and 1880-81, by Lieut.-Colonel W. M. Campbell, R.E., and Major W. J. Heaviside, R.E. Prepared under the directions of Lieut.-General J. T. Walker, C.B., R.E., F.R.S., Surveyor General of India and Superintendent of the Trigonometrical Survey. Dehra Dún, 1883.

Synopses of the Results of the Great Trigonometrical Survey of India, comprising Descriptions, Co-ordinates, &c., of the Principal and Secondary Stations and other Fixed Points, of the Several Series of Triangles, as follows;—

- Volume I. The Great Indus Series, or Series *D* 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, 1874.
- Do. II. The Great Arc—Section 24° to 30°, or Series *A* 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, 1874.
- Do. III. The Karáchi Longitudinal Series, or Series *B* 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, 1874.
- Do. IV. The Gurhágárh Meridional Series, or Series *F* 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, 1875.
- Do. V. The Rahún Meridional Series, or Series *E* 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, 1875.
- Do. VI. The Jogí-Tíla Meridional Series, or Series *G*, and the Sutilej Series, or Series *H* 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, 1875.
- Do. VII. The North-West Himalaya Series, or Series *C* of the North-West Quadrilateral, and the Triangulation of the Kashmir Survey. By Major-General 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.

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

Synopses of the Results of the G. T. Survey of India, &c.—(Continued).

- Volume VIII. The Great Arc—Section 18° to 24° , or Series *A* of the South-East Quadrilateral. By Colonel J. T. Walker, C.B., R.E., F.R.S., &c., &c., Superintendent of the Survey, and his Assistants. Dehra Dún, 1878.
- Do. IX. The Jabalpur Meridional Series, or Series *E* of the South-East Quadrilateral. 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, 1878.
- Do. X. The Bider Longitudinal Series, or Series *D* of the South-East Quadrilateral. By Major-General 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, 1880.
- Do. XI. The Biláspur Meridional Series, or Series *F* of the South-East Quadrilateral. By Major-General 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, 1880.
- Do. XII. The Calcutta Longitudinal Series, or Series *B* of the South-East Quadrilateral. By Major-General 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, 1880.
- Do. XIII. The East Coast Series, or Series *C* of the South-East Quadrilateral. By Major-General 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, 1880.
- Do. XIV. The Budhon Meridional Series, or Series *J* of the North-East Quadrilateral. By Lieutenant-General 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, 1883.
- Do. XV. The Rangír Meridional Series, or Series *K* of the North-East Quadrilateral. By Lieutenant-General 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, 1883.
- Do. XVI. The Amúa Meridional Series, or Series *L*, and the Karára Meridional Series, or Series *M* of the North-East Quadrilateral. By Lieutenant-General 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, 1883.

June, 1883.



