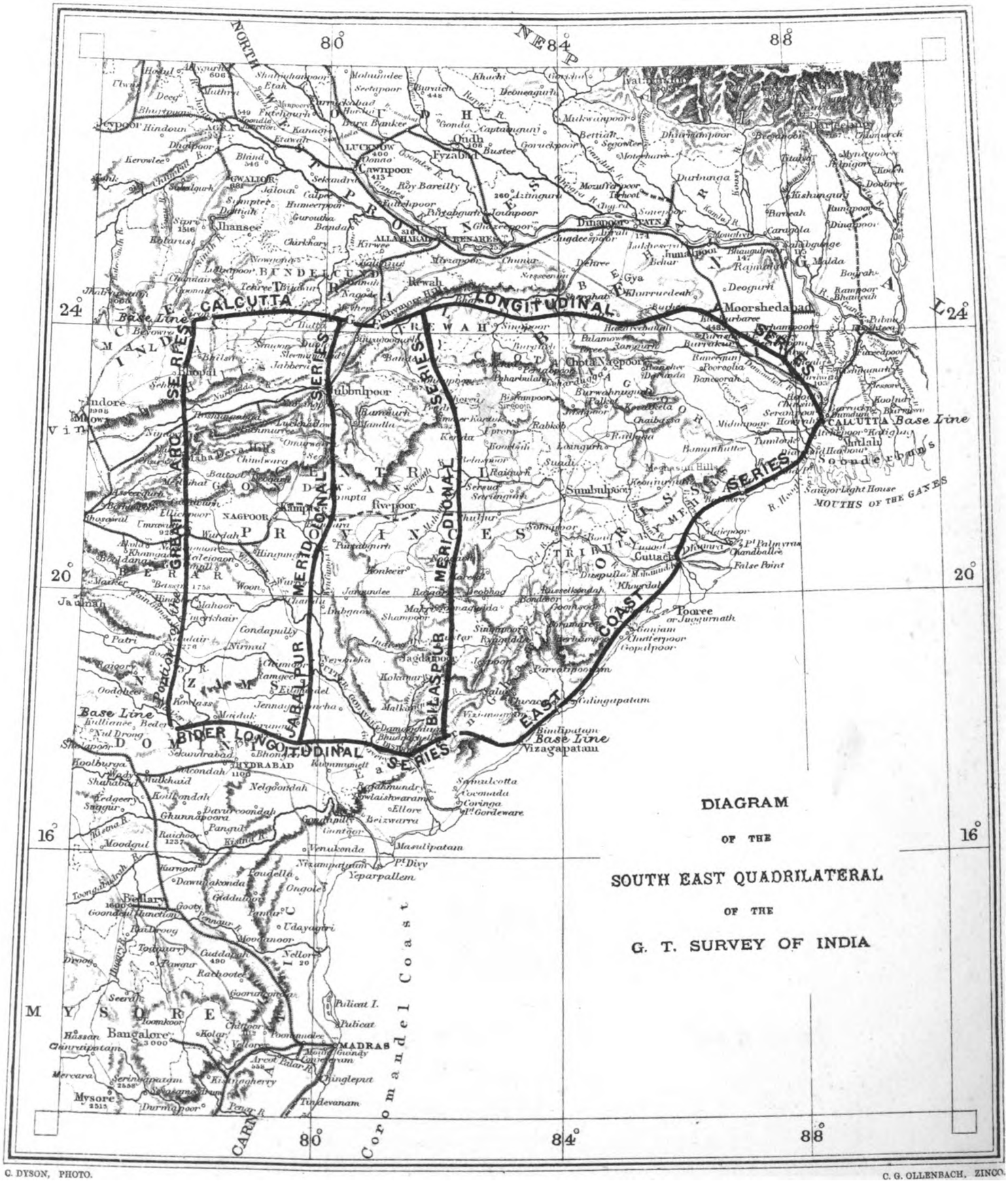
GREAT TRIGONOMETRICAL SURVEY OF INDIA



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SYNOPSIS OF THE RESULTS OF THE OPERATIONS OF

THE GREAT TRIGONOMETRICAL SURVEY OF INDIA

VOLUME IX.

DESCRIPTIONS AND CO-ORDINATES

OF THE

PRINCIPAL AND SECONDARY STATIONS AND OTHER FIXED POINTS OF

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.

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M. J. O'CONNOR.

1878.

CONTENTS.

ERRATA ET ADDENDA.

PAGE	
17—$_E$.	in triangle No. 74, 1st line *for* 5·242474 174773 33·101 *read* 4·242474 17477 3·310
33—$_E$.	Since this Volume was passed through the press, it has been discovered that the Principal station of Burgpailí, XLI, occupies the same poistion as Kistnápett Hill Mark, a point fixed by Colonel Lambton's Triangulation, from which its position, as given, was determined.
34—$_E$.	Since this Volume was passed through the press, it has been discovered that Mahárájpur Temple and Mandla Temple are identical.
36—$_E$.	3rd column, 10th line from top *for* λ 23° 18′ 33″·33 *read* λ 23° 19′· 33″·33

REFERENCES.

The Principal Stations of this Survey consist of a solid circular masonry pillar from 3 to 4 feet in diameter for the large theodolites to rest on, surrounded by a platform generally about 20 feet square on which the observatory tent was pitched.

The abbreviations employed in the text are as follows:—

h.s. denotes hill station (secondary)
s. „ station „

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

The name in italics in the alphabetical list commencing on page 29—$_E$, is that of the district in which the point is situated.

The latitudes and longitudes of all points shown on the chart at the end of this volume will be found in the text. Where continuous lines are drawn connecting them the distances and reciprocal azimuths will also be found; where no such lines exist these elements are not given. In cases where half the line is dotted, it is to be understood that the point at the extremity of the dotted half was observed to, but that reciprocal observations were not taken. When no observations at all have been taken from a point, the azimuths of the surrounding points are not given.

The height above mean sea level determined Trigonometrically and indicated by the symbol H, in the Co-ordinate List commencing on page 29—$_E$, always refers to the upper mark-stone or to the upper surface of the circular pillar marking the station.

November 1878.

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

PREFACE.

The Triangulation, of the results of which the present volume is a Synopsis, is one of the interior chains of that portion of the Principal Triangulation of the Survey of India which is known as the South-East Quadrilateral, and embraces the area included between the Meridian of 78° on the west, the Coast line on the east and the Parallels of 18° and 24° on the south and north. With the exception of a comparatively short chain of triangles along the meridian of Sambalpur, 84°, the whole of the principal triangulation of this Quadrilateral was completed by the year 1873: the base-lines at its four corners, namely Sironj, Bider, Calcutta and Vizagapatam, on which the linear elements are dependent, had been completed several years previously. As it was known that many years would elapse before the remaining chain of triangles could be undertaken, and as the base-lines and the four external, and all the most important internal chains had been finished, the final reduction of this figure was commenced, without further delay, on the completion of that of the North-West Quadrilateral. The Sambalpur Meridional Series when triangulated, and the South Parasnath and South Maluncha Meridional Series—which have been excluded from this reduction on account of their having been executed with inferior instruments in the early days of the Survey—will afterwards be made consistent with the rest of the triangulation. The general principles of the reduction, and the procedure followed in carrying it out, will be explained in Volume II of the *Account of the Operations, &c.*, which is now in the press, and full details of the whole of the principal triangulation at present included in the Quadrilateral, will be found in a Volume, to be published hereafter, which will probably be Volume VI of the *Account of the Operations, &c.*

As however the entire contents of the volumes of the principal triangulation will not be needed by geographers and surveyors, and moreover as they 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 manner as to be most suitable for convenience of reference; and this has already been done for the series forming the North-West Quadrilateral, as follows:—

I. Great Indus Series.
II. Great Arc, Section 24° to 30°.
III. Karáchi Longitudinal Series.
IV. Gurhágarh Meridional Series.
V. Rahún Meridional Series.
VI. Jogí-Tíla and Sutlej Series.

} already published.

VII. North-West Himalaya Series, nearly ready for publication.

and for the Great Arc, Section 18° to 24°, which is Volume VIII of the Series.

The present is the 9th Synoptical Volume, and it gives the results of the whole of the triangulation, both principal, which was executed with a great theodolite having an azimuthal circle 36 inches in diameter, read by 5 micrometer microscopes,—and secondary, which was executed chiefly with smaller theodolites, having circles of 7 to 14 inches in diameter, 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 South-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 Introduction and the Names and Descriptions of the Principal Stations, were originally prepared for Volume VI 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 Names and Descriptions of the Principal Stations, pages $1_{-E.}$ to $9_{-E.}$, were printed first of all; this was done in the year 1874, after a general programme had been drawn up for the reduction of the South-East Quadrilateral: there was then a long pause in the printing, while the reduction of the principal triangulation was being completed. Finally the secondary triangulation had to be adjusted in accordance with the principal, and then the printing of this volume was resumed.

The data given in this volume are the following:—

First (page $1_{-E.}$), an alphabetical list 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 (page $2_{-E.}$), a numerical list giving the names corresponding to the numbers.

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

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

Fifth (page $16_{-E.}$), 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 (page $23_{-E.}$), the azimuths of surrounding stations and points, at principal, principal-auxiliary† and secondary stations, the latter arranged in alphabetical order.

Seventh (page $29_{-E.}$), the co-ordinates and descriptions of all stations and points arranged in alphabetical order.

The heights depend on those of Kalúmar and Lora, of the Calcutta Longitudinal Series, on the north, and of Rámgír and Partábgirí, of the Bider Longitudinal Series on the south. The former have been determined differentially between those of two stations at the western extremity of the Calcutta Longitudinal Series, near the Sironj Base-line, *viz.*, Kámkhera 1,780·1 feet and Bhaorása 1,387·3 feet, which values rest on the line of Spirit Levels carried from the mean sea level at Karáchi to Sironj, and are given at pages 134 and 135 of the *Tables of Heights in Sind, the Punjab, &c.*, Calcutta 1863, and the height of Sonákúr, of the Calcutta Longitudinal Series, 124·6 feet as determined by leveling with a 12-inch theodolite from the 63rd milestone from Calcutta on the Grand Trunk Road; this milestone being one of the points fixed in the line of Spirit Levels carried from Karáchi to Calcutta. Its height will be found on page 51 of the *Tables of Heights in the N. W. Provinces and Bengal*, Roorkee 1865.

The heights of Rámgír and Partábgirí, were obtained differentially between the West End of the Bider Base-line and the South End of the Vizagapatam Base-line.

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† NOTE.—By a principal-auxiliary station is meant a station auxiliary to a principal station at which observations were taken to fix unvisited points.

The mean height of the West End of the Bider Base-line, at the southern extremity of the Series, was deduced as follows,

(1).	From Sironj, in terms of Karáchi sea level, through the Great Arc, ...	1976·3 feet
(2).	From Ditto ditto through the Calcutta Longitudinal, the Jabalpur Meridional and the Bider Longitudinal, ...	1983·7 „
(3).	From the mean sea level at Vizagapatam, through the Madras Coast and Meridional Series and the Bider Longitudinal, ...	1971·4 „
(4).	From the mean sea level at Bombay, through the Bombay Longitudinal Series, ...	1989·5 „
	Mean ...	1980·2 „

The South End of the Vizagapatam Base-line was connected in 1863, by a single line of Spirit Levels with the mean sea level at Vizagapatam and was found to be 310·6 feet above this datum.

All the heights of the Jabalpur Meridional Series were determined differentially, by the method of reciprocal vertical angles, back and forward observations being taken at each of the principal stations, at the time of minimum refraction. The error generated in the triangulation by computing from the northern to the southern extremity, and which has now been dispersed, was 8·9 feet.

It has not been considered necessary to publish the whole of the details of the secondary triangulation. The sides and angles of 149 triangles, which were selected as most likely to be of general 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, which was deduced, about the year 1815, as 80° 17′ 21″. 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 it, and therefore it has been maintained up to the present time. A determination of the longitude of Madras electro-telegraphically from Greenwich, which was commenced by that of the difference between Suez and Greenwich in 1874, under the superintendence of the Astronomer Royal, was completed in 1877 by the determination of the difference between Suez and Madras, by Captains Campbell and Heaviside, as a part of the operations of this Survey. The combined result places the Observatory at Madras in Long. $5^h\ 20^m\ 59^s{\cdot}42 = 80°\ 14'\ 51''{\cdot}30$. Thus the following precept will probably be found sufficiently exact for preliminary requirements,—

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. In the early portion, consisting of Alphabetical and Numerical lists and Descriptions of Principal Stations, printed in 1874, the orthography of the Central Provinces Gazetteer was chiefly followed for such names as occur therein and all other names were spelt in keeping with the system adopted in it. Then there was a pause of about two and a half years in the printing, during which several of the provincial lists of spellings, constructed under the orders of the Government of India, were received. In the remainder of the volume such of the names as are given in these lists (excepting those of the principal stations which are spelt in the way in which they had been previously printed) were adopted; for the names of places not in the lists and consequently not so well known, the rule was adopted of accenting all vowels, whether initial or terminal wherever necessary. This has caused some diversities of spelling, as in the terminals *pur* and *gaon* which are printed both with and without their vowels *u* and *a* accented. It is however obvious that, notwithstanding such departures from a standard spelling, all the names should be recognizable. As a general rule the pronunciations of the vowels are as follow:—*a* has a variable sound as in woman, rural, paltry; *á* as in tartan; *i* as in hit; *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 Chart accompanying this volume shows the whole of the principal stations and triangulation, the positions of all the secondary points and the portions of the secondary triangulations of which full details of the angles, sides and azimuths are given. With the aid of this Chart it is hoped that little difficulty will be met with in finding out any of the data contained in the volume 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 this, whenever it was practicable to do so, in order to facilitate the future identification of the stations, and all the information which is at present forthcoming in this office has 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, R.E., F.R.S., and Mr. Cole, M. A. Mr. Cole moreover supervised the Simultaneous Reduction of the South-East Quadrilateral of which this series forms a portion and he also wrote the Introduction to this volume. Great pains have been taken to secure the utmost accuracy in preparing the data and passing them through the press.

MUSSOOREE,
June 1878.

J. T. WALKER, COLONEL, R.E.,
Surveyor General and Superintendent of the Great Trigonometrical Survey of India.

JABALPUR MERIDIONAL SERIES.

JABALPUR (*Jubbulpore*) MERIDIONAL SERIES.

INTRODUCTION.

In October 1863, the Party of the Trigonometrical Survey which had recently completed the Sutlej Series, was directed to undertake a Meridional Series emanating from a side of the Calcutta Longitudinal Series near Jubbulpore, and to carry it south along the meridian of 80°, to the parallel of 17°, to connect with the series on the same meridian which was being executed by the East Coast Series Party, the whole to form a meridional arc extending from Jubbulpore to Madras.

At this time the triangulation which connected Calcutta with Sironj had not been revised. It was executed in the infancy of the Trigonometrical Survey, and from several causes it was not of a class on which an important meridional series could be made to depend. It became necessary therefore, as a preliminary to starting the Jabalpur Meridional Series, to revise that portion of the Calcutta Longitudinal Series which lay between Sironj and the meridian of 80°; and Mr. Shelverton, who was the Officer in charge of the operations, was directed to perform that duty first, while one or more of his assistants were engaged in laying out the triangulation of the Jabalpur Series. Although the triangulation, as originally designed, formed a continuous meridional series from lat. 23° 30′ to Madras, only that portion of it to the north of 18° 30′ is now denominated the Jabalpur Series. The double polygon next to the south at present forms part of the Bider Longitudinal Series, and to the south of that again the series takes the name of the Madras Meridional Series. The side of origin of the Jabalpur Series as it now stands is Kalúmar to Lora of the Calcutta Longitudinal Series, and the terminus Rámgír to Partábgirí of the Bider Longitudinal Series. The series, therefore, with the exception of a few stations which fall in the Hyderabad States, lies principally in the Central Provinces, and the places of note of which the positions have been determined by it are, Jubbulpore, Narsinghpur, Mandla, Seoni, Chhindwára and Sironcha.

Season 1863-64.

PERSONNEL.

G. H. W. Shelverton, Esq., Civil Assistant.
Mr. A. W. Donnelly, Civil 2nd Assistant.
„ M. C. Hickie, Senior Sub-Assistant.
„ F. A. Bell, 1st Class „
„ L. J. Pocock, 2nd Class „

The first season was occupied by Mr. Shelverton, assisted by Messrs. Hickie and Pocock, in revising the Calcutta Longitudinal Series in accordance with the directions he had received, as already stated. In the meantime Messrs. Donnelly and Bell proceeded with the selection of stations for the Jabalpur Series and the preliminary work connected with it. Their progress was small owing to the difficult nature of the country, which to the south of the Nerbudda river, runs into a succession of elevated table-lands, densely covered with forest, and which greatly limited the view. As they became better acquainted with the country they were able to take advantage of slight depressions in the table-lands; and after rejecting the first cast of the series, which commenced with four unfavourable quadrilaterals, they succeeded in selecting two hexagons with the exception of one station.

The Party reached their ground next season by the end of November and Mr. Donnelly was at once detached to continue the selection of stations; and he made such satisfactory progress that he extended the approximate series as far south as lat. 20° 30′, although the task was a very difficult one. The tract through which he worked consisted, as before, of a succession of densely wooded plateaux, presenting no easily recognisable features. The unhealthiness of the country too brought on an attack of fever complicated with other ailments, which compelled him to close work before the end of the season and seek medical aid at Jubbulpore. Indeed the unhealthiness of the forest tract through which the series passed was so great, that before taking the field again, Mr. Shelverton thought it his duty to apply for the services of a Native Sub-Assistant Surgeon, in place of the so called Native Doctor who usually ministers to the common ailments of a field party, but whose medical knowledge is generally of a very limited nature. He says that during the past field season malarious and remittent fevers, diarrhœa, dysentery and cutaneous eruptions prevailed to such an extent, that he experienced considerable apprehension for the safety of the party in the jungle tracts further south. The men detached with Mr. Donnelly, picked and hardy men though they were, looked at the end of the season like perfect wrecks. Mr. Hickie throughout the field season had to provide carriage for one half of his men, and Mr. Bell at one time, had only two men in his camp that were fit for work at all. Mr. Shelverton's own establishment had on an average 20 per cent of sick.

Season 1864-65.

PERSONNEL.

G. H. W. Shelverton, Esq., Civil Assistant.
Mr. A. W. Donnelly, Civil 2nd Assistant.
„ M. C. Hickie, „
„ F. A. Bell, Sub-Assistant 1st Class.
„ L. J. Pocock, „ 2nd „

But to return to the work of the season. Mr. Shelverton, after inspecting the stations selected during the field season of 1863-64, commenced final observations on the 15th December, and by the 30th of the following April had observed at 21 principal stations forming a pentagon—appertaining to the Calcutta Longitudinal Series—and three hexagons, extending a distance of 150 miles and covering an area of 5167 square miles. He also observed azimuths to circumpolar stars at two of the stations.

Secondary triangulation was executed by Messrs. Hickie and Bell, by the former on the western flank of the principal series, covering an area of one thousand square miles; and by the latter a minor series was carried southwards along the parallel of 79° 15′ and embraced an area of 2600 square miles: he also connected stations of the Jubbulpore Revenue Survey with the principal series.

Before proceeding to the field again Mr. Shelverton availed himself of the opportunity of determining trigonometrically positions of some of the principal buildings in Jubbulpore, such as the School of Industry, the Jail, Cutcherry, &c.

The Party left recess quarters in November and recommenced operations on the side Sirrájhari to Kharikona, the closing stations of the preceding season's work. It was unfortunately deprived of the services of Mr. Donnelly, his health having been so seriously affected by the malarious country he had worked in, that it became necessary to transfer him to a less unhealthy tract of country: although the party was considerably weakened by this loss and again suffered a great deal from sickness, a very fair out-turn of work was produced. The principal series was advanced 100 miles, by two hexagons and two quadrilaterals embracing an area of 2,566 square miles. The preliminary operations were carried a further distance of 50 miles and would have progressed further still but for the hazy weather which set in. Secondary triangulation, 85 miles in length and covering an area of 1,046 square miles, was executed by Messrs. Hickie and Bell in addition

Season 1865-66.

PERSONNEL.

G. H. W. Shelverton, Esq., Civil Assistant.
Mr. M. C. Hickie, Civil 2nd Assistant.
„ F. A. Bell, Senior Sub-Assistant.
„ L. J. Pocock, Sub-Assistant 2nd Class.
„ E. P. Wrixon, Probationer.

to the other duties they performed—such as selecting and building stations, cutting roads and reconnoitring—by which the positions and heights of Chhindwára and Seoni were determined and also of the Civil Station of Bhandára. Mr. Bell also connected with the main series the side Balâhí to Haldolí of Mr. Mulheran's Nágpur triangulation, the execution of which is referred to in the Introduction to the Great Arc Meridional Series, Section 18° to 24°: a portion of the triangulation has been annexed to this series.

Owing to the unhealthiness of portions of the districts through which the triangulation passed, it had been necessary to attach a second Native Doctor to the Party and to proceed with much caution. But notwithstanding this Mr. Shelverton experienced so severe an attack of fever on returning to recess quarters, that for some time his life was despaired of.

Season 1866-67.

PERSONNEL.

G. H. W. Shelverton, Esqr., Assistant Surveyor.
Mr. M. C. Hickie, Civil Assistant 4th Grade.
„ F. A. Bell, Sub-Assistant 1st Grade.
„ L. J. Pocock, „ 2nd „
„ E. P. Wrixon, Probationer.

The season's operations commenced on the 8th December with observations for azimuth on the stars δ Ursæ Minoris and 51 Cephei at the station of Bhimsain. From there the Head Quarters' camp proceeded to Parasgaon, and the observation of principal angles was begun on the 15th of the same month.

The triangulation was advanced a direct distance of 132 miles to the stations Rámgír and Partábgirí, the terminal stations of the series as it now stands. The area embraced by it amounted to 5,500 square miles, and it covered more than half of the Chánda district, some part of the Ahíri Jaghír and Sironcha Tálúka and nearly the whole of the Chinúr pargana in Hyderabad.

The country through which the party worked is notoriously the most unhealthy portion of the Wainganga valley: fortunately they entered it after a sudden and severe visitation of cholera and typhus fever had disappeared. Mr. Shelverton says "traces of these fell diseases "were visible in every stream, where their victims had been hastily interred in the sand and "covered over with brambles, cremation having been apparently abandoned as the mortality "increased. At the village of Pinchkalpet my encamping ground was strewed with charred "human bones".

The camp did not however, suffer seriously this season though a good many were attacked by fever and dysentery, no deaths occurring, and the sick among the native establishment soon recovering. Messrs. Hickie and Bell were not so fortunate, and both of them were obliged to seek medical aid at Sironcha. The other assistants also suffered from fever but to a less degree.

Had the party commenced work earlier than they did it is probable that they would have suffered severely; for from the middle of September to the close of November fever of a malarious type prevails all over the Chánda district, few escaping an attack. The night air seems to be peculiarly noxious at this time of year, and exposure to it is to be carefully avoided. But surveyors are unable to take this precaution at all times, and two of Mr. Shelverton's assistants, Messrs. Pocock and Wrixon, frequently had to pass the night under trees, because of the difficulty of getting their camp equipage to the end of the marches in time. Pack buffaloes were the only carriage they could obtain, and these animals became thoroughly knocked up as soon as the weather grew warm.

Mr. Hickie was employed as before in extending the approximate series and carried it to its junction with the Madras Meridional Series, in lat. 16° 25′, although for a time a severe attack of malarious fever incapacitated him for work. The direct distance laid out by him was 245 miles. Mr. Bell was chiefly employed in building stations and in assisting Mr. Hickie.

No secondary work was attempted this season as the country had been extensively triangulated by the party of the Hyderabad Topographical Survey. The connexion with this triangulation is afforded by the triangle Sonda, Ankora, Rauta and the side Ankora—Jhilera which is common to both Surveys. Heights above sea level are also tested at these stations.

Mr. Shelverton in the course of his operations came upon a very formidable fort near his station of Rámgír, in the Jágír of Fakírán Múlk a son-in-law of Nawáb Salár Jung of Hyderabad, which is situated on a precipitously scarped sandstone range. He describes it as follows:—

"It is approached from the east by a broad zigzag path, very strongly paved, and in "some places literally hewn out of the hill side, being commanded through its entire length "by strong natural defences, inaccessible to an attacking party, but from which a most mur- "derous fire could be kept up with little risk to the defenders. The wall which is of astound- "ing thickness and great height with bastions judiciously disposed, forms on the hill top an "enclosure of about three or four miles in circumference; this is divided into six strong- "holds which communicate with each other by massive gateways and are themselves perfect "little forts. The walls are faced with hewn stones of immense size, quarried from the hill; "some of the blocks used are seven feet in length, six inches in width and four feet in depth; "the space between the two faces being filled up with rubble. Though the tanks have been "very much neglected, there is no scarcity of water; but, with proper arrangements, these "reservoirs, all of which are within the fort, could be made to hold an inexhaustible supply "for a large garrison. There are said to be sixty guns in position; I, however saw very few. "One that I measured was 12 feet long, with a bore of 9 inches; they are made of longitudi- "nal strips of iron four inches wide, welded together, and coils shrunk on them. Since the "occupation of the country by the Mahomadans, the top of the wall has been disfigured with "little minarets and cupolas, a summer house built, and some additions made, which look "quite contemptible alongside of the mighty conceptions by which they are surrounded. The "tombs on the hill top would indicate that at no distant time the place was occupied in great "force by Mahomadans, but there is nothing now to shew that it is considered of any im- "portance. On the walls there are well executed bas-reliefs of antediluvian animals; a double "headed eagle grasping monsters in its talons is conspicuous over every gateway. There is "an Arabic inscription over the principal entrance but I was not able to understand it. With "the exception of one breach, the outer wall is in excellent preservation. I could not get any "reliable information about the origin of such a remarkable place. Tradition says it was "built by Pratáb Rúdra, who received supernatural help, that his laborers were daily paid "with stones which were soon converted into bread; but the original story doubtless was that "the work people starved."

The triangulation was continued along the same meridian during the following season; but it no longer retains the name of the Jabalpur Series. The double polygon next to the south now forms part of the Bider Longitudinal Series and the remaining triangulation on the same meridian is denominated the Madras Meridional Series.

The total meridional length of the Jabalpur Series is 335 miles. The closing linear error by the triangulation carried through this series from the Sironj Base-line to the Bider Base-line was 0·8 inches per mile; and the discrepancies in latitude, longitude and azimuth at the station of Pánch Pandol of the Bider Longitudinal Series, as derived from Kaliánpur *viâ* the Great Arc and *viâ* the Jabalpur Series, were respectively 0″·050 (= 5 feet), 0″·214 (= 21 feet) and 0″·212. All these discrepancies have now been eliminated by the final reduction of the triangulation comprised in the South-East Quadrilateral.

In the year 1868, Jubbulpore being still Mr. Shelverton's recess quarters, he employed the interval, which elapsed between the termination of the rainy season, and the time when the unhealthy forest tracts in which his work lay might be safely entered, in taking a series of observations for determining the Astronomical Latitude of the trigonometrical station of Karaundí in the vicinity of Jubbulpore, with the 18-inch vertical circle of Troughton and Simms' 36-inch Theodolite. The days on which observations were taken were the 13th, 14th, 15th, 16th, 17th and 23rd October, cloudy weather having intervened between the last two dates and prevented work. The results were 264 independent deductions of latitude obtained from 11 pairs of north and south stars, 12 circum-meridional observations having been made to each star. The mean latitude thus obtained was 23° 10′ 45″·12: the final value furnished by the triangulation, as given in this volume, will be seen to be 23° 10′ 40″·02, shewing that there is about 5″ of southerly attraction at Karaundí as compared with Kalianpur, the origin of geodetic co-ordinates for the Indian Survey.

W. H. COLE, M. A.

Dehra, December 1877.

JABALPUR MERIDIONAL SERIES.

JABALPUR MERIDIONAL SERIES.

XII	Kalúmar. (Of the Calcutta Longitudinal Series).
XVI	Lora. (Of the Calcutta Longitudinal Series).
I	Karaundí.
II	Sásan-kí-Toria.
III	Kalangargar.
IV	Lapeta.
V	Ballár.
VI	Kúsam Bara.
VII	Múnda.
VIII	Kotálí.
IX	Tálla.
X	Banorí.
XI	Sarandí Pat.
XII	Kariápahár.
XIII	Dhúkrí.
XIV	Sirrájharí.
XV	Kharíkona.
XVI	Lingmára.
XVII	Bhajiadand.
XVIII	Líla.
XIX	Khara.
XX	Sítápár.
XXI	Jámrí.
XXII	Chakálípát.
XXIII	Nisáni.
XXIV	Úpáskata.
XXV	Dhás.
XXVI	Bhímsain.
XXVII	Partábgarh.
XXVIII	Sáthbainí.
XXIX	Parasgáon.
XXX	Rájulí.
XXXI	Ámbágarh.
XXXII	Theka.
XXXIII	Díwai.
XXXIV	Ghot.
XXXV	Ankora.
XXXVI	Sonda.
XXXVII	Polám Rajúl.
XXXVIII	Rauta.
XXXIX	Jhilera.
XL	Rechní.
XLI	Burgpailí.
XLII	Timápúram.
XLIII	Sirkonda.
XIV	Rámgír. (Of the Bider Longitudinal Series).
XVI	Partábgirí. (Of the Bider Longitudinal Series).

PRINCIPAL TRIANGULATION—DESCRIPTION OF STATIONS.

JABALPUR MERIDIONAL SERIES.

XII. Kalúmar Hill Station (Hatiápahár), lat. 23° 28′, long. 79° 47′—observed at in 1827, 1864 and 1865—is situated in the lands of the little village of Kalúmar, on the most elevated part of a high range of hills; thánah Katanghí, tahsíl and district Jabalpúr. A Revenue Survey platform, marking the junction of the boundaries of the villages of Thála, Chauri, Kalúmar and Mengwa, adjoins the station.

The pillar is solid and contains two marks, the upper 3·17 feet above the lower. The station of 1827, when visited in 1864, had been destroyed; the remains of a platform were found but no markstones: the new station cannot therefore be considered as identical with the old. The village of Kalúmar lies about 2 miles N. by W., that of Jalherí from which the station is approached about 3 miles S. W. and the large village of Katanghí about 4 miles S. E.

XVI. Lora Hill Station, lat. 23° 30′, long. 80° 12′—observed at in 1827, 1864 and 1865—is in the lands of the village of Hargarh, tahsíl Sihora, district Jabalpúr.

The pillar is solid and contains two marks, the upper 4 feet above the lower. The markstone of the station of 1827 was in 1864 found undisturbed and its position was adopted for the new station. The town of Sihora, on the Jabalpúr and Mírzápúr road, lies about 3 miles W., Hargarh village S. W., Mirhai N. and Darauli S. by E.

I. Karaundí Hill Station, lat. 23° 11,′ long. 80° 2′—observed at in 1865—is about 3 miles E. by N. of the civil station of Jabalpúr; thánah, tahsíl and district Jabalpúr.

The pillar is solid and contains two marks, the upper 3 feet above the lower which is at the ground level. The village of Karaundí lies about 1 mile N. E. of the hill.

II. Sásan-kí-Toria Hill Station, lat. 23° 12′, long. 79° 44′—observed at in 1865—is on a hillock about 0·33 of a mile N. by E. of the little village of Sásan; thánah Pátan, tahsíl and district Jabalpúr.

The pillar is solid and contains two marks, the upper about 3 feet above the lower. The village of Chandwa is about 0·75 of a mile N. W. and that of Daneta about 0·5 of a mile N.

III. Kalangargar Hill Station, lat. 23° 15′, long. 80° 18′—observed at in 1865—is on a plateau in the lands of the village of Taunrí; thánah Kúndam, tahsíl Sihora, district Jabalpúr. A pípal tree of remarkable size stands near the station.

The pillar is solid and contains three marks, the two upper being respectively about 4·5 and 9 feet above the lowest which is at the ground level. The village of Khamaría lies about 2 miles W. and that of Taunrí about 1·5 miles E.

IV. Lapeta Hill Station, lat. 23° 0′, long. 79° 53′—observed at in 1865—is on a conspicuous hill in the lands of the village of Ganjna and near the Jabalpúr and Nágpúr road; thánah and pargana Bargí, tahsíl and district Jabalpúr.

The pillar is solid and contains two marks, the upper 2·75 feet above the lower. The village of Bargí lies about 1·5 miles E. and that of Ganjna about 0·75 miles S.

V. Ballár Hill Station, lat. 22° 56′, long. 80° 13′—observed at in 1865—is on the Ballár plateau; thánah Náráyanganj, tahsíl and district Mandla. The Jabalpúr and Mandla road skirts the foot of the hill.

The pillar is solid and contains three marks, the two upper being respectively 6·67 and 10·92 feet above the lowest which is at the ground level. The village of Dhanwai is about 1 mile N.

VI. Kúsam Bara Hill Station, lat. 22° 41′, long. 80° 4′—observed at in 1865—is on the Kúsam Bara plateau; thánah Ghúmsúr, tahsíl Laknádaun, district Seoní.

The pillar is solid and contains two marks, the upper 3·00 feet above the lower which is at the ground level. The village of Banorí is about 1 mile W. by S. and that of Pahárí about 2 miles in the same direction.

VII. Múnda Hill Station, lat. 22° 38′, long. 79° 50′—observed at in 1865—is about 1 mile N. W. of the village of that name; thánah Kahání, tahsíl Laknádaun, district Seoní.

The pillar is solid and contains two marks, the upper 3·25 feet above the lower which is at the ground level.

VIII. Kotálí Hill Station, lat. 22° 49′, long. 80° 26′—observed at in 1865—is on the slope of the hill and about a mile east of the little village of Dobí; thánah Náráyanganj, tahsíl and district Mandla.

The pillar is solid and contains two marks, the upper 2·67 feet above the lower which is nearly flush with the ground level.

IX. Tálla Hill Station, lat. 22° 28′, long. 80° 0′—observed at in 1865—is on a conspicuous hill in the lands of the village of Pátan; thánah Keolárí, tahsíl Laknádaun, district Seoní.

The pillar is solid and contains two marks, the upper 3·08 feet above the lower which is nearly flush with the ground level. The village of Tálla lies about 1·5 miles N. E. and that of Pátan about 2 miles W.

X. Banorí Hill Station, lat. 22° 29′, long. 80° 19′—observed at in 1865—is about 1 mile N. E. of the village of Dongaria; thánah, tahsíl and district Mandla.

The pillar is solid and contains two marks, the upper 2·83 feet above the lower which is at the ground level. The civil station of Mandla is about 11 miles N. by E.

XI. Sarandí Pat Hill Station, lat. 22° 13′, long. 80° 6′—observed at in 1865—is on

the highest part of a hill surrounded on all sides by other hills, from which however it is isolated; thánah Gaur-Jhola, tahsíl and district Seoní.

The pillar is solid and contains two marks, the upper 2·25 feet above the lower which is engraved on the rock *in situ*. The village of Sarandí lies about 1 mile N. and that of Chiklí about the same distance N. E.

XII. Kariápahár Hill Station, lat. 22° 14′, long. 79° 42′—observed at in 1865—is on a conspicuous hill in the lands of the village of Singhorí; thánah, tahsíl and district Seoní.

The pillar is solid and contains two marks, the upper 1·75 feet above the lower which is engraved on the rock *in situ*. The village of Singhorí lies about 2 miles E. by N.

XIII. Dhúkrí Hill Station, lat. 22° 4′, long. 80° 29′—observed at in 1865—is about 2 miles S. W. of the village of Tikaría; thánah Bhair, tahsíl Indrí, district Seoní.

The pillar is solid and contains two marks, the upper 3·83 feet above the lower which is nearly flush with the ground level.

XIV. Sirrájharí Hill Station, lat. 21° 53′, long. 79° 59′—observed at in 1865—is about half a mile to the east of the little hamlet of Sirrájharí; thánah Karola, tahsíl Katanghí, district Seoní.

The pillar is solid and contains two marks, the upper 2·46 feet above the lower. The village of Sonáwaní lies about 6 miles N. W. and that of Katangjharí to the S. E.

XV. Kharíkona Hill Station, lat. 21° 58′, long. 80° 15′—observed at in 1865 and 1866—is in the lands of the village of Amgáon; thánah and tahsíl Kámpta, pargana Búra, district Bhandára.

The pillar is solid and contains two marks, the upper 2·98 feet above the lower which is nearly flush with the surface of the ground. The village of Amgáon lies about 4·5 miles S. W. and that of Dúglai about 4 miles W.

XVI. Lingmára (or Bálájí-ka-pahár) Hill Station, lat. 21° 43′, long. 80° 10′—observed at in 1866—is on the highest part of a low range of hills in the lands of the village of Mendkí; thánah Rámpaili, tahsíl Kámpta, district Bhandára.

The pillar is solid and contains two marks, the upper 3·92 feet above the lower. The village of Lingmára lies about 1·25 miles S. E. and that of Mendkí about 1·5 miles W. by S.

XVII. Bhajiadand (or Kalpat-Khodra) Hill Station, lat. 21° 40′, long. 79° 58′—observed at in 1865— is on a conspicuous hill about 1·5 miles S. W. of the village of Bhajiadand; thánah and tahsíl Kámpta, district Bhandára.

The pillar is solid and contains two marks, the upper 3·21 feet above the lower which is nearly flush with the ground level.

XVIII. Líla Hill Station, lat. 21° 48′, long. 80° 24′—observed at in 1866—is on the most elevated point of a high range of hills, about 5 miles E. by N. of the large town of Hata; thánah Hata, tahsíl Kámpta, district Bhandára. The approach to the hill is by the villages of Kúnda, Nawargáon and Kotia Tola, whence a good road leads to the table-land of Kasangí and from thence to the station; by this road the distance is about 19 miles from Hata. There is also a foot-path along the precipitous face of the hill to the village of Kúnda.

The pillar is solid and contains two marks, the upper 4·17 feet above the lower which is nearly flush with the ground level.

XIX. Khara Hill Station, lat. 21° 26′, long. 80° 8′—observed at in 1866—is on the highest point of a conspicuous hill about 1 mile S. W. of the little hamlet of Khara; thánah Tharora, tahsíl Kámpta, district Bhandára.

The pillar is solid and contains two marks, the upper 3·75 feet above the lower which is nearly flush with the ground level. The village of Chútia lies about 3 miles E.

XX. Sítápár (or Garhí Húrkí) Hill Station, lat. 21° 25′, long. 80° 22′—observed at in 1866—is on a hillock about half a mile E. by N. of the village of Chichárband; thánah and tahsíl Kámpta, district Bhandára.

The pillar is solid and contains two marks, the upper 2·71 feet above the lower which is flush with the ground level. The village of Sítápár is about 1·5 miles N.

XXI. Jámrí (or Ragba-ka-Dúngar) Hill Station, lat. 21° 12′, long. 80° 4′—observed at in 1866—is on a well defined peak at the southern end of a conspicuous range of hills; thánah and tahsíl Sákholí (Bálápúr), district Bhandára.

The pillar is solid and contains two marks, the upper 3·50 feet above the lower. The village of Jámrí lies about 2 miles E. by S.

XXII. Chakálípát Hill Station, lat. 21° 9′, long. 80° 22′—observed at in 1866—is on a conspicuous peak of a tolerably high range; thánah and tahsíl Kámpta, district Bhandára. The only practicable approach for laden cattle is from the village of Múla.

The pillar is solid and contains two marks, the upper 3·00 feet above the lower. The village of Múla lies about 3 miles E.

XXIII. Nisání Hill Station, lat. 20° 59′, long. 80° 14′—observed at in 1866—is on the highest part of a very conspicuous range of hills at the southern foot of which is a remarkable lake, known as Náwagáon Taláo, which covers an area of about 12 square miles; thánah Sángarí, tahsíl Bálápúr, district Bhandára.

The pillar is solid and contains two marks, the upper 6·17 feet above the lower which is flush with the ground level. The village of Kawalwára lies about 3 miles W.

XXIV. Úpáskata Hill Station, lat. 21° 0′, long. 80° 32′—observed at in 1866—is on the highest part of a conspicuous hill; thánah and tahsíl Nandgáon, district Ráipúr.

The pillar is solid and contains two marks, the upper 2·00 feet above the lower which is about 4 feet above the ground level. The little village of Pándarpání lies about 1·5 miles S. W.

XXV. Dhás Hill Station, lat. 20° 51′, long. 80° 24′—observed at in 1866—is situated on the highest part of a conspicuous hill; thánah Arjúní, tahsíl Sákholí (Bálápúr), district Bhandára.

The pillar is solid and contains two marks, the upper 4·00 feet above the lower which is nearly flush with the ground level. The village of Pípalkándí lies about two miles S.

XXVI. Bhímsain Hill Station, lat. 20° 58′, long. 79° 49′—observed at in 1866—is on the highest part of a conspicuous range and is in the lands of the village of Kotúrli; thánah

Pohoní, tahsíl Bálápúr, district Bhandára. The approach to the station is from the small village of Bándarjirí which lies near the eastern termination of the range.

The pillar is solid and contains two marks, the distance between which has not been measured; the height of the pillar is 6·67 feet. The village of Kotúrli lies about 3 miles S. W.

XXVII. Partábgarh Hill Station, lat. 20° 48′, long. 80° 8′—observed at in 1866—is on the highest part of a precipitous hill, somewhat higher than and about 0·5 of a mile W. of that on which the old fort of Partábgarh stands; thánah Arjúní, tahsíl Bálápúr, district Bhandára.

The pillar is solid and contains two marks, the upper 3·67 feet above the lower which is about 4 feet higher than the ground level. The village of Partábgarh lies about 2·5 miles E.

XXVIII. Sáthbainí Hill Station, lat. 20° 32′, long. 79° 37′—observed at in 1866—is on a sandstone range; thánah Tarúdí, tahsíl Barhampúrí, district Chánda.

The pillar is solid and contains two marks, the distance between which has not been measured; the height of the pillar is 3 feet. The village of Sárangarh lies about 2 miles S.

XXIX. Parasgáon Hill Station, lat. 20° 32′, long. 80° 4′—observed at in 1866—is on the highest part of an isolated hill; thánah Wairágarh, tahsíl Barhampúrí, district Chánda.

The pillar is solid and contains two marks, the upper 2·00 feet above the lower which is engraved on the rock *in sitû*. The village of Parasgáon lies about 1·5 miles S. E.

XXX. Rájulí (or Károba-ka-Dúngar) Hill Station, lat. 20° 13′, long. 79° 47′—observed at in 1866—is in the lands of the village of Balárpúr, on the highest part of a low range of hills; pargana Rájgarh, tahsíl Múl, district Chánda.

The pillar is solid and contains at least two marks, the distance between which has not been measured; the height of the pillar is 7·5 feet. The village of Balárpúr lies about 1·5 miles W.

XXXI. Ámbágarh Hill Station, lat. 20° 16′, long. 79° 22′—observed at in 1866—is so named from a village that once existed in its vicinity; pargana Bhándak, tahsíl Waroda, district Chánda.

The pillar is solid and contains at least two marks, the distance between which is not known; the pillar is 9 feet high. The village of Modolí lies about 3 miles W.

XXXII. Theka (Theka Metha or Theka Dúngar) Hill Station, lat. 20° 12′, long. 80° 19′—observed at in 1867—is in the lands of the villages of Dúdmára and Kútgáon, on a conspicuous hill; pargana Wairágarh, tahsíl Barhampúrí, district Chánda.

The pillar is solid and contains at least two marks, the distance between which is not known; the height of the pillar is 6 feet. The village of Kútgáon lies about 7 miles W.

XXXIII. Díwai Hill Station, lat. 19° 50′, long. 79° 35′—observed at in 1867—is in the lands of the village of Pomúrna; pargana Ghátkúl, tahsíl Múl, district Chánda.

The pillar is solid and contains at least two marks, the distance between which is not known; the height of the pillar is 5 feet. The village of Kauarjí lies about 4 miles W. by N.

XXXIV. Ghot (or Jámbí-ka-Dúngar) Hill Station, lat. 19° 47′, long. 80° 0′—observed at in 1867—is about 5 miles S. W. of the village of Ghot; pargana Ámbgáon, tahsíl Chamúrsí, jágír Ahírí, district Chánda.

The pillar is solid and contains at least two marks, the distance between which is not known; the height of the pillar is 7·5 feet.

XXXV. Ankora (or Rebálemba) Hill Station, lat. 19° 25′, long. 79° 39′—observed at in 1867—is on the highest part of a very conspicuous hill; pargana Sírpúr, tahsíl Chinúr in the territory of the Nizám of Haidarábád.

The pillar is solid and contains at least two marks, the distance between which is not known; the height of the pillar is 4 feet. The small village of Ankora lies at the foot of the hill about 2 miles W., and the town of Sírpúr about 5 miles N.

XXXVI. Sonda Hill Station, lat. 19° 37′, long. 79° 24′—observed at in 1867—is in the lands of the village of Sondoha; pargana Mánigarh, thánah Rájúr of the Haidarábád States. The station is identical with Sondo H.S. of the Haidarábád Topographical Survey.

The pillar is solid and contains at least two marks, the distance between which is not known; the height of the pillar is 4·5 feet and the upper mark is sunk 0·5 inch below its surface. The village of Sandoha lies about 3 miles N.

XXXVII. Polám Rajúl Hill Station, lat. 19° 30′, long. 80° 6′—observed at in 1867—is on a low hill but not on the highest point; pargana and jágír Ahírí, district Chánda.

The pillar is solid and contains at least two marks, the distance between which is not known; the height of the pillar is 3 feet. The village of Elgúr lies about 2 miles N.

XXXVIII. Rauta (or Rájalghúta) Hill Station, lat. 19° 16′, long. 79° 22′—observed at in 1867—is on a very conspicuous hill; thánah Jangáon, tahsíl Chinúr of the Haidarábád States. The station is identical with Raota H.S. of the Haidarábád Topographical Survey.

The pillar is solid and contains at least two marks, the distance between which is not known; the height of the pillar is 8 feet, and the upper mark is sunk 1 inch below its surface. The village of Idlára lies about 3 miles N.

XXXIX. Jhilera (or Múslama Ghúta) Hill Station, lat. 19° 15′, long. 79° 56′—observed at in 1867—is about 3 miles N.W. of the village of Jhilera; täalluka Ahírí, district Chánda.

The pillar is solid and contains at least two marks, the distance between which is not known; the height of the pillar is 5·83 feet, and the upper mark is sunk 0·2 inch below its surface.

XL. Rechní Hill Station, lat. 19° 10′, long. 79° 31′—observed at in 1867—is on a small hill at the northern extremity of which about 30 paces from the station is a rude temple partly hewn out of the solid rock which is dedicated to Malana Debi; pargana Sírpúr, thánah Tándúr of the Haidarábád States.

The pillar is solid and contains at least two marks, the distance between which is not known; the height of the pillar is 8·17 feet, and the upper mark is sunk 0·3 inch below its surface. The village of Rechní lies about 2 miles E.

XLI. Burgpailí (or Rájula Ghúta) Hill Station, lat. 18° 54′, long. 79° 44′—observed at in 1867—is about 2·5 miles E. of the village of Burgpailí; pargana and tahsíl Chinúr of the Haidarábád States.

The pillar is solid and contains at least two marks, the distance between which is not known; the height of the pillar is 4·5 feet.

XLII. Timápúram (or Jhanda Ghúta) Hill Station, lat. 18° 58′, long. 79° 26′—observed at in 1867—is about 3 miles N.W. of the deserted village of Timápúram; pargana and

tahsíl Chinúr of the Haidarábád States. The station is built on what appeared to be the site of a Topographical Survey station.

The pillar is solid and contains at least two marks, the distance between which is not known; the height of the pillar is 5·67 feet, and its upper mark is sunk 0·4 inch below its surface. The village of Nagáram lies about 4·5 miles S. E.

XLIII. Sirkonda Hill Station, lat. 18° 59′, long. 80° 7′—observed at in 1867—is on a very conspicuous hill, used occasionally as a Sanatarium by the residents of the civil station of Seroncha; thánah and tahsíl Seroncha, Upper Godávarí districts.

The pillar is solid and contains at least two marks, the distance between which is not known; the height of the pillar is 4·33 feet. The village of Sirkonda lies about 2·5 miles S.

XIV. Rámgír Hill Station, lat. 18° 35′, long. 79° 34′—observed at in 1867 and 1868—is in the middle of a flat-topped, conspicuous range with very precipitous approaches. From about half a mile to the east of the station the hill is extensively fortified and the works are on a most stupendous scale. The station is situated in the jágír of Fakírán Múlk (a son-in-law of the Nawáb Salár Jang) in the Haidarábád States, and has been built on the site of an old platform supposed to be Colonel Lambton's "Ramgeer".

The pillar is solid and contains at least two marks, the distance between which is not known; the height of the pillar is 8·25 feet. The village of Rámgír lies about 5 miles E.

XVI. Partábgirí Hill Station, lat. 18° 38′, long. 80° 3′—observed at in 1867 and 1868—is on the highest part of a conspicuous hill; thánah Mádhápúr, tahsíl Chinúr of the Haidarábád States. The pillar was built on the site of a Topographical Survey station of the same name, and probably also corresponds with Colonel Lambton's "Purtaubgeeree."

The pillar is solid and contains at least two marks, the distance between which is not known; the height of the pillar is 7·58 feet. The village of Bopáram lies about 3 miles S. W. and the town of Mádhápúr about 7 miles N.

May 1874.

W. H. COLE.

JABALPUR MERIDIONAL SERIES.

NOTE.—Consequent on modern alterations of district and other boundaries, the sites occupied by the stations are now included in civil divisions of territory which differ frequently from the district, pargana or village, recorded in the preceding descriptions of stations: a suitably modified statement of the sub-divisions in question is accordingly given in the following table and is derived chiefly from the annual reports, up to 1878, made by the Civil Officials to whose care the stations have been committed.

The spellings 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.

It has become customary in modern times to erect a *square* protecting pillar at each Principal Station over the circular pillar on which the large theodolite stood and which carries the true mark-stone. The square pillar bears a sufficiently accurate mark for Topographical and Revenue Survey purposes, so that it is generally unnecessary to refer to the true mark-stone which thus remains concealed and protected. The stations which are not protected in the manner described are indicated thus ‡.

No.	Local name	District	Pargana, &c.	Village	Remarks
XII*	Kalúmar	Damoh	Tah. Damoh	Kalúmar	
XVI‡	Muraia	Jubbulpore	..	..	
I	Karondi	„	Thá. and Tah. Jubbulpore	..	
II	Sáson	„	Thá. Pátan, Tah. Jubbulpore	..	
III	Taunri	„	Thá. Kúndam	..	
IV	Ganjna	„	Thá. Bargi, Tah. Jubbulpore	..	
V	Balharu	Mandla	Thá. Náráyanganj, Tah. Mandla, Tál. Barela	Mauza Dhanwai	
VI	Kusambar	Seoni	Thá. Ghúmsúr, Tah. Lakhnádon	Banori	
VII	Múnda	„	Thá. Kaháni, Tah. Lakhnádon	Múnda	
VIII	Jhiria Kháp	Mandla	Thá. and Tah. Mandla, Tál. Tarhete	Mauza Chargaon	
IX	Talla	Seoni	Thá. Keolári, Tah. Lakhnádon	Talla	
X	Binori Dadur	Mandla	Thá. and Tah. Mandla, Tál. Jhalpur	Mauza Dongaria	
XI	Sarandi Pat	Seoni	Thá. Gaurjhola, Tah. Seoni	Sarandi	
XII	Kariápár	„	Thá. and Tah. Seoni	..	
XIII	Dhúkri	Bálaghát	Tah. Behir, P. Paraswára	Dhúkri	

NOTE.—Stations XII* and XVI appertain to the Calcutta Longitudinal Series.
Thá. stands for Thána, Tah. for Tahsíl, Tál. for Táluk and P. for Pargana.

No.	Local name	District	Pargana, &c.	Village	Remarks
XIV	Sirrájhari	Bálaghát	Thá. Karola, Tah. Bálaghát	Sirrájhari	Completely destroyed, the foundations of the pillars having been entirely removed.
XV	Khára Kona	„	Tah. Bálaghát, P. Dhansua	Ámbgaon	
XVI	Lingmára	Bhandára	Tah. Tirrora, P. Rámpaili	Mendki	
XVII	Bhajiadand	„	„	Bhajiadand	
XVIII	Líla	Bálaghát	Thá. Hatta, Tah. Bálaghát, P. Dhansua	Líla	
XIX	Khara	Bhandára	Tah. and P. Tirrora	Khara	
XX	Sitepar	„	Tah. Tirrora, P. Kámtha	Chichárband	
XXI	Jámri	„	Tah. Sákoli, P. Sángarhi	Jámri	
XXII	Chaklípat	„	Tah. Sákoli, P. Kámtha	Sategaon	
XXIII	Nishán	„	Tah. Sákoli, P. Pauni	Kaulewára	
XXIV	Úpáskata	Raipur	Thá. and Tah. Nándgaon	Pandharpain	Totally destroyed by Gonds who have dug away the foundations of the pillar to the depth of 7 or 8 feet.
XXV	Ghát	Bhandára	Tah. Sákoli, P. Pratápgarh	Pipalkhari	
XXVI	Bhímsain	„	Tah. Sákoli, P. Pauni	Kotúrli	
XXVII	Pratápgarh	„	Tah. Sákoli, P. Pratápgarh	Pratápgarh	
XXVIII	Sátbahini	Chánda	Tah. Brahmapuri, P. Garbori	Sárangarh	
XXIX	Parasgaon	„	Tah. Brahmapuri, P. Wairágarh	Parasgaon	
XXX	Rajuli or Károba-ka-Dúngar	„	Tah. Mul, P. Rájgarh	Balárpur	
XXXI	Ámbagarh	„	Tah. Warora, P. Bhándak	Mudoli	
XXXII	Thikmatha or Theka Dúngar	„	Tah. Brahmapuri, P. Wairágarh	Dúdhmála and Khutgaon	
XXXIII	Díwai	„	Tah. Mul, P. Ghátkúl	Pomúrna	
XXXIV	Ghot or Jámbí-ka-Dúngar	„	Tah. Mul, P. Ghot Arpalli	Ghot	
XXXV‡	*	..	..	..	

Tah. stands for Tahsíl, Thá. for Thána and P. for Pargana.
* No report received from the Official of the Native State in which this station lies.

No.	Local name	District	Pargana, &c.	Village	Remarks
XXXVI	*	..	..	..	
XXXVII	Polám Rajúl	Chánda	Tah. Mul, Z. Ahíri	Elgur	
XXXVIII	*	..	..	..	
XXXIX	Jhilera or Múslama Ghúta	Chánda	Tah. Mul	Jhilera	
XL	*	..	..	..	
XLI	*	..	..	..	
XLII	*	..	..	..	
XLIII	Sirkonda	Upper Godávari	Tah. and Tál. Sironcha	Govt. Forest	
XIV	*	..	..	..	
XVI‡	*	..	..	..	

NOTE.—Stations XIV and XVI appertain to the Bider Longitudinal Series.
* No reports received from the Officials of the Native States in which these stations lie.
Tah. stands for Tahsíl, Tál. for Táluk and Z. for Zamindári.

September 1878.

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

PRINCIPAL TRIANGULATION. TRIANGLES.

JABALPUR MERIDIONAL SERIES.

No. of triangle	Station	Spherical excess	Corrected plane angle			Distance		
						Log. feet	Feet	Miles
		"	°	′	"			
	Kalúmar, XII	1·25	55	0	31·04	5·1093379	128628·7	24·361
1	Lora, XVI	1·25	59	13	22·66	5·1300042	134897·6	25·549
	Karaundí, I	1·25	65	46	6·30	5·1558720	143176·6	27·117
	Lora, XVI	·70	46	45	9·16	4·9731110	93996·3	17·802
2	Karaundí, I	·71	47	50	57·25	4·9807819	95671·4	18·120
	Kalangargar, III	·71	85	23	53·59	5·1093379	128628·7	24·361
	Karaundí, I	·74	70	18	48·63	5·0617986	115291·9	21·836
3	Kalangargar, III	·74	59	32	39·65	5·0234734	105553·7	19·991
	Ballár, V	·73	50	8	31·72	4·9731110	93996·3	17·802
	Karaundí, I	·66	72	3	39·43	5·0497143	112128·1	21·236
4	Ballár, V	·65	44	21	11·29	4·9158843	82391·9	15·605
	Lapeta, IV	·65	63	35	9·28	5·0234734	105553·7	19·991
	Kalúmar, XII	·78	48	3	38·83	5·0027924	100645·0	19·062
5	Karaundí, I	·77	46	22	14·62	4·9909347	97934·3	18·548
	Sásan-kí-Toria, II	·78	85	34	6·55	5·1300042	134897·6	25·549

NOTES.—1. The values of the side are given in the same line with the opposite angle.
2. Kalúmar, XII and Lora, XVI appertain to the Calcutta Longitudinal Series.

No. of triangle	Station	Spherical excess	Corrected plane angle	Distance		
				Log. feet	Feet	Miles
		"	° ′ ″			
	Karaundí, I	·55	57 38 9·09	4·9526306	89666·6	16·982
6	Sásan-kí-Toria, II	·55	50 54 28·85	4·9158843	82391·9	15·605
	Lapeta, IV	·56	71 27 22·06	5·0027924	100645·0	19·062
	Lapeta, IV	·91	52 59 15·08	5·0358828	108613·2	20·571
7	Ballár, V	·91	71 29 25·27	5·1105375	128984·5	24·429
	Kúsam Bara, VI	·91	55 31 19·65	5·0497143	112128·1	21·236
	Ballár, V	·75	87 3 25·29	5·1332511	135909·9	25·741
8	Kúsam Bara, VI	·75	39 59 37·40	4·9418351	87465·2	16·565
	Kotálí, VIII	·75	52 56 57·31	5·0358828	108613·2	20·571
	Kúsam Bara, VI	1·06	62 9 49·06	5·1128472	129672·3	24·559
9	Kotálí, VIII	1·06	49 53 30·18	5·0498189	112155·1	21·241
	Banorí, X	1·07	67 56 40·76	5·1332511	135909·9	25·741
	Kúsam Bara, VI	·65	65 10 5·07	5·0309906	107396·6	20·340
10	Banorí, X	·65	43 26 4·08	4·9104113	81360·1	15·409
	Tálla, IX	·66	71 23 50·85	5·0498189	112155·1	21·241
	Lapeta, IV	·81	36 0 17·92	4·9151205	82247·1	15·577
11	Kúsam Bara, VI	·82	76 47 18·22	5·1342005	136207·3	25·797
	Múnda, VII	·81	67 12 23·86	5·1105375	128984·5	24·429
	Kúsam Bara, VI	·46	60 21 45·95	4·9151639	82255·3	15·579
12	Múnda, VII	·46	59 17 4·23	4·9104113	81360·1	15·409
	Tálla, IX	·46	60 21 9·82	4·9151205	82247·1	15·577
	Tálla, IX	·76	72 18 47·17	5·0759230	119103·1	22·557
13	Banorí, X	·75	48 28 21·02	4·9712244	93588·9	17·725
	Sarandí Pat, XI	·76	59 12 51·81	5·0309906	107396·6	20·340
	Banorí, X	1·31	60 26 33·52	5·1603564	144662·6	27·398
14	Sarandí Pat, XI	1·31	73 49 5·00	5·2033497	159716·5	30·249
	Dhúkrí, XIII	1·30	45 44 21·48	5·0759230	119103·1	22·557
	Sarandí Pat, XI	·73	37 31 28·80	4·9471356	88539·2	16·769
15	Dhúkrí, XIII	·74	46 51 38·49	5·0255854	106068·2	20·089
	Kharíkona, XV	·74	95 36 52·71	5·1603564	144662·6	27·398
	Sarandí Pat, XI	·75	45 21 36·31	4·9637899	92000·5	17·424
16	Kharíkona, XV	·76	79 31 16·62	5·1042886	127141·9	24·080
	Sirrájharí, XIV	·76	55 7 7·07	5·0255854	106068·2	20·089
	Tálla, IX	·92	71 19 29·09	5·1276219	134159·7	25·409
17	Sarandí Pat, XI	·91	67 18 33·95	5·1161262	130655·1	24·745
	Kariápahár, XII	·91	41 21 56·96	4·9712244	93588·9	17·725
	Sarandí Pat, XI	1·31	76 46 18·36	5·2104512	162349·6	30·748
18	Kariápahár, XII	1·31	49 40 20·64	5·1042886	127141·9	24·080
	Sirrájharí, XIV	1·31	53 33 21·00	5·1276219	134159·7	25·409

No. of triangle	Station	Spherical excess	Corrected plane angle			Distance		
						Log. feet	Feet	Miles
		"	°	′	"			
	Sirrájharí, XIV	·56	64	40	18·40	4·9777712	95010·4	17·994
19	Kharíkona, XV	·56	54	15	18·68	4·9310207	85314·1	16·158
	Lingmára, XVI	·56	61	4	22·92	4·9637899	92000·5	17·424
	Kharíkona, XV	·51	57	46	22·28	4·9316222	85432·3	16·180
20	Lingmára, XVI	·50	52	2	38·00	4·9010742	79629·5	15·081
	Lila, XVIII	·51	70	10	59·72	4·9777712	95010·4	17·994
	Lingmára, XVI	·86	80	3	26·39	5·1519838	141900·5	26·875
21	Lila, XVIII	·86	63	34	16·90	5·1106164	129007·9	24·433
	Sítápár, XX	·85	36	22	16·71	4·9316222	85432·3	16·180
	Lingmára, XVI	·64	36	39	29·51	4·8868787	77068·8	14·596
22	Sítápár, XX	·65	55	19	12·60	5·0259290	106152·2	20·105
	Khara, XIX	·65	88	1	17·89	5·1106164	129007·9	24·433
	Sirrájharí, XIV	·41	49	25	53·21	4·8422775	69546·9	13·172
23	Lingmára, XVI	·41	61	50	38·53	4·9069806	80719·9	15·288
	Bhajiadand, XVII	·42	68	43	28·26	4·9310207	85314·1	16·158
	Lingmára, XVI	·54	68	19	21·14	5·0136973	103204·2	19·546
24	Bhajiadand, XVII	·54	72	54	20·84	5·0259290	106152·2	20·105
	Khara, XIX	·54	38	46	18·02	4·8422775	69546·9	13·172
	Khara, XIX	·57	48	58	13·69	4·9728967	93950·0	17·794
25	Sítápár, XX	·57	92	47	57·19	5·0947930	124392·2	23·559
	Chakálípát, XXII	·57	38	13	49·12	4·8868787	77068·8	14·596
	Khara, XIX	·66	53	23	13·58	5·0011084	100255·6	18·988
26	Chakálípát, XXII	·65	41	47	2·33	4·9202496	83224·2	15·762
	Jámrí, XXI	·66	84	49	44·09	5·0947930	124392·2	23·559
	Khara, XIX	·50	102	21	28·00	5·0967189	124945·0	23·664
27	Sítápár, XX	·49	40	35	27·21	4·9202496	83224·2	15·762
	Jámrí, XXI	·49	37	3	4·79	4·8868787	77068·8	14·596
	Jámrí, XXI	·55	44	16	18·05	4·8776663	75451·2	14·290
28	Chakálípát, XXII	·55	67	40	21·96	4·9999281	99983·4	18·936
	Nisání, XXIII	·56	68	3	19·99	5·0011084	100255·6	18·988
	Jámrí, XXI	·99	80	22	17·02	5·1690236	147578·7	27·951
29	Nisání, XXIII	·98	57	43	10·89	5·1022707	126552·5	23·968
	Bhímsain, XXVI	·98	41	54	32·09	4·9999281	99983·4	18·936
	Nisání, XXIII	·76	59	35	12·16	5·1047502	127277·1	24·106
30	Bhímsain, XXVI	·76	30	57	34·42	4·8803721	75922·8	14·379
	Partábgarh, XXVII	·77	89	27	13·42	5·1690236	147578·7	27·951
	Chakálípát, XXII	·47	80	9	51·71	4·9980818	99559·3	18·856
31	Nisání, XXIII	·46	51	31	45·00	4·8982326	79110·2	14·983
	Upáskata, XXIV	·46	48	18	23·29	4·8776663	75451·2	14·290

No. of triangle	Station	Spherical excess	Corrected plane angle			Distance		
						Log. feet	Feet	Miles
		"	°	′	″			
	Nisáni, XXIII	·43	48	19	12·38	4·8729591	74637·9	14·136
32	Upáskata, XXIV	·42	46	38	34·99	4·8613018	72661·1	13·762
	Dhás, XXV	·43	85	2	12·63	4·9980818	99559·3	18·856
	Nisáni, XXIII	·42	74	47	15·97	4·9555475	90270·8	17·097
33	Dhás, XXV	·42	54	15	3·95	4·8803721	75922·8	14·379
	Partábgarh, XXVII	·42	50	57	40·08	4·8613018	72661·1	13·762
	Bhímsain, XXVI	·93	31	40	35·17	4·9828944	96137·9	18·208
34	Partábgarh, XXVII	·94	104	16	46·75	5·2490046	177420·8	33·602
	Parasgáon, XXIX	·94	44	2	38·08	5·1047502	127277·1	24·106
	Bhímsain, XXVI	1·92	54	17	6·57	5·1998997	158452·7	30·010
35	Parasgáon, XXIX	1·93	60	19	47·27	5·2293442	169568·1	32·115
	Sáthbainí, XXVIII	1·93	65	23	6·16	5·2490046	177420·8	33·602
	Bhímsain, XXVI	1·70	85	57	42·89	5·3111753	204727·1	38·774
36	Partábgarh, XXVII	1·70	55	42	40·12	5·2293442	169568·1	32·115
	Sáthbainí, XXVIII	1·70	38	19	36·99	5·1047502	127277·1	24·106
	Sáthbainí, XXVIII	1·45	62	47	25·55	5·1831170	152446·4	28·872
37	Parasgáon, XXIX	1·45	49	38	4·35	5·1159636	130606·2	24·736
	Rájulí, XXX	1·46	67	34	30·10	5·1998997	158452·7	30·010
	Parasgáon, XXIX	1·76	73	59	11·41	5·2622828	182929·1	34·646
38	Rájulí, XXX	1·75	52	47	7·21	5·1805883	151561·3	28·705
	Theka, XXXII	1·75	53	13	41·38	5·1831170	152446·4	28·872
	Rájulí, XXX	2·23	62	49	37·67	5·2692504	185887·6	35·206
39	Theka, XXXII	2·22	56	4	18·41	5·2389803	173372·6	32·836
	Ghot, XXXIV	2·23	61	6	3·92	5·2622828	182929·1	34·646
	Rájulí, XXX	1·69	51	18	57·95	5·1589902	144208·3	27·312
40	Ghot, XXXIV	1·69	58	53	13·61	5·1991085	158164·3	29·955
	Díwai, XXXIII	1·69	69	47	48·44	5·2389803	173372·6	32·836
	Sáthbainí, XXVIII	1·26	68	58	47·06	5·1695331	147751·9	27·983
41	Rájulí, XXX	1·25	55	25	6·29	5·1150084	130319·2	24·682
	Ambágarh, XXXI	1·25	55	36	6·65	5·1159636	130606·2	24·736
	Rájulí, XXX	1·74	70	4	30·66	5·2451116	175837·5	33·303
42	Ambágarh, XXXI	1·73	57	44	29·29	5·1991085	158164·3	29·955
	Díwai, XXXIII	1·73	52	11	0·05	5·1695331	147751·9	27·983
	Díwai, XXXIII	1·68	75	6	28·03	5·2580767	181166·0	34·312
43	Ghot, XXXIV	1·68	54	36	15·72	5·1841639	152814·3	28·942
	Ankora, XXXV	1·68	50	17	16·25	5·1589902	144208·3	27·312
	Ghot, XXXIV	1·35	61	38	52·67	5·2063143	160810·5	30·457
44	Ankora, XXXV	1·34	35	51	9·60	5·0294862	107025·2	20·270
	Polám Rajúl, XXXVII	1·35	82	29	57·73	5·2580767	181166·0	34·312

No. of triangle	Station	Spherical excess	Corrected plane angle	Distance		
				Log. feet	Feet	Miles
		"	° ′ ″			
	Ankora, XXXV	1·00	42 41 6·84	5·0375544	109032·1	20·650
45	Polám Rajúl, XXXVII	1·01	46 38 51·61	5·0679654	116940·6	22·148
	Jhilera, XXXIX	1·01	90 40 1·55	5·2063143	160810·5	30·457
	Ankora, XXXV	·92	86 15 45·22	5·1719092	148562·5	28·137
46	Jhilera, XXXIX	·91	41 58 22·67	4·9981171	99567·4	18·857
	Rechní, XL	·92	51 45 52·11	5·0679654	116940·6	22·148
	Díwai, XXXIII	·91	50 17 55·98	5·0703140	117574·7	22·268
47	Ankora, XXXV	·91	39 58 50·53	4·9920622	98188·9	18·596
	Sonda, XXXVI	·91	89 43 13·49	5·1841639	152814·3	28·942
	Ankora, XXXV	·98	70 7 44·90	5·1210227	132136·5	25·026
48	Sonda, XXXVI	·98	53 3 54·06	5·0504014	112305·6	21·270
	Rauta, XXXVIII	·98	56 48 21·04	5·0703140	117574·7	22·268
	Ankora, XXXV	·50	34 47 59·33	4·8096526	64513·8	12·219
49	Rauta, XXXVIII	·50	61 44 23·42	4·9981171	99567·4	18·857
	Rechní, XL	·51	83 27 37·25	5·0504014	112305·6	21·270
	Jhilera, XXXIX	1·27	48 38 21·13	5·0816261	120677·4	22·856
50	Rechní, XL	1·27	63 50 35·59	5·1593173	144316·9	27·333
	Burgpailí, XLI	1·27	67 31 3·28	5·1719092	148562·5	28·137
	Jhilera, XXXIX	1·15	61 2 31·38	5·1281420	134320·4	25·439
51	Burgpailí, XLI	1·15	48 53 26·44	5·0632044	115665·7	21·906
	Sirkonda, XLIII	1·16	70 4 2·18	5·1593173	144316·9	27·333
	Burgpailí, XLI	1·22	52 55 14·04	5·0949678	124442·2	23·569
52	Sirkonda, XLIII	1·22	67 38 8·83	5·1591138	144249·3	27·320
	Partábgirí, XVI	1·22	59 26 37·13	5·1281420	134320·4	25·439
	Burgpailí, XLI	1·40	75 21 57·08	5·2206507	166207·6	31·479
53	Partábgirí, XVI	1·39	47 31 20·55	5·1027596	126695·0	23·995
	Rámgír, XIV	1·40	57 6 42·37	5·1591138	144249·3	27·320
	Rechní, XL	·64	58 46 47·76	5·0186890	104397·2	19·772
54	Burgpailí, XLI	·63	39 54 3·63	4·8938017	78307·2	14·831
	Timápúram, XLII	·64	81 19 8·61	5·0816261	120677·4	22·856
	Burgpailí, XLI	1·01	75 24 8·85	5·1535711	142420·0	26·973
55	Timápúram, XLII	1·01	59 24 52·39	5·1027596	126695·0	23·995
	Rámgír, XIV	1·01	45 10 58·76	5·0186890	104397·2	19·772

Rámgír, XIV, and Partábgirí, XVI, appertain to the Bider Longitudinal Series.

October 1876. J. HERSCHEL.

SECONDARY TRIANGULATION. TRIANGLES.

JABALPUR MERIDIONAL SERIES.

PRINCIPAL-AUXILIARY STATIONS, AND INTERSECTED POINTS.

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

No. of triangle	Station		Corrected plane angle	Distance			Theodolite used	No. of triangle	Station		Corrected plane angle	Distance			Theodolite used
				Log. feet	Feet	Miles						Log. feet	Feet	Miles	
			° ′ ″				Inch				° ′ ″				Inch
	Lora, XVI		16 35 24	4·764076	58087	11·001	18		Kalúmar	h.s.	19 54 49	4·006298	10146	1·922	18
56	Kalúmar	h.s.	28 8 33	4·982072	95956	18·173	„	61	Kaimúrí Temple	s.	55 15 28	4·388775	24478	4·636	„
	Indráná No. 1	„	135 16 3	5·155885	143181	27·118	„		Dungeriá Temple			4·459339	28796	5·454	
				*											
	Lora, XVI		11 58 59	4·575996	37670	7·135	„		Kalúmar	h.s.	63 16 33	4·715614	51953	9·840	„
57	Kalúmar	h.s.	40 7 26	5·067905	116924	22·145	„	62	Indráná No. 1	„	29 43 52	4·460095	28847	5·463	„
	Kántí Temple			5·155885	143181	27·118			Kaimúrí Temple			4·764076	58087	11·001	
				*	4										
	Kalúmar	h.s.	11 58 53	4·354707	22631	4·286	„		Karaundí, I		83 2 53	5·072531	118176	22·382	36
58	Indráná No. 1	„	20 12 54	4·575996	37670	7·135	„	63	Sásan-kí-Toria, II		39 14 18	4·876829	75306	14·262	„
	Kántí Temple			4·764076	58087	11·001			Gosalpur Hill Mark			5·002792	100645	19·062	
													1		
	Kalúmar	h.s.		4·705399	50746	9·611			Kalúmar, XII		79 10 57	5·072531	118176	22·382	„
59	Indráná No. 1	„	29 43 3	4·459339	28796	5·454	„	64	Sásan-kí-Toria, II		46 19 49	4·939656	87027	16·482	„
	Kaimúrí Temple	s.	89 24 21	4·764076	58087	11·001	„		Gosalpur Hill Mark			4·990935	97934	18·548	
	Indráná No. 1	h.s.	27 59 26	4·384540	24240	4·591	„		Karaundí, I		19 8 18	4·468497	29410	5·570	„
60	Kaimúrí Temple	s.	51 16 30	4·605248	40295	7·632	„	65	Gosalpur Hill Mark			4·940144	87125	16·501	
	Katangi Temple			4·705399	50746	9·611			Indráná No. 2	h.s.	57 5 5	4·876829	75306	14·262	12

NOTE.—1. Names followed by Roman numerals are those of Principal Stations. Kalúmar, XII, and Lora, XVI, appertain to the Calcutta Longitudinal Series.
2. The values of the sides are given in the same lines with the opposite angles. * Base deduced by two sides and included angle.

No. of triangle	Station		Corrected plane angle	Distance			Theodolite used
				Log. feet	Feet	Miles	
			° ′ ″		°		Inch
	Kalúmar, XII		26 52 7	4·940144	87125	16·501	12
66	Karaundí, I		17 32 20	4·764133	58094	11·003	36
	Indráná No 2	h.s.		5·130004	134898	25·549	
	Kalúmar, XII		14 27 43	4·699671	50081	9·485	12
67	Sásan-kí-Toria, II		14 46 17	4·708665	51129	9·683	„
	Koní	h.s.	150 46 0	4·990935	97934	18·548	„
	Kalúmar, XII		14 8 33	4·701391	50279	9·523	36
68	Sásan-kí-Toria, II		14 16 35	4·705399	50746	9·611	„
	Koní Hill Mark			4·990935	97934	18·548	
	Kalúmar, XII		20 58 57	4·393011	24718	4·681	„
69	Koní Hill Mark			4·486063	30624	5·800	
	Chirwái	h.s.	132 40 51	4·705399	50746	9·611	12
	Kalúmar, XII		20 39 47	4·396856	24938	4·723	„
70	Koní	h.s.	25 40 46	4·486063	30624	5·800	„
	Chirwái	„	133 39 27	4·708665	51129	9·683	„
	Kalúmar, XII		50 37 18	4·461483	28939	5·481	„
71	Chirwái	h.s.	74 29 41	4·557217	36076	6·833	„
	Garad-kí-Toria	„	54 53 1	4·486063	30624	5·800	„
	Lora, XVI		61 22 41	5·106187	127699	24·185	18
72	Kalúmar	h.s.		4·959908	91182	17·269	
	Bichúá	„	79 48 32	5·155885	143181	27·118	„
				*	4		
	Lora, XVI		44 47 17	4·853888	71431	13·529	„
73	Indráná No. 1	h.s.		4·959908	91182	17·269	
	Bichúá	„	71 8 56	4·982072	95956	18·173	„
	Kalúmar	h.s.	3 20 37	5·242474	174773	33·101	„
74	Bichúá	„	21 52 47	5·047939	111671	21·150	„
	Múnía Temple			5·106187	127699	24·185	
	Kalúmar, XII		41 6 21	4·946667	88444	16·751	36
75	Gosalpur Hill Mark			5·123911	133018	25·193	
	Katangi	h.s.	40 18 36	4·939656	87027	16·482	„
					1		
	Karaundí, I		117 5 35	4·946667	88444	16·751	„
76	Gosalpur Hill Mark			4·368999	23388	4·430	
	Katangi	h.s.	49 17 25	4·876829	75306	14·262	„
	Karaundí, I		43 10 29	4·204953	16031	3·036	7
77	Katangi	h.s.	43 26 50	4·207144	16112	3·051	„
	Madár Tekri	„	93 22 41	4·368999	23388	4·430	„
	Katangi	h.s.	101 51 46	4·322355	21007	3·979	„
78	Madár Tekri	„	29 49 14	4·028336	10674	2·022	„
	Madan Mahal	„	48 19 0	4·204953	16031	3·036	„

No. of triangle	Station		Corrected plane angle	Distance			Theodolite used
				Log. feet	Feet	Miles	
			° ′ ″		°		Inch
	Karaundí, I		32 28 45	4·322355	21007	3·979	7
79	Madár Tekri	h.s.	123 11 55	4·514996	32734	6·200	„
	Madan Mahal	„	24 19 20	4·207144	16112	3·051	„
	Katangi	h.s.	82 22 42	4·156986	14354	2·719	„
80	Madan Mahal	„	50 8 28	4·045989	11117	2·106	„
	Jubbulpore Temple No. 1			4·028336	10674	2·022	
					1		
	Katangi	h.s.	19 29 4	3·824454	6675	1·264	„
81	Madár Tekri	„	33 44 47	4·045989	11117	2·106	„
	Jubbulpore Temple No. 1			4·204953	16031	3·036	
	Katangi	h.s.	86 51 52	4·176009	14997	2·840	„
82	Madan Mahal	„	47 50 42	4·046672	11135	2·109	„
	Jubbulpore Temple No. 2			4·028336	10674	2·022	
					1		
	Katangi	h.s.	14 59 54	3·778959	6011	1·138	„
83	Madár Tekri	„	28 38 37	4·046672	11135	2·109	„
	Jubbulpore Temple No. 2			4·204953	16031	3·036	
	Karaundí, I		27 13 5	4·880201	75893	14·374	36
84	Lapeta, IV		2 33 13	3·868814	7393	1·400	„
	Jubbulpore Hill Mark			4·915884	82392	15·605	
					1		
	Sásan-kí-Toria, II		48 38 3	4·880201	75893	14·374	„
85	Lapeta, IV		68 54 10	4·974716	94344	17·868	„
	Jubbulpore Hill Mark			4·952631	89667	16·982	
	Karaundí, I		18 39 35	3·999048	9978	1·890	7
86	Katangi	h.s.	29 55 33	4·191964	15558	2·947	„
	Jubbulpore Jail			4·368999	23388	4·430	
					1		
	Karaundí, I		24 30 54	3·829012	6745	1·278	„
87	Madár Tekri	h.s.	73 8 38	4·191964	15558	2·947	„
	Jubbulpore Jail			4·207144	16112	3·051	
	Karaundí, I		28 59 56	3·900322	7949	1·506	„
88	Madár Tekri	h.s.	71 42 15	4·192237	15568	2·949	„
	Jubbulpore Kachahrí			4·207144	16112	3·051	
					1		
	Karaundí, I		14 10 33	3·960401	9129	1·729	„
89	Katangi	h.s.	24 41 13	4·192237	15568	2·949	„
	Jubbulpore Kachahrí			4·368999	23388	4·430	
	Karaundí, I		15 41 54	3·906224	8058	1·526	„
90	Katangi	h.s.	36 3 14	4·243721	17528	3·320	„
	Jubbulpore School			4·368999	23388	4·430	
					°		
	Karaundí. I		27 28 35	3·908826	8106	1·535	„
91	Madár Tekri	h.s.	86 1 45	4·243721	17528	3·320	„
	Jubbulpore School			4·207144	16112	3·051	

NOTE.—Kalúmar, XII, and Lora, XVI, appertain to the Calcutta Longitudinal Series. * Base deduced by two sides and included angle.

No. of triangle	Station		Corrected plane angle	Distance			Theodolite used
				Log. feet	Feet	Miles	
			° ′ ″				Inch
	Katangi	h.s.		4·022196	10524	1·993	
92	Madár Tekri	„	47 8 14	4·070276	11756	2·227	7
	Jubbulpore House	s.	91 51 16	4·204953	16031	3·036	„
					1		
	Madár Tekri	h.s.	76 57 28	4·327692	21266	4·028	„
93	Madan Mahal	„		4·022196	10524	1·993	
	Jubbulpore House	s.	74 13 6	4·322355	21007	3·979	„
	Karaundí, I		19 59 37	4·922685	83692	15·851	36
94	Sásan-kí-Toria, II		4 17 6	4·262190	18289	3·464	„
	Jubbulpore Church			5·002792	100645	19·062	
					2		
	Karaundí, I		14 3 5	3·856328	7183	1·360	„
95	Katangi	h.s.	38 10 53	4·262190	18289	3·464	„
	Jubbulpore Church			4·368999	23388	4·430	
	Katangi	h.s.	103 25 17	4·106223	12771	2·419	7
96	Madan Mahal	„	22 11 21	3·695356	4959	0·939	„
	Jubbulpore	s.	54 23 22	4·028336	10674	2·022	36
					2		
	Madár Tekri	h.s.	30 31 6	4·106223	12771	2·419	7
97	Madan Mahal	„	26 7 39	4·044336	11075	2·098	„
	Jubbulpore	s.		4·322355	21007	3·979	
	Madár Tekri	h.s.	43 41 34	4·165188	14628	2·770	„
98	Madan Mahal	„	53 33 28	4·231344	17035	3·226	„
	Kumhár-kí-Toria Temple			4·322355	21007	3·979	
					1		
	Karaundí, I		52 9 54	4·231344	17035	3·226	„
99	Madár Tekri	h.s.	79 30 21	4·326511	21209	4·017	„
	Kumhár-kí-Toria Temple			4·207144	16112	3·051	
	Karaundí, I		59 49 45	4·238225	17307	3·278	„
100	Madár Tekri	h.s.	66 34 40	4·264098	18370	3·479	„
	Jubbulpore Hospital	s.		4·207144	16112	3·051	
					2		
	Madár Tekri	h.s.	56 37 15	4·266227	18460	3·496	„
101	Madan Mahal	„		4·238225	17307	3·278	
	Jubbulpore Hospital	s.	71 51 6	4·322355	21007	3·979	„
	Lora, XVI		40 23 2	4·879616	75791	14·354	36
102	Kalangargar, III		84 44 43	5·066276	116487	22·062	„
	Jhúj	h.s.	54 52 15	4·980782	95671	18·120	12
	Kalangargar, III		60 10 20	4·819222	65951	12·491	36
103	Jhúj	h.s.	34 17 59	4·631852	42840	8·114	12
	Piparíá	„	85 31 41	4·879616	75791	14·354	„
	Jhúj	h.s.	35 3 49	4·637986	43450	8·229	„
104	Piparíá	„	84 14 41	4·876512	75251	14·252	„
	Kalangargar	„	60 41 30	4·819222	65951	12·491	„

No. of triangle	Station		Corrected plane angle	Distance			Theodolite used
				Log. feet	Feet	Miles	
			° ′ ″		2		Inch
	Lora, XVI		40 6 36	4·876512	75251	14·252	12
105	Jhúj	h.s.	54 6 25	4·975998	94623	17·921	„
	Kalangargar	„	85 46 59	5·066276	116487	22·062	„
	Lora, XVI		43 31 50	4·818436	65832	12·468	„
106	Kalangargar	h.s.	54 35 41	4·891577	77907	14·755	„
	Bhiláwá	„	81 52 29	4·975998	94623	17·921	„
					2		
	Jhúj	h.s.	60 57 10	4·818436	65832	12·468	„
107	Kalangargar	„	31 11 18	4·591022	38996	7·386	„
	Bhiláwá	„	87 51 32	4·876512	75251	14·252	„
	Kalangargar	h.s.	39 47 59	4·627072	42371	8·025	„
108	Bhiláwá	„	56 11 56	4·740408	55006	10·418	„
	Katolá Hill Mark			4·818436	65832	12·468	
					0		
	Lora, XVI		24 48 24	4·627072	42371	8·025	36
109	Bhiláwá	h.s.	25 40 33	4·641048	43757	8·287	12
	Katolá Hill Mark			4·891577	77907	14·755	
	Lora, XVI		14 40 14	4·593795	39246	7·433	36
110	Kalangargar, III		23 27 17	4·790137	61679	11·682	„
	Taunrí Hill Mark			4·980782	95671	18·120	
					3		
	Lora, XVI		14 56 40	4·585151	38473	7·286	12
111	Kalangargar	h.s.	24 25 15	4·790137	61679	11·682	„
	Taunrí Hill Mark			4·975998	94623	17·921	
	Kalangargar, III		65 44 46	4·621849	41865	7·929	36
112	Piparíá	h.s.	45 21 1	4·514105	32667	6·187	12
	Tikárí No. 1	„		4·631852	42840	8·114	
					1		
	Piparíá	h.s.	44 4 1	4·505683	32039	6·068	„
113	Kalangargar	„	65 20 19	4·621849	41865	7·929	„
	Tikárí No. 1	„		4·637986	43450	8·229	
	Kalangargar	h.s.	70 56 9	4·735008	54326	10·289	„
114	Tikárí No. 1	„	75 11 14	4·744829	55568	10·524	„
	Bamní	„	33 52 37	4·505683	32039	6·068	„
					6		
	Kalangargar, III		71 41 33	4·735008	54326	10·289	36
115	Tikárí No. 1	h.s.		4·739294	54865	10·391	
	Bamní	„	34 48 40	4·514105	32667	6·187	12
	Jhúj	h.s.	44 31 25	4·718959	52355	9·916	„
116	Piparíá	„	73 26 1	4·854703	71565	13·554	„
	Jhiríá Hill Mark			4·819222	65951	12·491	
					6		
	Jhúj	h.s.	35 42 24	4·648144	44478	8·424	„
117	Bamní	„	69 53 49	4·854703	71565	13·554	„
	Jhiríá Hill Mark			4·865694	73400	13·901	

NOTE.—Lora, XVI, appertains to the Calcutta Longitudinal Series.

No. of triangle	Station	Corrected plane angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″				Inch
	Kalangargar, III	31 48 28	4·718928	52351	9·915	36
118	Bamní h.s.	114 39 43	4·955520	90265	17·096	12
	Bhainsá Hill Mark		4·739294	54865	10·391	
				°		
	Kalangargar, III	37 45 15	4·793758	62195	11·779	36
119	Piparíá h.s.	117 18 6	4·955520	90265	17·096	12
	Bhainsá Hill Mark		4·631852	42840	8·114	
	Kotálí, VIII		4·845937	70135	13·283	
120	Banorí, X	23 16 26	4·850558	70886	13·425	36
	Malpathár h.s.	133 42 46	5·112847	129672	24·559	„
	Banorí, X	40 31 19	4·662778	46002	8·713	„
121	Malpathár h.s.	57 20 24	4·775293	59606	11·289	„
	Mandla s.	82 8 17	4·845937	70135	13·283	„
	Banorí, X	42 51 39	4·678699	47720	9·038	„
122	Malpathár h.s.	45 50 3	4·701767	50323	9·531	„
	Mandla Temple		4·845937	70135	13·283	
	Kharíkona, XV	52 37 37	4·864893	73264	13·876	„
123	Sirrájharí, XIV	41 3 34	4·782150	60555	11·469	„
	Hill Rock		4·963790	92000	17·424	
				°		
	Sarandí Pat, XI	27 45 1	4·782150	60555	11·469	„
124	Kharíkona, XV	26 53 40	4·769592	58829	11·142	„
	Hill Rock		5·025585	106068	20·089	
	Kariápahár, XII	35 8 50	5·004026	100931	19·116	„
125	Sirrájharí, XIV	32 40 15	4·976088	94643	17·925	7
	Dalál-ká-Pahár Hill Mark		5·210451	162350	30·748	
	Kharíkona, XV	36 46 23	4·940203	87137	16·503	36
126	Sirrájharí, XIV	104· 1 29	5·149889	141218	26·746	„
	Dungariá Tree		4·963790	92000	17·424	
				1		
	Sirrájharí, XIV	39 21 10	4·764108	58091	11·002	„
127	Lingmára, XVI	72 1 1	4·940203	87137	16·503	„
	Dungariá Tree		4·931021	85314	16·158	
	Lingmára, XVI	75 43 55	4·920169	83209	15·759	„
128	Bhajiadand, XVII	50 10 9	4·819103	65933	12·487	„
	Hill S_1		4·842278	69547	13·172	
				°		
	Bhajiadand, XVII	22 44 12	4·619584	41647	7·888	„
129	Khara, XIX	50 33 7	4·920169	83209	15·759	„
	Hill S_1		5·013697	103204	19·546	
	Jámrí, XXI	31 32 45	4·801606	63330	11·994	„
130	Chakálípát, XXII	92 32 11	5·082530	120929	22·903	„
	Hill S_2		5·001108	100256	18·988	

No. of triangle	Station	Corrected plane angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″		°		Inch
	Khara, XIX	30 10 56	4·801606	63330	11·994	36
131	Chakálípát, XXII	50 45 8	4·989227	97550	18·475	„
	Hill S_2		5·094793	124392	23·559	
	Sítápár, XX	63 58 9	4·895891	78685	14·902	„
132	Khara, XIX	54 22 34	4·852360	71180	13·481	„
	Hill S_3		4·886879	77069	14·596	
				1		
	Khara, XIX	47 58 54	4·819289	65961	12·493	„
133	Jámrí, XXI	62.24 16	4·895891	78685	14·902	„
	Hill S_3		4·920250	83224	15·762	
	Khara, XIX	64 41 19	5·023989	105679	20·015	„
134	Jámrí, XXI	69 55 14	5·040588	109796	20·795	„
	Hill S_4		4·920250	83224	15·762	
				2		
	Jámrí, XXI	59 10 49	5·007215	101675	19·257	„
135	Nisání, XXIII	63 12 7	5·023989	105679	20·015	„
	Hill S_4		4·999928	99983	18·936	
	Sirkonda, XLIII	29 3 57	4·887497	77179	14·617	„
136	Partábgirí, XVI	22 30 0	4·783867	60795	11·514	„
	Sironcha Mark		5·094968	124442	23·569	

NARSINGHPUR, CHHINDWÁRA AND SEONI

SECONDARY SERIES.

No. of triangle	Station	Corrected plane angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″				
	Karaundí, I	47 30 9	4·892236	78025	14·778	„
137	Sásan-kí-Toria, II	60 29 53	4·964276	92103	17·444	„
	Tengan h.s.	71 59 58	5·002792	100645	19·062	12
	Sásan-kí-Toria, II	32 10 24	4·624300	42102	7·974	36
138	Tengan h.s.	48 30 59	4·772561	59233	11·218	12
	Ghughrí „	99 18 37	4·892236	78025	14·778	„
	Tengan h.s.	72 45 15	4·627547	42418	8·034	„
139	Ghughrí „	35 49 2	4·414830	25991	4·923	„
	Sáliwára No. 1 „	71 25 43	4·624300	42102	7·974	„
	Ghughrí h.s.	68 6 37	4·756869	57131	10·820	„
140	Sáliwára No. 1 „	68 20 37	4·757576	57224	10·838	„
	Rámgarhá „	43 32 46	4·627547	42418	8·034	„
	Ghughrí h.s.	28 36 19	4·464593	29147	5·520	„
141	Rámgarhá „	41 26 26	4·605218	40292	7·631	„
	Látgaon „	109 57 15	4·757576	57224	10·838	„

NOTE.—Partábgirí, XVI, appertains to the Bider Longitudinal Series.

No. of triangle	Station		Corrected plane angle	Distance			Theodolite used
				Log. feet	Feet	Miles	
			° ′ ″				Inch
	Rámgarhá	h.s.	56 21 38	4·784710	60913	11·537	12
142	Látgaon	„	100 9 47	4·857437	72017	13·640	„
	Gondreí	s.	23 28 35	4·464593	29147	5·520	„
	Rámgarhá	h.s.	63 8 12	4·939359	86968	16·471	„
143	Gondreí	s.	69 14 24	4·959797	91158	17·265	„
	Sarrá	h.s.	47 37 24	4·857437	72017	13·640	„
	Gondreí	s.	49 22 13	4·888122	77290	14·638	„
144	Sarrá	h.s.	71 59 3	4·986086	96847	18·342	„
	Kishanpur	„	58 38 44	4·939359	86968	16·471	„
	Sarrá	h.s.	72 24 31	4·911597	81582	15·451	„
145	Kishanpur	„	43 1 32	4·766387	58397	11·060	„
	Súká Pathárá	„	64 33 57	4·888122	77290	14·638	„
	Sarrá	h.s.	63 7 5	4·890335	77685	14·713	„
146	Súká Pathárá	„	74 46 39	4·924487	84040	15·917	„
	Mundí Toria	„	42 6 16	4·766387	58397	11·060	„
	Kishanpur	h.s.	33 43 1	4·688173	48772	9·237	„
147	Súká Pathárá	„	78 4 44	4·934340	85969	16·282	„
	Teliá	„	68 12 15	4·911597	81582	15·451	
	Súká Pathárá	h.s.	76 25 17	4·932930	85690	16·229	„
148	Mundí Toria	„	41 47 12	4·768950	58742	11·125	„
	Gúnsá	„		4·890335	77685	14·713	
					10		
	Súká Pathárá	h.s.	66 9 23	4·772844	59271	11·226	„
149	Teliá	„	65 1 28	4·768950	58742	11·125	„
	Gúnsá	„		4·688173	48772	9·237	
	Mundí Toria	h.s.	48 17 48	4·910813	81435	15·423	„
150	Gúnsá	„	79 55 36	5·030979	107394	20·340	„
	Manori No. 1	„	51 46 36	4·932930	85690	16·229	„
	Gúnsá	h.s.	72 43 48	4·964431	92136	17·450	„
151	Manori No. 1	„	49 42 14	4·866826	73591	13·938	„
	Chanerí	„	57 33 58	4·910813	81435	15·423	„
	Manori No. 1	h.s.	71 22 34	5·066344	116505	22·065	7
152	Chanerí	„	60 5 0	5·027598	106561	20·182	„
	Kútiá	„	48 32 26	4·964431	92136	17·450	„
	Manori No. 1	h.s.	42 31 14	4·861897	72761	13·780	„
153	Kútiá	„	55 39 49	4·948887	88897	16·837	„
	Amlíwára	„	81 48 57	5·027598	106561	20·182	„
	Manori No. 1	h.s.	72 52 59	5·035590	108540	20·557	„
154	Amlíwára	„	55 36 15	4·971801	93713	17·749	„
	Kariápahár, XII		51 30 46	4·948887	88897	16·837	„
	Manori No. 1	h.s.	46 14 42	4·857708	72062	13·648	7
155	Kariápahár, XII		63 49 4	4·951972	89531	16·957	„
	Chaurágarh	„	69 56 14	4·971801	93713	17·749	„
	Kariápahár, XII		73 37 14	5·114630	130206	24·660	„
156	Chaurágarh	h.s.	74 18 26	5·116126	130655	24·745	„
	Tálla, IX		32 4 20	4·857708	72062	13·648	„
	Sásan-kí-Toria, II		79 26 16	4·993301	98469	18·650	12
157	Ghughrí	h.s.	64 18 36	4·955521	90265	17·096	„
	Bára Hill Mark			4·772561	59233	11·218	
					8		
	Sásan-kí-Toria, II		87 33 3	5·005776	101339	19·193	„
158	Koní	h.s.	62 51 45	4·955521	90265	17·096	„
	Bára Hill Mark			4·699671	50081	9·485	
	Sásan-kí-Toria, II		38 13 8	4·568028	36985	7·005	36
159	Ghughrí	h.s.	44 0 26	4·618399	41533	7·866	12
	Dharmpura Hill Mark			4·772561	59233	11·218	
					3		
	Tengan	h.s.	55 18 33	4·568028	36985	7·005	„
160	Ghughrí	„	55 18 11	4·567995	36982	7·004	„
	Dharmpura Hill Mark			4·624300	42102	7·974	
	Tengan	h.s.	80 17 5	4·643429	43998	8·333	„
161	Ghughrí	„	29 7 18	4·336934	21724	4·114	„
	Sáliwára No. 2	„	70 35 37	4·624300	42102	7·974	„
	Tengan	h.s.	54 20 10	4·340266	21891	4·146	„
162	Sáliwára No. 2	„	71 56 1	4·408511	25616	4·852	„
	Piparíá Hill Mark			4·336934	21724	4·114	
	Gondreí	s.	95 35 19	5·072268	118105	22·368	„
163	Kishanpur	h.s.		4·769533	58821	11·140	
	Hírápur	„	54 41 50	4·986086	96847	18·342	„
					3		
	Sarrá	h.s.	57 57 5	5·072268	118105	22·368	„
164	Kishanpur	„	88 21 35	5·143899	139283	26·379	„
	Hírápur	„	33 41 20	4·888122	77290	14·638	„
	Kishanpur	h.s.		4·948114	88739	16·807	
165	Hírápur	„	63 30 27	5·047986	111683	21·152	„
	Birmán	„	71 9 57	5·072268	118105	22·368	„
	Sarrá	h.s.	28 39 41	4·712687	51604	9·774	„
166	Kishanpur	„	105 25 9	5·015859	103719	19·644	„
	Narsinghpur Temple			4·888122	77290	14·638	
					4		
	Sarrá	h.s.	29 17 24	4·847681	70417	13·337	„
167	Hírápur	„	46 6 13	5·015859	103719	19·644	„
	Narsinghpur Temple			5·143899	139283	26·379	

No. of triangle	Station		Corrected plane angle	Distance			Theodolite used
				Log. feet	Feet	Miles	
			° ′ ″				Inch
	Sarrá	h.s.	26 14 58	4·829772	67573	12·798	12
168	Hirápur	,,	39 29 2	4·987437	97149	18·399	,,
	Narsinghpur Jail			5·143899	139283	26·379	
					18		
	Sarrá	h.s.	31 42 7	4·710395	51333	9·722	,,
169	Kishanpur	,,	95 59 52	4·987437	97149	18·399	,,
	Narsinghpur Jail			4·888122	77290	14·638	
	Manori No. 1	h.s.	17 32 46	4·533624	34168	6·471	7
170	Chanerí	,,	108 4 13	5·032408	107748	20·407	,,
	Ghúterá	,,	54 23 1	4·964431	92136	17·450	,,
	Chanerí	h.s.	36 29 48	4·840771	69306	13·126	,,
171	Kútiá	,,	52 26 52	4·965580	92380	17·496	,,
	Rángín Khápa	,,	91 3 20	5·066344	116505	22·065	,,
	Chanerí	h.s.	81 26 40	4·866904	73604	13·940	,,
172	Ghúterá	,,	71 13 47	4·848030	70474	13·347	,,
	Deodúngar	,,	27 19 33	4·533624	34168	6·471	,,
					5		
	Chanerí	h.s.	73 54 19	4·997621	99454	18·836	,,
173	Rangín Khápa	,,	42 54 33	4·848030	70474	13·347	,,
	Deodúngar	,,	63 11 8	4·965580	92380	17·496	,,
	Rangín Khápa	h.s.	58 17 33	5·020048	104724	19·834	,,
174	Deodúngar	,,	67 48 50	5·056843	113984	21·588	,,
	Sondiá	,,	53 53 37	4·997621	99454	18·836	,,
	Rangín Khápa	h.s.	27 28 29	4·784467	60879	11·530	,,
175	Sondiá	,,	32 16 17	4·847914	70455	13·344	,,
	Úmarpat-har	,,	120 15 14	5·056843	113984	21·588	,,
	Sondiá	h.s.	29 52 34	4·627668	42430	8·036	,,
176	Úmarpat-har	,,	104 30 12	4·916264	82464	15·618	,,
	Chhindwára	s.	45 37 14	4·784467	60879	11·530	,,
	Chanerí	h.s.	58 53 2	5·014988	103511	19·604	,,
177	Kútiá	,,	46 37 31	4·943914	87885	16·645	,,
	Manori No. 2	,,	74 29 27	5·066344	116505	22·065	,,
	Kútiá	h.s.	62 0 31	4·971765	93706	17·747	,,
178	Manori No. 2	,,	40 43 14	4·840290	69229	13·112	,,
	Khammariá	,,	77 16 15	5·014988	103511	19·604	,,
	Manori No. 1	h.s.	30 15 2	4·652937	44971	8·517	,,
179	Amliwára	,,	64 58 24	4·907876	80886	15·319	,,
	Seoni	s.	84 46 34	4·948887	88897	16·837	,,
					1		
	Manori No. 1	h.s.	42 37 57	4·810129	64585	12·232	,,
180	Kariápahár, XII		58 1 18	4·907876	80886	15·319	,,
	Seoni	s.	79 20 45	4·971801	93713	17·749	,,
	Manori No. 1	h.s.	45 31 55	4·830013	67610	12·805	7
181	Kariápahár, XII		52 54 40	4·878373	75574	14·313	,,
	Chhapárá Building			4·971801	93713	17·749	

NÁGPUR AND BHANDÁRA*

SECONDARY SERIES.

	Jámrí, XXI		56 40 22	5·024947	105912	20·059	,,
182	Bhimsain, XXVI		30 3 44	4·802762	63498	12·026	,,
	Jamborá	h.s.	93 15 54	5·102271	126552	23·968	,,
	Bhimsain, XXVI		53 5 33	4·983200	96206	18·221	,,
183	Jamborá	h.s.	65 13 51	5·038411	109247	20·691	,,
	Baláhí	,,	61 40 36	5·024947	105912	20·059	,,
	Bhimsain, XXVI		61 58 14	5·048244	111749	21·165	,,
184	Baláhí	h.s.	58 22 50	5·032637	107805	20·418	,,
	Haldolí	,,	59 38 56	5·038411	109247	20·691	,,
	Baláhí	h.s.	67 0 21	5·107855	128190	24·278	14
185	Haldolí	,,	59 37 36	5·079695	120142	22·754	,,
	Gordpur	s.	53 22 3	5·048244	111749	21·165	,,
	Haldolí	h.s.	48 3 12	5·000268	100062	18·951	,,
186	Gordpur	s.	59 36 41	5·064648	116051	21·979	,,
	Júnápání	h.s.	72 20 7	5·107855	128190	24·278	,,
	Baláhí	h.s.	47 46 11	4·956818	90535	17·147	,,
187	Gordpur	s.	52 56 16	4·989316	97570	18·479	,,
	Nágárjún	h.s.	79 17 33	5·079695	120142	22·754	,,
	Gordpur	s.	54 56 39	4·954749	90105	17·065	,,
188	Nágárjún	h.s.	69 43 11	5·013888	103249	19·555	,,
	Tikári No. 2	,,	55 20 10	4·956818	90535	17·147	,,
	Gordpur	s.	65 9 54	4·996329	99158	18·780	,,
189	Júnápání	h.s.	48 31 0	4·913040	81854	15·503	,,
	Láwá	,,	66 19 6	5·000268	100062	18·951	,,
					1		
	Gordpur	s.	73 58 27	5·051802	112668	21·339	,,
190	Tikári No. 2	h.s.	44 17 18	4·913040	81854	15·503	,,
	Láwá	,,	61 44 15	5·013888	103249	19·555	,,
	Tikári No. 2	h.s.	48 19 13	4·982707	96096	18·200	,,
191	Láwá	,,	70 33 18	5·083954	121326	22·978	,,
	Pilkápár	,,	61 7 29	5·051802	112668	21·339	,,

*The continuation of this Series will be found in the Synopsis of Results of the Great Arc Meridional Series, Section 18° to 24°.

No. of triangle	Station	Corrected plane angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″				Inch
	Jamborá h.s.	47 3 4	4·853111	71303	13·504	7
192	Baláhí „	51 59 3	4·885061	76747	14·535	„
	Rowanwára „	80 57 53	4·983200	96206	18·221	„
	Jamborá h.s.	31 42 40	4·614048	41119	7·788	„
193	Rowanwára „	69 27 21	4·864824	73253	13·874	„
	Bhandára s.	78 49 59	4·885061	76747	14·535	„
	Baláhí h.s.	26 48 20	4·795361	62425	11·823	14
194	Haldolí „	27 1 32	4·798646	62899	11·913	„
	Ambhorá Rev. Survey Station		5·048244	111749	21·165	
	Baláhí h.s.	9 23 0	4·792231	61977	11·738	„
195	Haldolí „	7 42 45	4·707700	51015	9·662	„
	Chápgarhí Rev. Survey Station		5·048244	111749	21·165	
	Baláhí h.s.	40 8 35	4·922363	83630	15·839	„
196	Gordpur s.	72 0 45	5·091244	123380	23·367	„
	Manser Rev. Survey Station		5·079695	120142	22·754	
	Gordpur s.	35 52 10	4·781741	60498	11·458	„
197	Tikárí No. 2 h.s.	54 5 39	4·922363	83630	15·839	„
	Manser Rev. Survey Station		5·013888	103249	19·555	
	Nágárjún h.s.	139 41 41	5·061854	115307	21·838	„
198	Tikárí No. 2 „	9 56 31	4·488211	30776	5·829	„
	Bandarborí Rev. Survey Station		4·954749	90105	17·065	
	Baláhí h.s.	18 23 10	4·488211	30776	5·829	14
199	Nágárjún „	71 17 35	4·965751	92417	17·503	„
	Bandarborí Rev. Survey Station		4·989316	97570	18·479	
	Haldolí h.s.	35 5 6	4·912509	81754	15·484	„
200	Gordpur s.	29 14 27	4·841847	69478	13·159	„
	Kolármet Rev. Survey Station		5·107855	128190	24·278	
	Gordpur s.	30 22 14	4·705837	50797	9·621	„
201	Júnápání h.s.	54 27 37	4·912509	81754	15·484	„
	Kolármet Rev. Survey Station		5·000268	100062	18·951	
	Gordpur s.	54 59 23	4·917449	82689	15·661	„
202	Júnápání h.s.	27 22 20	4·666679	46417	8·791	„
	Sítábaldí Rev. Survey Station		5·000268	100062	18·951	
	Tikárí No. 2 h.s.	29 46 30	4·786772	61203	11·591	„
203	Láwá „	36 18 53	4·863253	72988	13·824	„
	Surádí Rev. Survey Station		5·051802	112668	21·339	
	Gordpur s.	44 40 15	4·786772	61203	11·591	„
204	Láwá h.s.	25 25 22	4·572551	37372	7·078	„
	Surádí Rev. Survey Station		4·913040	81854	15·503	

July 1877.

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

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

JABALPUR MERIDIONAL SERIES.

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
ÁMBAGARH, XXXI			
Sáthbaini, XXVIII		220 52 42·84	41
Rájulí, XXX		276 28 50·74	41
Díwai, XXXIII		334 13 21·76	42
AMLIWARA h.s.			
Kútiá	h.s.	84 28 41	153
Manori No. 1	„	166 17 38	153
Kariápahár, XII		221 53 53	154
Seoni	s.	231 16 2	179
ANKORA, XXXV			
Rechní, XL		26 30 1·06	46
Rauta, XXXVIII		61 18 0·89	48
Sonda, XXXVI		131 25 46·77	47
Díwai, XXXIII		171 24 38·20	43
Ghot, XXXIV		221 41 56·13	43
Polám Rajúl, XXXVII		257 33 7·08	44
Jhilera, XXXIX		300 14 14·92	45
BALAHI h.s.			
Haldolí	h.s.	20 12 12	184
Chápgarhí Rev. Survey Station		29 35 12	195
Gordpur	s.	87 12 33	185
Manser Rev. Survey Station		127 21 8	196
Nágárjún	h.s.	134 58 44	187
Bandarborí Rev. Survey Station		153 21 54	199
Jamborá	h.s.	260 8 46	183
Rowanwára	„	312 7 49	192
Bhímsain, XXVI		321 49 22	183
Ambhorá Rev. Survey Station		353 23 52	194
BALLAR, V			
Kúsam Bara, VI		28 46 5·39	7
Lapeta, IV		100 15 31·56	4
Karaundí, I		144 36 43·51	3
Kalangargar, III		194 45 15·96	3
Kotálí, VIII		301 42 39·34	8
BAMNI h.s.			
Bhainsá Hill Mark		15 58 57	118
Kalangargar, III		130 38 40	115
Kalangargar	h.s.	131 34 43	114
Tikárí No. 1	„	165 27 20	114
Jhiriá Hill Mark		271 18 22	117
BANORI, X			
Sarandí Pat, XI		39 3 17·99	13
Tálla, IX		87 31 39·77	10
Kúsam Bara, VI		130 57 44·50	9
Malpathár	h.s.	175 38 0	120
Kotálí, VIII		198 54 26·33	9
Mandla	s.	216 9 19	121
Mandla Temple		218 29 39	122
Dhúkrí, XIII		338 36 43·17	14
BHAJIADAND, XVII			
Sirrájharí, XIV		184 51 3·73	23

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
Bhajiadand, XVII			
Lingmára, XVI		253 34 32·40	23
Hill S_1		303 44 41	128
Khara, XIX		326 28 53·79	24
Bhandara s.			
Jamborá	h.s.	244 50 7	193
Rowanwára	„	323 40 6	193
Bhilawa h.s.			
Kalangargar	h.s.	34 5 47	106
Katolá Hill Mark		90 17 43	108
Lora, XVI *		115 58 16	106
Jhúj	„	306 14 15	107
Bhimsain, XXVI			
Sáthbainí, XXVIII		23 52 48·10	35
Haldolí	h.s.	79 55 24	184
Baláhí	„	141 53 38	183
Jamborá	„	194 59 11	182
Jámrí, XXI		225 2 55·25	29
Nisání, XXIII		266 57 28·32	29
Partábgarh, XXVII		297 55 3·51	30
Parasgáon, XXIX		329 35 39·61	34
Bichua h.s.			
Kalúmar	h.s.	124 26 21	72
Indráná No. 1	„	133 5 57	73
Múniá Temple		146 19 8	74
Lora, XVI *		204 14 53	72
Birman h.s.			
Hírápur	h.s.	264 22 23	165
Kishanpur	„	335 32 20	165
Burgpaili, XLI			
Rámgír, XIV †		26 49 55·75	53
Timápúram, XLII		102 14 5·60	54
Rechní, XL		142 8 9·86	50
Jhilera, XXXIX		209 39 14·41	50
Sirkonda, XLIII		258 32 42·01	51
Partábgirí, XVI †		311 27 57·27	52
Chakalipat, XXII			
Nisání, XXIII		32 55 52·99	28
Jámrí, XXI		100 36 15·50	26
Khara, XIX		142 23 18·48	25
Sítápár, XX		180 37 8·18	25
Hill S_2		193 8 27	130
Úpáskata, XXIV		312 46 0·83	31

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
Chaneri h.s.			
Rangín Khápa	h.s.	16 38 43	171
Deodúngar	„	90 33 2	172
Ghúterá	„	171 59 42	170
Gúnsá	„	222 29 57	151
Manori No. 1	„	280 3 55	151
Manori No. 2	„	281 15 53	177
Kútiá	„	340 8 55	152
Chauragarh h.s.			
Manori No. 1	h.s.	47 12 56	155
Tálla, IX		262 58 16	156
Kariápahár, XII		337 16 42	155
Chhindwara s.			
Úmarpat-har	h.s.	52 9 8	176
Sondiá	„	97 46 22	176
Chirwai h.s.			
Garad-kí-Toria	h.s.	149 10 27	71
Kalúmar, XII *		223 40 8	69
Koní Hill Mark		356 20 59	69
Koní	„	357 19 35	70
Deodungar h.s.			
Sondiá	h.s.	41 28 15	174
Ghúterá	„	243 8 44	172
Chaneri	„	270 28 17	172
Rangín Khápa	„	333 39 25	173
Dhas, XXV			
Partábgarh, XXVII		78 32 32·15	33
Nisání, XXIII		132 47 36·51	32
Úpáskata, XXIV		217 49 49·57	32
Dhukri, XIII			
Kharikona, XV		66 4 35·87	15
Sarandi Pat, XI		112 56 15·10	14
Banorí, X		158 40 37·89	14
Diwai, XXXIII			
Sonda, XXXVI		41 41 14·83	47
Ámbágarh, XXXI		154 17 56·30	42
Rájulí, XXX		206 28 58·09	40
Ghot, XXXIV		276 16 48·22	40
Ankora, XXXV		351 23 17·93	43
Garad-ki-Toria h.s.			
Kalúmar, XII*		274 16 22	71
Chirwái	h.s.	329 9 23	71

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
Ghot, XXXIV			
Ankora, XXXV		41 48 59·41	43
Díwai, XXXIII		96 25 16·82	40
Rájulí, XXX		155 18 32·12	39
Theka, XXXII		216 24 38·26	39
Polám Rajúl, XXXVII		340 10 5·40	44
Ghughri * h.s.			
Rámgarhá	h.s.	30 1 16	140
Látgaon	„	58 37 35	141
Bára Hill Mark		122 28 24	157
Sásan-kí-Toria, II		186 47 0	138
Dharmpura Hill Mark		230 47 26	159
Tengan	h.s.	286 5 37	138
Sáliwára No. 2	„	315 12 55	161
Sáliwára No. 1	„	321 54 39	139
Ghutera h.s.			
Deodúngar	h.s.	63 13 10	172
Manori No. 1	„	297 36 22	170
Chaneri	„	351 59 23	170
Gondrei s.			
Sarrá	h.s.	1 21 2	143
Kishanpur	„	50 43 15	144
Hírápur	„	146 18 34	163
Látgaon	„	268 38 3	142
Rámgarhá	„	292 6 38	142
Gordpur s.			
Júnápání	h.s.	20 3 46	186
Sítábaldí Rev. Survey Station		75 3 9	202
Láwá	h.s.	85 13 40	189
Surádí Rev. Survey Station		129 53 55	204
Tikárí No. 2	„	159 12 7	188
Manser Rev. Survey Station		195 4 17	196
Nágárjún	„	214 8 46	187
Baláhí	„	267 5 2	185
Haldolí	„	320 27 5	185
Kolármet Rev. Survey Station		349 41 32	200
Gunsa h.s.			
Chaneri	h.s.	42 33 16	151
Teliá	„	139 17 12	149
Súká Pathárá	„	188 6 21	148
Mundí Toria	„	249 53 52	148
Manori No. 1	„	329 49 28	150
Haldoli h.s.			
Júnápání	h.s.	92 29 0	186
Kolármet Rev. Survey Station		105 27 6	200

* Of the Calcutta Longitudinal Series. † Of the Bider Longitudinal Series.

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
HALDOLI h.s.			
Gordpur	s.	140 32 12	185
Chápgarhí Rev. Survey Station		192 27 3	195
Baláhí	h.s.	200 9 48	184
Ambhorá Rev. Survey Station		227 11 20	194
Bhímsain, XXVI		259 48 44	184
HIRAPUR h.s.			
Kishanpur	h.s.	20 58 7	163
Narsinghpur Jail		26 45 49	168
Narsinghpur Temple		33 23 0	167
Birmán	,,	84 28 34	165
Gondreí	s.	326 16 17	163
Sarrá	h.s.	347 16 47	164
INDRANA No. 1 h.s.			
Kaimúrí Temple		83 58 32	62
Kaimúrí Temple	s.	83 59 21	59
Kántí Temple		93 29 30	58
Katangi Temple		111 58 47	60
Kalúmar	h.s.	113 42 24	56
Lora, XVI*		248 58 27	56
Bichúá	,,	313 2 14	73
INDRANA No. 2 h.s.			
Kalúmar, XII*		113 42 8	66
Gosalpur Hill Mark		281 1 30	65
Karaundí, I		338 6 35	65
JAMBORA h.s.			
Bhímsain, XXVI		15 0 54	182
Rowanwára	h.s.	33 11 41	192
Bhandára	s.	64 54 21	193
Baláhí	h.s.	80 14 45	183
Jámrí, XXI		281 45 0	182
JAMRI, XXI			
Bhímsain, XXVI		45 8 35·78	29
Jamborá	h.s.	101 48 58	182
Khara, XIX		195 40 14·42	26
Sítápár, XX		232 43 19·70	27
Hill S_2		248 57 14	130
Hill S_3		258 4 30	133
Hill S_4		265 35 29	134
Chakálípát, XXII		280 29 59·17	26
Nisání, XXIII		324 46 17·77	28
JHILERA, XXXIX			
Burgpailí, XLI		29 43 17·98	50
Rechní, XL		78 21 40·38	46
Ankora, XXXV		120 20 3·97	45

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
JHILERA, XXXIX			
Polám Rajúl, XXXVII		211 0 6·53	45
Sirkonda, XLIII		328 40 45·45	51
JHUJ h.s.			
Piparíá	h.s.	30 15 28	108
Kalangargar, III		64 33 27	102
Kalangargar	,,	65 19 17	104
Lora, XVI*		119 25 42	102
Bhiláwá	,,	126 16 27	107
Jhiriá Hill Mark		345 44 3	116
JUBBULPORE HOSPITAL s.			
Madan Mahal	h.s.	98 4 45	101
Madár Tekri	,,	169 55 51	100
Karaundí, I		223 31 26	100
JUBBULPORE HOUSE s.			
Katangi	h.s.	57 44 32	92
Madan Mahal	,,	75 22 42	93
Madár Tekri	,,	149 35 48	92
JUBBULPORE s.			
Katangi	h.s.	18 16 57	96
Madan Mahal	,,	72 40 19	96
Madár Tekri	,,	196 1 34	97
JUNAPANI h.s.			
Láwá	h.s.	151 30 36	189
Sítábaldí Rev. Survey Station		172 39 16	202
Gordpur	s.	200 1 36	186
Kolármet Rev. Survey Station		254 29 13	201
Haldolí	h.s.	272 21 43	186
KAIMURI TEMPLE s.			
Kalúmar	h.s.	174 31 16	59
Katangi Temple		212 39 7	60
Dungeriá Temple		229 46 44	61
Indráná No. 1	,,	263 55 37	59
KALANGARGAR, III			
Ballár, V		14 47 19·47	3
Karaundí, I		74 19 59·86	2
Taunrí Hill Mark		136 16 37	110
Lora, XVI*		159 43 54·16	2
Tikárí No. 1	h.s.	238 54 11	112
Jhúj	,,	244 28 37	102
Piparíá	,,	304 38 57	103
Bamní	,,	310 35 44	115
Bhainsá Hill Mark		342 24 12	118

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
KALANGARGAR h.s.			
Taunrí Hill Mark		135 2 14	111
Lora, XVI*		159 27 29	105
Katolá Hill Mark		174 15 11	108
Bhiláwá	h.s.	214 3 10	106
Tikárí No. 1	,,	240 35 39	113
Jhúj	,,	245 14 28	104
Piparíá	,,	305 55 58	104
Bamní	,,	311 31 48	114
KALUMAR, XII*			
Sásan-kí-Toria, II		8·34 7·57	5
Koní Hill Mark		22 42 41	68
Koní	h.s.	23 1 51	67
Chirwáí	,,	43 41 38	69
Garad-kí-Toria	,,	94 18 56	71
Lora, XVI*		265 29 55·69	1
Gosalpur Hill Mark		289 23 11	64
Indráná No. 2	,,	293 38 21	66
Karaundí, I		320 30 27·97	1
Katangi	,,	330 29 32	75
KALUMAR h.s.			
Indráná No. 1	h.s.	293 38 28	56
Múniá Temple		300 58 5	74
Bichúá	,,	304 18 42	72
Kántí Temple		305 37 21	57
Dungeriá Temple		334 36 15	61
Kaimúrí Temple	s.	354 31 4	59
Kaimúrí Temple		356 55 1	62
KARAUNDI, I			
Lapeta, IV		36 36 6·96	4
Jubbulpore Hospital	s.	43 32 19	100
Tengan	h.s.	46 44 8	137
Kumhár-kí-Toria Temple		51 12 10	99
Katangi	,,	60 11 35	76
Jubbulpore Hill Mark		63 49 12	84
Madan Mahal	,,	70 53 19	79
Jubbulpore Church		74 14 40	94
Jubbulpore Kachahrí		74 22 8	88
Jubbulpore School		75 53 29	90
Jubbulpore Jail		78 51 10	86
Sásan-kí-Toria, II		94 14 16·61	5
Madár Tekri	h.s.	103 22 4	77
Kalúmar, XII*		140 36 32·00	1
Indráná No. 2	,,	158 8 52	65
Gosalpur Hill Mark		177 17 10	63
Lora, XVI*		206 22 39·55	1
Kalangargar, III		254 13 37·51	2
Ballár, V		324 32 26·88	3

* Of the Calcutta Longitudinal Series.

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
KARIAPAHAR, XII			
Seoni	s.	35 28 13	180
Amlíwára	h.s.	41 58 45	154
Manori No. 1	„	93 29 31	154
Chhapárá Building		146 24 11	181
Chaurágarh	„	157 18 35	155
Tálla, IX		230 55 49·13	17
Sarandí Pat, XI		272 17 47·01	17
Sirrájharí, XIV		321 58 8·96	18
Dalál-ká-Pahár Hill Mark		357 6 59	125
KATANGI h.s.			
Madan Mahal	h.s.	94 51 33	78
Kalúmar, XII*		150 34 8	75
Jubbulpore Temple No. 1		177 14 15	80
Jubbulpore Temple No. 2		181 43 25	82
Gosalpur Hill Mark		190 52 44	75
Madár Tekri	h.s.	196 43 19	77
Jubbulpore	s.	198 16 50	96
Jubbulpore Church		201 59 16	95
Jubbulpore School		204 6 55	90
Jubbulpore Jail		210 14 36	86
Jubbulpore Kachahrí		215 28 56	89
Jubbulpore House	s.	237 43 49	92
Karaundí, I		240 10 9	76
KHAMMARIA h.s.			
Kútiá	h.s.	88 54 14	178
Manori No. 2	„	166 10 29	178
KHARA, XIX			
Jámrí, XXI		15 41 40·92	26
Bhajiadand, XVII		146 32 35·33	24
Lingmára, XVI		185 18 53·89	22
Hill S_1		197 5 42	129
Sítápár, XX		273 20 12·43	22
Hill S_3		292 7 31	131
Hill S_4		311 0 22	134
Chakálípát, XXII		322 18 26·68	25
Hill S_5		327 42 46	132
KHARIKONA, XV			
Lingmára, XVI		16 35 43·42	19
Dungaríá Tree		34 4 40	126
Sirrájhari, XIV		70 51 2·66	16
Hill Rock		123 28 40	123
Sarandí Pat, XI		150 22 20·04	15
Dhúkrí, XIII		245 59 13·49	15
Líla, XVIII		318 49 20·64	20
KISHANPUR h.s.			
Teliá	h.s.	6 1 23	147
KISHANPUR h.s.			
Birmán	h.s.	155 35 39	165
Narsinghpur Temple		183 51 41	166
Narsinghpur Jail		193 16 58	169
Hírápur	„	200 55 15	163
Gondreí	s.	230 38 6	144
Sarrá	h.s.	289 16 50	144
Súká Pathárá	„	332 18 22	145
KONI h.s.			
Bára Hill Mark		56 38 11	158
Chirwáí	h.s.	177 19 40	70
Kalúmar, XII*		203 0 26	67
Sásan-ki-Toria, II		353 46 26	67
KOTALI, VIII			
Banorí, X		18 57 19·27	9
Malpathár	h.s.	41 58 7	120
Kúsam Bara, VI		68 50 50·51	8
Ballár, V		121 47 48·56	8
KUSAM BARA, VI			
Tálla, IX		16 2 2·97	10
Múnda, VII		76 23 49·38	11
Lapeta, IV		153 11 8·41	7
Ballár, V		208 42 28·98	7
Kotálí, VIII		248 42 7·13	8
Banorí, X		310 51 57·25	9
KUTIA h.s.			
Rangín Khápa	h.s.	107 44 44	171
Chanerí	„	160 11 36	152
Manori No. 2	„	206 49 7	177
Manori No. 1	„	208 44 2	152
Amlíwára	„	264 23 51	153
Khammariá	„	268 49 38	178
LAPETA, IV			
Múnda, VII		9 7 25·43	11
Sásan-ki-Toria, II		145 5 18·15	6
Jubbulpore Hill Mark		213 59 28	84
Karaundí, I		216 32 40·77	4
Ballár, V		280 7 50·70	4
Kúsam Bara, VI		333 7 6·69	7
LATGAON h.s.			
Gondreí	s.	88 42 17	142
Ghughrí	h.s.	238 35 15	141
Rámgarhá	„	348 32 30	141
LAWA h.s.			
Pilkápár	h.s.	132 50 58	191
Tikárí No. 2	„	203 24 16	190
Surádí Rev. Survey Station		239 43 9	203
Gordpur	s.	265 8 31	189
Júnápání	h.s.	331 27 37	189
LILA, XVIII			
Sítápár, XX		5 7 30·06	21
Lingmára, XVI		68 41 47·81	20
Kharíkona, XV		138 52 48·04	20
LINGMARA, XVI			
Khara, XIX		5 19 32·23	22
Dungaríá Tree		63 28 32	127
Bhajiadand, XVII		73 38 53·92	23
Sirrájharí, XIV		135 29 32·86	19
Kharíkona, XV		196 33 56·33	19
Líla, XVIII		248 36 34·83	20
Sítápár, XX		328 40 2·08	21
Hill S_1		357 54 59	128
LORA, XVI*			
Bichúá	h.s.	24 17 33	72
Karaundí, I		26 26 42·77	1
Indráná No. 1	„	69 4 50	56
Kánti Temple		73 41 15	57
Kalúmar, XII*		85 40 6·68	1
Bhiláwá	„	295 53 17	106
Jhúj	„	299 18 31	102
Katolá Hill Mark		320 41 34	109
Kalangargar	„	339 25 7	105
Kalangargar, III		339 41 32·91	2
Taunrí Hill Mark		354 21 47	110
MADAN MAHAL h.s.			
Jubbulpore Temple No. 1		224 42 20	80
Madár Tekri	h.s.	226 31 48	78
Jubbulpore Temple No. 2		227 0 6	82
Karaundí, I		250 51 8	79
Jubbulpore	s.	252 39 27	96
Jubbulpore House	„	255 21 14	93
Katangi	h.s.	274 50 48	78
Jubbulpore Hospital	s.	278 3 27	101
Kumhár-ki-Toria Temple		280 5 16	98
MADAR TEKRI h.s.			
Kumhár-ki-Toria Temple		2 51 19	98
Jubbulpore School		9 22 43	91
Jubbulpore	s.	16 1 47	97
Katangi	h.s.	16 43 39	77

* Of the Calcutta Longitudinal Series.

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
MADAR TEKRI h.s.			
Jubbulpore Temple No. 2		45 22 16	83
Madan Mahal	h.s.	46 32 53	78
Jubbulpore Temple No. 1		50 28 26	81
Karaundí, I		283 20 58	77
Jubbulpore House	s.	329 35 25	92
Jubbulpore Hospital	„	349 55 38	100
Jubbulpore Kachahrí		355 3 13	88
Jubbulpore Jail		356 29 36	87
MALPATHAR h.s.			
Kotálí, VIII		221 54 52	120
Mandla	s.	298 17 14	121
Mandla Temple		309 47 35	122
Banorí, X		355 37 38	120
MANDLA s.			
Banorí, X		36 11 43	121
Malpathár	h.s.	118 20 0	121
MANORI No. 1 h.s.			
Kútiá	h.s.	28 47 27	152
Chanerí	„	100 10 1	151
Ghúterá	„	117 42 47	170
Gúnsá	„	149 52 15	150
Mundí Toria	„	201 38 51	150
Chaurágarh	„	227 8 32	155
Chhapárá Building		227 51 19	181
Kariápahár, XII		273 23 14	154
Seoni	s.	316 1 11	179
Amliwára	h.s.	346 16 13	153
MANORI No. 2 h.s.			
Kútiá	h.s.	26 52 14	177
Chanerí	„	101 21 41	177
Khammariá	„	346 9 0	178
MUNDA, VII			
Lapeta, IV		189 5 56·04	11
Kúsam Bara, VI		256 18 20·72	11
Tálla, IX		315 35 25·41	12
MUNDI TORIA h.s.			
Manori No. 1	h.s.	21 41 32	150
Gúnsá	„	69 59 20	148
Súká Pathárá	„	111 46 32	146
Sarrá	„	153 52 48	146

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
NAGARJUN h.s.			
Gordpur	s.	34 12 1	187
Tikárí No. 2	h.s.	103 55 12	188
Bandarborí Rev. Survey Station		243 36 53	198
Balálhí	h.s.	314 54 28	187
NISANI, XXIII			
Partábgarh, XXVII		27 31 32·04	30
Bhímsain, XXVI		87 6 44·96	29
Jámrí, XXI		144 49 56·83	28
Hill S_4		208 2 4	135
Chakálipát, XXII		212 53 17·38	28
Úpáskata, XXIV		264 25 2·84	31
Dhás, XXV		312 44 15·65	32
PARASGAON, XXIX			
Rájulí, XXX		39 43 19·38	37
Sáthbainí, XXVIII		89 21 25·19	35
Bhímsain, XXVI		149 41 14·38	34
Partábgarh, XXVII		193 43 53·40	34
Theka, XXXII		325 44 6·22	38
PARTABGARH, XXVII			
Parasgáon, XXIX		13 45·18·30	34
Sáthbainí, XXVIII		62 19 24·17	36
Bhímsain, XXVI		118 2 5·99	30
Nisání, XXIII		207 29 20·17	30
Dhás, XXV		258 27 0·67	33
PARTABGIRI, XVI*			
Rámgír, XIV*		84 2 37·07	53
Burgpailí, XLI		131 33 59·02	52
Sironcha Mark		168 30 37	136
Sirkonda, XLIII		191 0 37·37	52
PILKAPAR h.s.			
Tikárí No. 2	h.s.	251 39 11	191
Láwá	„	312 46 40	191
PIPARIA h.s.			
Bhainsá Hill Mark		7 23 20	119
Kalangargar, III		124 41 26	103
Kalangargar	h.s.	125 58 26	104
Tikárí No. 1	„	170 2 27	112
Jhúj	„	210 13 7	103
Jhiriá Hill Mark		283 39 8	116
POLAM RAJUL, XXXVII			
Jhilera, XXXIX		31 3 21·31	45
Ankora, XXXV		77 42 13·93	44
Ghot, XXXIV		160 12 13·01	44

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
RAJULI, XXX			
Díwai, XXXIII		26 33 11·66	40
Ámbágarh, XXXI		96 37 44·05	41
Sáthbainí, XXVIII		152 2 51·60	37
Parasgáon, XXIX		219 37 23·15	37
Theka, XXXII		272 24 32·12	38
Ghot, XXXIV		335 14 12·02	39
RAMGARHA h.s.			
Sarrá	h.s.	49 3 4	143
Gondreí	s.	112 11 16	142
Látgaon	h.s.	168 32 54	141
Ghughrí	„	209 59 20	140
Sáliwára No. 1	„	253 32 6	140
RAMGIR, XIV*			
Timápúram, XLII		161 35 44·89	55
Burgpailí, XLI		206 46 44·66	53
Partábgirí, XVI*		263 53 28·43	53
RANGIN KHAPA h.s.			
Úmarpat-har	h.s.	67 56 22	175
Sondiá	„	95 24 51	174
Deodúngar	„	153 42 24	173
Chanerí	„	196 36 57	171
Kútiá	„	287 40 17	171
RAUTA, XXXVIII			
Sonda, XXXVI		184 23 58·39	48
Ankora, XXXV		241 12 20·41	48
Rechní, XL		302 56 44·34	49
RECHNI, XL			
Timápúram, XLII		20 50 46·26	54
Rauta, XXXVIII		122 59 50·21	49
Ankora, XXXV		206 27 27·96	46
Jhilera, XXXIX		258 13 20·99	46
Burgpailí, XLI		322 3 57·85	50
ROWANWARA h.s.			
Balálhí	h.s.	132 11 10	192
Bhandára	s.	143 41 42	193
Jamborá	h.s.	213 9 3	192
SALIWARA No. 1 h.s.			
Rámgarhá	h.s.	73 35 54	140
Ghughrí	„	141 56 31	139
Tengan	„	213 22 14	139

* Of the Bider Longitudinal Series.

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
Saliwara No. 2 h.s.			
Ghughrí	h.s.	135 15 7	161
Tengan	„	205 50 44	161
Piparíá Hill Mark		277 46 45	162
Sarandi Pat, XI			
Sirrájharí, XIV		15 40 27·16	16
Kariápahár, XII		92 26 46·83	17
Tálla, IX		159 45 21·69	13
Banorí, X		218 58 14·26	13
Dhúkrí, XIII		292 47 20·56	14
Kharíkona, XV		330 18 50·10	15
Hill Rock		358 3 51	124
Sarra h.s.			
Súká Pathárá	h.s.	36 57 21	145
Kishanpur	„	109 21 52	144
Narsinghpur Temple		138 1 33	166
Narsinghpur Jail		141 3 59	168
Hírápur	„	167 18 57	164
Gondreí	s.	181 20 55	143
Rámgarhá	h.s.	228 58 19	143
Mundí Toria	„	333 50 16	146
Sasan-ki-Toria, II			
Ghughrí	h.s.	6 47 30	138
Bára Hill Mark		86 13 46	157
Koní	„	173 46 49	67
Koní Hill Mark		174 16 31	68
Kalúmar, XII*		188 33 5·62	5
Gosalpur Hill Mark		234 52 55	63
Karaundí, I		274 7 12·95	5
Jubbulpore Hill Mark		276 23 39	85
Jubbulpore Church		278 24 19	94
Lapeta, IV		325 1 42·35	6
Dharmpura Hill Mark		328 34 22	159
Tengan	h.s.	334 37 6	137
Sathbaini, XXVIII			
Ámbágarh, XXXI		40 57 55·64	41
Bhímsain, XXVI		203 48 32·23	35
Partábgarh, XXVII		242 8 10·91	36
Parasgáon, XXIX		269 11 40·32	35
Rájulí, XXX		331 59 7·32	37
Seoni s.			
Amlíwára	h.s.	51 18 22	179
Manori No. 1	„	136 4 56	179
Kariápahár, XII		215 25 41	180

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
Sirkonda, XLIII			
Partábgirí, XVI†		11 1 57·22	52
Sironcha Mark		40 5 54	136
Burgpailí, XLI		78 40 7·26	51
Jhilera, XXXIX		148 44 10·59	51
Sirrajhari, XIV			
Bhajiadand, XVII		4 51 30·62	23
Dalál-ká-Pahár Hill Mark		109 24 33	125
Kariápahár, XII		142 4 47·89	18
Sarandí Pat, XI		195 38 10·21	16
Hill Rock		209 41 44	123
Kharíkona, XV		250 45 18·03	16
Lingmára, XVI		315 25 37·00	19
Dungaríá Tree		354 46 47	126
Sitapar, XX			
Chakálípát, XXII		0 37 12·08	25
Hill S_3		29 27 1	132
Jámrí, XXI		52 49 42·13	27
Khara, XIX		93 25 9·84	22
Lingmára, XVI		148 44 23·08	21
Líla, XVIII		185 6 40·65	21
Sonda, XXXVI			
Rauta, XXXVIII		4 24 33·69	48
Díwai, XXXIII		221 37 24·24	47
Ankora, XXXV		311 20 38·65	47
Sondia h.s.			
Deodúngar	h.s.	221 23 36	174
Rangín Khápa	„	275 17 13	174
Chhindwára	s.	277 40 56	176
Úmarpat-har	h.s.	307 33 30	175
Suka Pathara h.s.			
Gúnsá	h.s.	8 6 52	148
Teliá	„	74 16 15	147
Kishanpur	„	152 20 59	145
Sarrá	„	216 54 56	145
Mundí Toria	„	291 41 35	146
Talla, IX			
Kariápahár, XII		51 2 40·43	17
Chaurágarh	h.s.	83 7 0	156
Múnda, VII		135 39 20·72	12
Kúsam Bara, VI		196 0 31·00	10
Banorí, X		267 24 22·50	10
Sarandí Pat, XI		339 43 10·43	13

Name of station with azimuths of surrounding points		° ′ ″	No. of triangle giving distance
Telia h.s.			
Kishanpur	h.s.	186 0 48	147
Súká Pathárá	„	254 13 3	147
Gúnsá	„	319 14 31	149
Tengan h.s.			
Sáliwára No. 2	h.s.	25 51 24	161
Sáliwára No. 1	„	33 23 14	139
Ghughrí	„	106 8 29	138
Sásan-kí-Toria, II		154 39 28	137
Dharmpura Hill Mark		161 27 2	160
Karaundí, I		226 39 26	137
Piparíá Hill Mark		331 31 14	162
Theka, XXXII			
Ghot, XXXIV		36 31 14·27	39
Rájulí, XXX		92 35 34·90	38
Parasgáon, XXIX		145 49 18·03	38
Tikari No. 1 h.s.			
Kalangargar, III		58 56 10	112
Kalangargar	h.s.	60 37 37	113
Bamní	„	345 26 23	114
Piparíá	„	350 1 57	112
Tikari No. 2 h.s.			
Láwá	h.s.	23 27 4	190
Pilkápár	„	71 46 17	191
Bandarborí Rev. Survey Station		273 53 5	198
Nágárjún	h.s.	283 49 36	188
Manser Rev. Survey Station		285 4 7	197
Gordpur	s.	339 9 46	188
Surádí Rev. Survey Station		353 40 34	203
Timapuram, XLII			
Rechní, XL		200 49 11·41	54
Burgpailí, XLI		282 8 20·66	54
Rámgír, XIV †		341 33 14·07	55
Úmarpat-har h.s.			
Sondiá	h.s.	127 36 42	175
Chhindwára	s.	232 6 54	176
Rangín Khápa	h.s.	247 51 56	175
Úpaskata, XXIV			
Dhás, XXV		37 52 42·16	32
Nisání, XXIII		84 31 17·58	31
Chakálípát, XXII		132 49 41·33	31

* Of the Calcutta Longitudinal Series. † Of the Bider Longitudinal Series.

August 1877.

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

CO-ORDINATES AND DESCRIPTIONS OF ALL STATIONS AND POINTS.

JABALPUR MERIDIONAL SERIES.

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

NOTE.—λ stands for Latitude North; L for Longitude East of Greenwich; H for Height of station in feet above mean sea level determined trigonometrically, and *h* for height of station pillar. For visited stations and for other points of superior accuracy the values of λ and L are given to two places of decimals; for well determined objects to one place, and for the remaining points to the nearest second. Principal stations are distinguished by the Roman numerals I, II, &c.; secondary stations by the letters h.s. and s.

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Ámbágarh (Ámbagarh), XXXI. (*Vide page 7—E.*) λ 20 15 42·64 L 79 21 34·78 H 1214 *h* 9 No. 41	**Ankora, XXXV.** (*Vide page 8—E.*) λ 19 24 34·75 L 79 38 54·88 H 1463 *h* 4 No. 43	**Baláhí h.s.** (*Bhandára*) λ 21 11 47·58 L 79 36 42·03 H 1322 No. 183
Ambhorá Revenue Survey Station, (*Nágpur*) On hill. λ 21 1 28·28 L 79 37 58·36 No. 194	**Bainrá h.s.** (*Mandla*) On a short ridge rising from a group of low flat hills about 100 feet higher than the surrounding undulations, in the land of Múnglí village, which lies about 1 mile to the north, 1 mile W. of Dúngariá, 2 miles N.E. of Madhopur village, and 4 miles S. of Rámnagar town; pargana Mandla. Marked by a paká triangular pillar 2 feet high, with mark-stones at top and bottom, and surrounded by an earthwork platform. λ 22 33 25·64 L 80 32 30·55 H 2092 See Synoptical Vol. of the Bilaspur Meridional Series.	**Ballár, V.** (*Vide page 4—E.*) λ 22 56 27·69 L 80 13 5·70 H 2129 *h* 11 No. 8
Amlíwára h.s. (*Seoni*) On a low range of hills about ¼ of a mile S.E. of the village of Erepá. λ 22 0 53·87 L 79 28 54·65 H 2126 No. 153		**Bamní h.s.** (*Jubbulpore*) λ 23 8 58·43 L 80 25 47·01 Nos. 114, 115

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

Bandarborí Revenue Survey Station,
(*Nágpur*) On hill.

	o ′ ″
λ	21 25 26·19
L	79 29 23·47

Nos. 198, 199

Banorí, X.
(*Vide page 4—E.*)

λ	22 28 36·08
L	80 18 51·93
H	2393
h	3

No. 9

Bára Hill Mark.
(*Jubbulpore*)

λ	23 10 53·05
L	79 28 9·13

Nos. 157, 158

Bhaïnsá Hill Mark.
(*Mandla*)

λ	23 0 39·72
L	80 23 12·70

Nos. 118, 119

Bhajiadand, XVII.
(*Vide page 5—E.*)

λ	21 39 48·60
L	79 58 15·91
H	1680
h	3

No. 23

Bhakália-kí-Toria Tree,
(*Jubbulpore*) On hill.

λ	23 12 52
L	79 45 15

Bhandára s.
(*Bhandára*) On the centre of the roof of the kachahrí, which is 21 feet high, and is marked by a dot and two concentric circles.

λ	21 9 21·60
L	79 41 43·17
H	854

No. 193

Bhiláwá h.s.
(*Jubbulpore*) On a low range of hills E. of Gosalpur and N. of Lálpur village.

λ	23 24 3·98
L	80 24 56·99

Nos. 106, 107

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

Bhímgarh Hill Mark.
(*Nágpur*)

	o ′ ″
λ	21 28 54·89
L	79 12 43·17

Bhímsain, XXVI.
(*Vide page 6—E.*)

λ	20 57 35·96
L	79 48 34·58
H	1490
h	7

No. 29

Bhupalpatnam Hill Mark.
(*Upper Godávarí*)

λ	18 46 23·66
L	80 24 5·32

See Synoptical Vol. of the Bider Longitudinal Series.

Bichúá h.s.
(*Jubbulpore*)

λ	23 15 57·91
L	80 5 42·18

Nos. 72, 73

Birmán (Barmán) h.s.
(*Narsinghpur*) About 3 miles N.E. of the village of the same name. The natives call it by the name of Bitolí-kí-Toria. The station should properly be called Bitolí as that village is right under the hill.

λ	23 5 7·33
L	79 4 24·03

No. 165

Burgpailí, XLI.
(*Vide page 8—E.*)

λ	18 54 7·20
L	79 44 4·14
H	983
h	5

No. 50

Chakálípát, XXII.
(*Vide page 6—E.*)

λ	21 9 19·44
L	80 21 42·80
H	1733
h	3

No. 25

Chanerí h.s.
(*Chhindwára*) On the hill lying a couple of miles W. of the village of the same name, and is identical with the old station of that name.

λ	22 17 50·09
L	79 9 4·56
H	3408

No. 151

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

Chápgarhí Revenue Survey Station,
(*Nágpur*) On hill.

	o ′ ″
λ	21 4 27·82
L	79 32 16·02

No. 195

Chargaon h.s.
(*Mandla*) On the southern portion of a widely extended range of flat hills, about 1 mile W. of village of this name, the same distance N. of Jamúnpání, and 2 miles S. of Bhandárta; pargana Mandla. Marked by a triangular paká pillar 2 feet high, with mark-stones at top and bottom, and surrounded by an earthwork platform.

λ	22 40 33·75
L	80 28 35·37
H	1919

See Synoptical Vol. of the Biláspur Meridional Series.

Chaurágarh h.s.
(*Seoní*) About a mile N.E. of the small village of Jamanpání.

λ	22 25 12·78
L	79 36 49·98
H	2183

No. 155

Chhapárá Building.
(*Seoní*) Centre of white square building N.E. of town.

λ	22 23 32·0
L	79 35 7·6

No. 181

Chhindwára s.
(*Chhindwára*) 100 yards E. of the kachahrí building. A peg with centrical dot denotes the station.

λ	22 3 8·34
L	78 58 45·41
H	2236

No. 176

Chinúr Temple.
(*Hyderabad, Deccan*) In táluk Rámgír.

λ	18 51 20·8
L	79 50 9·3

See Synoptical Vol. of the Bider Longitudinal Series.

Chirwáí h.s.
(*Damoh*)

λ	23 24 12·83
L	79 43 3·85

Nos. 69, 70

Dalál-ká-Pahár Hill Mark (heliotrope).
(*Seoní*)

λ	21 58 37·26
L	79 42 36·87

No. 125

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

Deodúngar h.s.
(*Chhindwára*) About a mile S.W. of the village of Khúrsená, and is identical with the old station of that name.

	° ′ ″
λ	22 17 56·32
L	78 56 34·04
H	3224

Nos. 172, 173

Dharmpura Hill Mark.
(*Jubbulpore*)

λ	23 6 1·48
L	79 48 6·55

Nos. 159, 160

Dhás, XXV.
(*Vide page 6—E.*)

λ	20 50 42·60
L	80 23 52·63
H	1620
h	4

No. 32

Dhúkrí, XIII.
(*Vide page 5—E.*)

λ	22 4 1·96
L	80 29 11·23
H	2734
h	4

No. 14

Díwai, XXXIII.
(*Vide page 7—E.*)

λ	19 49 32·57
L	79 34 55·80
H	967
h	5

Nos. 40, 42

Dungaríá Tree.
(*Bhandára*) On hill peak.

λ	21 38 45·7
L	80 0 52·5

Nos. 126, 127

Dungeríá Temple.
(*Jubbulpore*)

λ	23 24 13·3
L	79 48 43·7

No. 61

Garad-kí-Toria h.s.
(*Damoh*) On a plateau, and is known by the name of Gárur-kí-Ghútiá.

λ	23 28 19·05
L	79 40 24·55

No. 71

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

Garha Fort.
(*Jubbulpore*) Madan Mahal.

	° ′ ″
λ	23 8 52
L	79 56 36

Ghot, XXXIV.
(*Vide page 7—E.*)

λ	19 46 54·45
L	79 59 56·96
H	1044
h	8

No. 39

Ghughrí h.s.
(*Jubbulpore*)

λ	23 2 9·88
L	79 42 59·56

No. 138

Ghúterá h.s.
(*Chhindwára*) On a high peak, 1 mile W. of the village of the same name.

λ	22 23 25·40
L	79 8 13·85

No. 170

Godam Ishwar Pagoda.
(*Hyderabad, Deccan*) In táluk Rámgír.

λ	18 40 10·2
L	79 43 22·1

See Synoptical Vol. of the Bider Longitudinal Series.

Gondreí s.
(*Narsinghpur*)

λ	22 58 27·90
L	79 25 59·64

No. 142

Gordpur s.
(*Nágpur*)

λ	21 10 48·31
L	79 15 33·89
H	973

No. 185

Gosalpur Hill Mark.
(*Jubbulpore*)

λ	23 23 5·35
L	80 1 32·24

Nos. 63, 64

Gosalpur h.s.
(*Jubbulpore*) On staircase of building.

λ	23 23 57·21
L	80 6 7·51

See Synoptical Vol. of the Calcutta Longl. Series.

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

Gunjápargá Building.
(*Hyderabad, Deccan*) East of a pagoda: in táluk Rámgír.

	° ′ ″
λ	18 41 57·4
L	79 38 47·7

See Synoptical Vol. of the Bider Longitudinal Series.

Gúnsá h.s.
(*Chhindwára*)

λ	22 26 47·52
L	79 17 54·61

Nos. 148, 149

Haldolí h.s.
(*Nágpur*)

λ	20 54 27·99
L	79 29 54·91
H	1195

No. 184

Hill Rock.
(*Seoní*) Conspicuous rock on hill top.

λ	22 3 36
L	80 5 54

Nos. 123, 124

Hill S_1.
(*Bhandára*) Tree.

λ	21 32 10
L	80 10 29

Nos. 128, 129

Hill S_2.
(*Bhandára*) Stone.

λ	21 19 31
L	80 24 15

Nos. 130, 131

Hill S_3.
(*Bhandára*) Tree.

λ	21 14 36
L	80 15 44

Nos. 132, 133

Hill S_4.
(*Bhandára*) Stone.

λ	21 13 41
L	80 22 55

Nos. 134, 135

Hírápur h.s.
(*Narsinghpur*) About 5 miles W. of the village so called. Rohaní is the name of the village nearest to the station.

λ	23 6 32·76
L	79 20 10·10

Nos. 163, 164

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

Iláságar s.
(*Hyderabad, Deccan*) In táluk Rámgír.

	°	′	″
λ	18	40	5·84
L	79	53	10·93

See Synoptical Vol. of the Bider Longitudinal Series.

Indráná No. 1 h.s.
(*Jubbulpore*)

λ	23	24	1·22
L	79	56	22·21

No. 56

Indráná No. 2 h.s.
(*Jubbulpore*)

λ	23	24	1·18
L	79	56	22·35

Nos. 65, 66

Jamborá h.s.
(*Bhandára*)

λ	21	14	29·92
L	79	53	24·12
H	1495		

No. 182

Jámrí, XXI.
(*Vide page 6—E.*)

λ	21	12	21·40
L	80	4	21·22
H	1708		
h	4		

Nos. 26, 27

Jhilera, XXXIX.
(*Vide page 8—E.*)

λ	19	14	50·11
L	79	56	29·45
H	1316		
h	6		

No. 45

Jhiriá Hill Mark.
(*Jubbulpore*)

λ	23	8	48·18
L	80	33	43·51

Nos. 116, 117

Jhúj h.s.
(*Jubbulpore*) On a hill S.W. of village of the same name.

λ	23	20	15·47
L	80	30	34·53

No. 102

Jubbulpore Church,
(*Jubbulpore*) Centre of belfry.

λ	23	9	50·78
L	79	59	1·88

Nos. 94, 95

Jubbulpore Hill Mark.
(*Jubbulpore*)

	°	′	″
λ	23	10	7·70
L	80	0	59·42

Nos. 84, 85

Jubbulpore Hospital s.
(*Jubbulpore*) On north gable of military hospital.

λ	23	8	28·05
L	79	59	54·93

Nos. 100, 101

Jubbulpore House s.
(*Jubbulpore*) On centre of roof of Mr. Watts' paká house.

λ	23	9	46·97
L	80	0	19·58

Nos. 92, 93

Jubbulpore Jail.
(*Jubbulpore*) Flag on gateway.

λ	23	10	10·2
L	79	59	26·9

Nos. 86, 87

Jubbulpore Kachahrí.
(*Jubbulpore*) Flag on roof of Dy. Commissioner's kachahrí.

λ	23	9	58·4
L	79	59	29·8

Nos. 88, 89

Jubbulpore Pediment,
(*Jubbulpore*) Of Magistrate's house.

λ	23	9	38
L	79	59	43

Jubbulpore School,
(*Jubbulpore*) Of Industry, flag on southern gateway.

λ	23	9	57·7
L	79	59	8·3

Nos. 90, 91

Jubbulpore s.
(*Jubbulpore*) G. T. Survey Office station, (Mr. Lumsden's bungalow).

λ	23	9	31·43
L	79	58	49·72
H	1306		

Nos. 96, 97

Jubbulpore Temple No. 1.
(*Jubbulpore*) In city, highest of five, and W. of Temple No. 2.

λ	23	10	34·81
L	79	58	27·31

Nos. 80, 81

Jubbulpore Temple No. 2.
(*Jubbulpore*) In city, higher of two, and E of Temple No. 1.

	°	′	″
λ	23	10	35·06
L	79	58	36·64

Nos. 82, 83

Júnápání h.s.
(*Nágpur*)

λ	20	55	16·61
L	79	9	31·76
H	1311		

No. 186

Kaimúrí Temple.
(*Jubbulpore*)

λ	23	23	7·0
L	79	47	7·6

No. 62

Kaimúrí Temple s.
(*Jubbulpore*)

λ	23	23	8·33
L	79	47	20·48

No. 59

Kalangargar, III.
(*Vide page 4—E.*)

λ	23	14	52·36
L	80	18	20·58
H	1994		
h	9		

No. 2

Kalangargar h.s.
(*Jubbulpore*)

λ	23	15	3·68
L	80	18	21·22

Nos. 104, 105

Kalúmar, XII. Of the Cal. Longl. Series.
(*Vide page 3—E.*)

λ	23	27	52·28
L	79	46	50·98
H	2467		
h	3		

No. 1

Kalúmar h.s.
(*Damoh*) This station is not in existence. It was situated 8 feet N.N.W. of Kalúmar, XII.

λ	23	27	52·36
L	79	46	50·95
H	2467		

See Synoptical Vol. of the Calcutta Longl. Series.

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

Kamptee Church,
(*Nágpur*) Steeple.

	o ′ ″
λ	21 13 15·7
L	79 13 40·7
H	1019

Kántí Temple.
(*Jubbulpore*)

λ	23 24 14·8
L	79 52 19·7

Nos. 57, 58

Karaundí, I.
(*Vide page 3—E.*)

λ	23 10 40·02
L	80 2 10·52
H	1625
h	3

No. 1

Kariápahár, XII.
(*Vide page 5—E.*)

λ	22 14 13·99
L	79 41 46·28
H	2377
h	2

No. 17

Katangi h.s.
(*Jubbulpore*)

λ	23 8 44·78
L	79 58 33·05
H	1394

Nos. 75, 76

Katangi Temple.
(*Jubbulpore*)

λ	23 26 30·5
L	79 49 40·9

No. 60

Katolá Hill Mark.
(*Jubbulpore*)

λ	23 24 5·96
L	80 17 22·11

Nos. 108, 109

Khammariá h.s.
(*Seoni*) On the low range of hills running N.E. of the village of the same name, and is identical with the old station of that name.

λ	21 59 57·56
L	79 28 20·58
H	2126

No. 178

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

Khara, XIX.
(*Vide page 6—E.*)

	o ′ ″
λ	21 25 35·54
L	80 8 19·18
H	2000
h	4

Nos. 22, 24

Kharíkona, XV.
(*Vide page 5—E.*)

λ	21 58 5·52
L	80 14 51·30
H	2270
h	3

No. 15

Kishanpur h.s.
(*Narsinghpur*) About 3 miles E. of the village of the same name.

λ	22 48 19·78
L	79 12 38·32

No. 144

Kistnápett Hill Mark.
(*Hyderabad, Deccan*) In táluk Rámgír.

λ	18 54 7·23
L	79 44 4·13

See Synoptical Vol. of the Bider Longitudinal Series.

Kolármet Revenue Survey Station.
(*Nágpur*) On hill.

λ	20 57 31·05
L	79 18 8·26

Nos. 200, 201

Koní Hill Mark.
(*Jubbulpore*) Also determined by Revenue Survey.

λ	23 20 8·41
L	79 43 20·74

No. 68

Koní h.s.
(*Jubbulpore*)

λ	23 20 6·01
L	79 43 16·34

No. 67

Kotálí, VIII.
(*Vide page 4—E.*)

λ	22 48 51·57
L	80 26 21·09
H	2260
h	3

No. 8

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

Kumhár-kí-Toria Temple,
(*Jubbulpore*) Spire, on hillock near Jubbulpore Cantonment.

	o ′ ″
λ	23 8 28·32
L	79 59 13·40

Nos. 98, 99

Kúsam Bara, VI.
(*Vide page 4—E.*)

λ	22 40 43·98
L	80 3 47·48
H	1974
h	3

No. 7

Kútiá h.s.
(*Chhindwára*) About 2 miles N.N.E. of the village of the same name, and is identical with the old station of that name.

λ	21 59 43·98
L	79 16 5·00
H	2097

No. 152

Lapeta, IV.
(*Vide page 4—E.*)

λ	22 59 44·35
L	79 53 24·68
H	1895
h	3

Nos. 4, 6

Látgaon h.s.
(*Narsinghpur*)

λ	22 58 41·91
L	79 36 51·38

No. 141

Láwá h.s.
(*Nágpur*)

λ	21 9 40·21
L	79 1 11·98
H	1311

Nos. 189, 190

Líla, XVIII.
(*Vide page 5—E.*)

λ	21 48 11·27
L	80 24 7·71
H	2599
h	4

No. 20

Lingmára, XVI.
(*Vide page 5—E.*)

λ	21 43 3·07
L	80 10 3·48
H	1400
h	4

No. 19

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

Lora, XVI. Of the Calcutta Longl. Series.
(*Vide page 3—E.*)

	o ′ ″
λ	23 29 41·53
L	80 12 24·50
H	1923
h	4

No. 1

Madan Mahal h.s.
(*Jubbulpore*)

λ	23 8 53·73
L	79 56 39·08
H	1540

Nos. 78, 79

Madár Tekri h.s.
(*Jubbulpore*)

λ	23 11 16·91
L	79 59 22·49

No. 77

Mahádeopur s.
(*Hyderabad, Deccan*) On staircase of palace: in táluk Rámgír.

λ	18 43 43·61
L	80 1 48·68

See Synoptical Vol. of the Bider Longl. Series.

Mahárájpur s.
(*Mandla*) On Munná Lál Chaudhrí's paká house in the town of Mahárájpur, 50 yards from and on the left bank of the Nerbudda river. A ⊙ cut on the roof over gateway, denotes the station.

λ	22 35 8·47
L	80 24 26·68
H	1479

See Synoptical Vol. of the Biláspur Meridl. Series.

Mahárájpur Temple,
(*Mandla*) Spire of the highest of a group of white temples.

λ	22 35 6·3
L	80 24 26·2

See Synoptical Vol. of the Biláspur Meridl. Series.

Májgúá Temple.
(*Jubbulpore*)

λ	23 24 57·4
L	80 14 33·0

See Synoptical Vol. of the Calcutta Longl. Series.

Malánágutta Hill Mark.
(*Hyderabad, Deccan*) In táluk Rámgír.

λ	18 45 26·78
L	79 41 48·73

See Synoptical Vol. of the Bider Longl. Series.

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

Malpathár h.s.
(*Mandla*)

	o ′ ″
λ	22 40 9·08
L	80 17 54·91

No. 120

Mandla Fort.
(*Mandla*) Bastion of ruined fort on water's edge, at the confluence of the Nerbudda and Binjár rivers.

λ	22 35 13·5
L	80 24 43·6
H	1487

See Synoptical Vol. of the Biláspur Meridl. Series.

Mandla House.
(*Mandla*) Flag on the highest part of the Civil Surgeon's paká house.

λ	22 36 4·3
L	80 24 34·4
H	1473

See Synoptical Vol. of the Biláspur Meridl. Series.

Mandla Masjid,
(*Mandla*) Spire of dome.

λ	22 35 15·5
L	80 24 42·2

See Synoptical Vol. of the Biláspur Meridl. Series.

Mandla s.
(*Mandla*) On a tank bank about ¼ a mile N. of the civil station of Mandla, in the grounds of the village of Lálipur in the Mandla plains.

λ	22 36 32·89
L	80 25 7·29
H	1458

No. 121

Mandla Temple.
(*Mandla*) Highest of a group of five, on left bank of the Nerbudda river.

λ	22 35 6·3
L	80 24 26·2

No. 122

Manori No. 1 h.s.
(*Chhindwára-Seoni*) About a mile N.E. of the old station of that name.

λ	22 15 9·71
L	79 25 10·40
H	2749

No. 150

Manori No. 2 h.s.
(*Seoni*) On the hill which lies 2 miles N. of the village of the same name, and is identical with the old station of Manori.

λ	22 14 59·24
L	79 24 22·19
H	2774

No. 177

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

Manser Revenue Survey Station,
(*Nágpur*) On hill.

	o ′ ″
λ	21 24 8·64
L	79 19 24·04

Nos. 196, 197

Mantání s.
(*Hyderabad, Deccan*) In fort so called: in táluk Rámgír.

λ	18 39 1·49
L	79 42 18·60

See Synoptical Vol. of the Bider Longl. Series.

Múnda, VII.
(*Vide page 4—E.*)

λ	22 37 31·66
L	79 49 34·12
H	2038
h	3

No. 11

Mundí Toria h.s.
(*Chhindwára-Seoni*) About a mile W. of the village of Paháří and 3 miles N.E. of that of Baksí.

λ	22 31 38·74
L	79 32 13·02

No. 146

Múniá Temple.
(*Jubbulpore*)

λ	23 18 22·1
L	80 3 58·2

No. 74

Nágárjún h.s.
(*Nágpur*)

λ	21 23 10·71
L	79 24 31·67
H	1504

No. 187

Narsinghpur Jail (heliotrope).
(*Narsinghpur*)

λ	22 56 34·83
L	79 14 44·51

Nos. 168, 169

Narsinghpur Temple,
(*Narsinghpur*) Spire, in city.

λ	22 56 49·98
L	79 13 15·50

Nos. 166, 167

Nisání, XXIII.
(*Vide page 6—E.*)

λ	20 58 51·61
L	80 14 29·91
H	2310
h	6

No. 28

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

Pamánur Pagoda.
(*Hyderabad, Deccan*) N. of the Godávarí river: in táluk Rámgír.

	°	′	″
λ	18	41	36·5
L	79	42	51·0

See Synoptical Vol. of the Bider Longl. Series.

Panwání Temple.
(*Jubbulpore*)

λ	23	24	22·8
L	80	14	48·6

See Synoptical Vol. of the Calcutta Longl. Series.

Parasgaon, XXIX.
(*Vide page 7—E.*)

λ	20	32	18·54
L	80	4	19·51
H	1220		
h	2		

No. 34

Pargandi Hill Mark.
(*Hyderabad, Deccan*) In táluk Rámgír.

λ	18	37	10·32
L	79	45	49·57

See Synoptical Vol. of the Bider Longl. Series.

Partábgarh, XXVII.
(*Vide page 7—E.*)

λ	20	47	44·16
L	80	8	20·06
H	1837		
h	8		

Nos. 30, 33

Partábgirí, XVI.*
(*Vide page 9—E.*)

λ	18	38	19·29
L	80	2	48·36
H	1440		
h	8		

No. 52

Pilkápár h.s.
(*Nágpur*)

λ	21	20	27·48
L	78	48	46·72
H	1788		

No. 191

Piparíá Hill Mark.
(*Jubbulpore*)

λ	22	56	30·94
L	79	52	23·26

No. 162

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

Piparíá h.s.
(*Jubbulpore*)

	°	′	″
λ	23	10	50·89
L	80	24	38·33

No. 103

Polám Rajúl, XXXVII.
(*Vide page 8—E.*)

λ	19	30	16·31
L	80	6	16·57
H	732		
h	3		

No. 44

Rájulí, XXX.
(*Vide page 7—E.*)

λ	20	12	55·45
L	79	47	16·45
H	1070		
h	8		

No. 37

Rámgarhá h.s.
(*Narsinghpur*)

λ	22	53	58·84
L	79	37	53·31

No. 140

Rámgír, XIV.*
(*Vide page 9—E.*)

λ	18	35	26·12
L	79	34	9·54
H	1779		
h	8		

Nos. 53, 55

Rámgír s.
(*Hyderabad, Deccan*) On mosque: in táluk Rámgír.

λ	18	34	41·75
L	79	35	32·12

See Synoptical Vol. of the Bider Longitudinal Series.

Rámtek Temple,
(*Nágpur*) On hill.

λ	21	23	53·8
L	79	22	22·8

Rangín Khápa h.s.
(*Chhindwára*) About a mile N. of the village of the same name, and is identical with the old station of that name.

λ	22	3	12·90
L	79	4	23·23
H	2424		

No. 171

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

Rauta, XXXVIII.
(*Vide page 8—E.*)

	°	′	″
λ	19	15	39·30
L	79	21	46·54
H	2107		
h	8		

No. 48

Rechní, XL.
(*Vide page 8—E.*)

λ	19	9	51·24
L	79	31	11·37
H	1015		
h	8		

Nos. 46, 49

Rowanwára h.s.
(*Bhandára*) On the highest point of the hill known by the villagers as Chándí Pahár which is a little distance to the N.E. of the village of Rowanwára. This is one of the stations of the Nágpur Secondary Series.

λ	21	3	53·25
L	79	46	0·43
H	1479		

No. 192

Sáliwára No. 1 h.s.
(*Jubbulpore*) About a mile W.S.W. of the Revenue Survey Point of the same name.

λ	22	56	39·00
L	79	47	39·54

No. 139

Sáliwára No. 2 h.s.
(*Jubbulpore*) Revenue Survey Station, about a mile E.N.E. of Sáliwára No. 1 h.s.

λ	22	57	0·35
L	79	48	31·19

No. 161

Sarandí Pat, XI.
(*Vide page 4—E.*)

λ	22	13	18·98
L	80	5	33·16
H	1627		
h	2		

No. 13

Sarrá h.s.
(*Narsinghpur*)

λ	22	44	6·35
L	79	25	37·74

No. 143

* Of the Bider Longitudinal Series.

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

Sásan-kí-Toria, II.
(*Vide page 3—E.*)

	o ′ ″
λ	23 11 52·69
L	79 44 14·56
H	1361
h	3

No. 5

Sáthbainí, XXVIII.
(*Vide page 7—E.*)

λ	20 31 58·69
L	79 36 32·25
H	1508
h	3

Nos. 35, 36

Seoni s.
(*Seoni*) On the house of Rámchand Patail, which is 24·2 feet high, in the town of the same name. A wooden pin indicates the site of the station.

λ	22 5 32·61
L	79 35 7·72
H	2043

Nos. 179, 180

Sihora Tiled Building.
(*Jubbulpore*)

λ	23 29 1
L	80 9 6

Sirkonda, XLIII.
(*Vide page 9—E.*)

λ	18 58 30·25
L	80 6 56·03
H	1733
h	4

No. 51

Sironcha Fort,
(*Sironcha*) Flag.

λ	18 51 7·3
L	80 0 0·2

See Synoptical Vol. of the Bider Longitudinal Series.

Sironcha Mark.
(*Sironcha*)

λ	18 50 49·09
L	80 0 8·27
H	406

No. 136

Sirrájharí, XIV.
(*Vide page 5—E.*)

λ	21 53 5·71
L	79 59 28·40
H	1926
h	2

Nos. 16, 18

Sítábaldí Revenue Survey Station,
(*Nágpur*) In fort.

	o ′ ″
λ	21 8 49·46
L	79 7 40·06
H	1125

No. 202

Sítápár, XX.
(*Vide page 6—E.*)

λ	21 24 50·54
L	80 21 53·54
H	1237
h	3

No. 21

Sománur Hill Mark.
(*Upper Godávarí*)

λ	18 43 34·03
L	80 18 12·57

See Synoptical Vol. of the Bider Longitudinal Series.

Sonda, XXXVI.
(*Vide page 8—E.*)

λ	19 37 25·33
L	79 23 32·59
H	1382
h	5

No. 47

Sondiá h.s.
(*Chhindwára*) About 3 miles S. of the large village of Umret, and is identical with the old station of that name.

λ	22 4 58·22
L	78 44 16·57
H	2879

No. 174

Súká Pathárá h.s.
(*Chhindwára*) On a hill about 3 miles E.S.E. of the village of Hareí. It is called Súká Pathárá as it lies between the two villages Súká and Pathárá. A platform 7 feet high, with two mark-stones, denotes the station of observation.

λ	22 36 23·81
L	79 19 23·01

No. 145

Surádí Revenue Survey Station,
(*Nágpur*) On hill.

λ	21 14 45·83
L	79 10 30·76

Nos. 203, 204

Tákli Hill Mark.
(*Nágpur*)

λ	20 58 54·20
L	79 21 39·25

Tálla, IX.
(*Vide page 4—E.*)

	o ′ ″
λ	22 27 49·04
L	79 59 47·87
H	1976
h	3

Nos. 10, 12

Taunrí Hill Mark.
(*Jubbulpore*)

λ	23 18 33·33
L	80 13 29·52

Nos. 110, 111

Teliá h.s.
(*Chhindwára*) On a high hill about 2 miles S.E. of the village so called. A platform 3 feet high, with two mark-stones, defines the station of observation.

λ	22 34 12·57
L	79 11 2·06

No. 147

Temple on Hill.
(*Nágpur*)

λ	21 18 31·1
L	79 3 31·7

Tengan h.s.
(*Jubbulpore*)

λ	23 0 14·07
L	79 50 12·57

No. 137

Theka, XXXII.
(*Vide page 7—E.*)

λ	20 11 36·32
L	80 19 15·47
H	1700
h	6

No. 38

Tikárí No. 1 h.s.
(*Jubbulpore*)

λ	23 17 39·46
L	80 23 20·66

Nos. 112, 113

Tikárí No. 2 h.s.
(*Nágpur*)

λ	21 26 44·84
L	79 9 5·76
H	1558

No. 188

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Timápúram, XLII. (*Vide page* 8—E.) ° ′ ″ λ 18 57 45·69 L 79 26 20·99 H 1557 *h* 6 No. 54	Úmarpat-har h.s. (*Chhindwára*) About a mile W. of the village of Nursora. ° ′ ″ λ 21 58 50·23 L 78 52 49·39 H 2472 No. 175	Úpáskata, XXIV. (*Vide page* 6—E.) ° ′ ″ λ 21 0 26·71 L 80 31 55·84 H 1518 *h* 2 No. 31

August 1877.

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

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

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

An Account of the Measurement of two Sections of the Meridional Arc of India, bounded by the parallels of 18° 3′ 5″; 24° 7′ 11″; and 29° 30′ 18″. By Lieut.-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 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, 1879.

Do. IV. The Principal Triangulation, the Great Arc (Section 24°-30°), Rahún, Gurhágarh 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, 1879.

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 Gurhágarh 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.

(*Continued*).

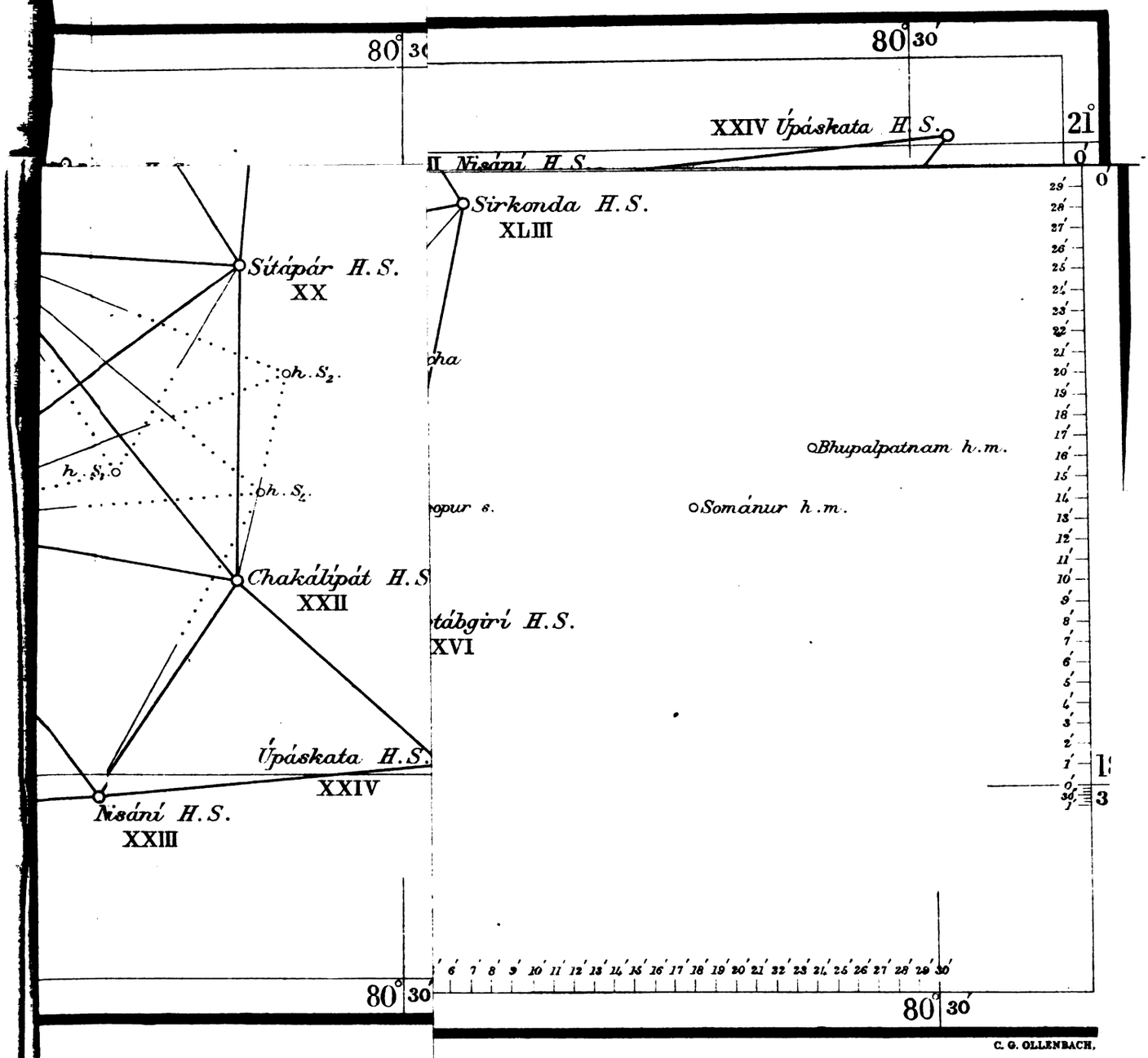
List of Published Works of the Great Trigonometrical Survey of India.—(Continued).

Synopses of the Results of the Great Trigonometrical Survey of India, &c., &c.

Volume VI. The Jogí-Tíla Meridional Series, or Series *G*. and the Sutlej Series, or Series *H*. of the North-West Quadrilateral. By Colonel J. T. Walker, R.E., F.R.S., &., &c., Superintendent of the Survey, and his Assistants. Dehra Dún, 1875.

Do. 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.

9th September 1879.


80° 30′
80° 30′
XXIV Úpáskata H. S.
21° 0′
II Nisání H. S.
Sirkonda H. S.
XLIII
Sítápár H. S.
XX
h. S₂.
h. S₁.
h. S₄.
Bhupalpatnam h.m.
Sománur h.m.
Chakálípát H. S.
XXII
tábgirí H. S.
XVI
Úpáskata H. S.
XXIV
Nisání H. S.
XXIII
80° 30′
80° 30′
C. G. OLLENBACH.

JABALPUR MERIDIONAL

OR

SERIES E

OF THE

SOUTH-EAST QUADRILATERAL