



SYNOPTICAL VOLUME VIII.

G. T. SURVEY OF INDIA

GREAT ARC MERIDIONAL SERIES—SEC. 18° TO 24°.

APPERTAINING TO THE

SOUTH-EAST QUADRILATERAL.

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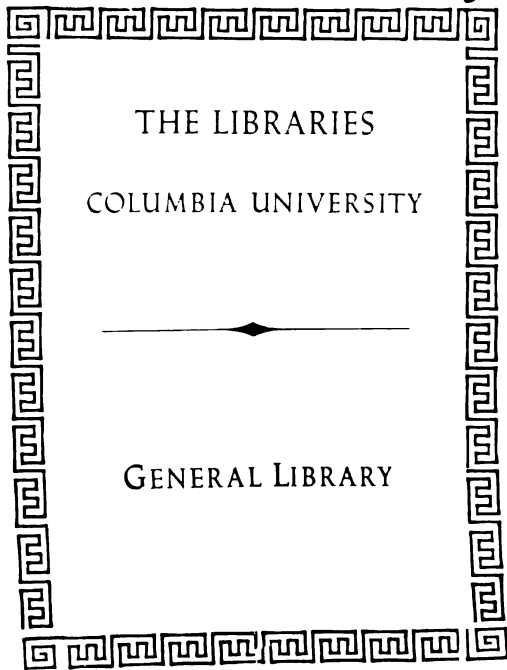
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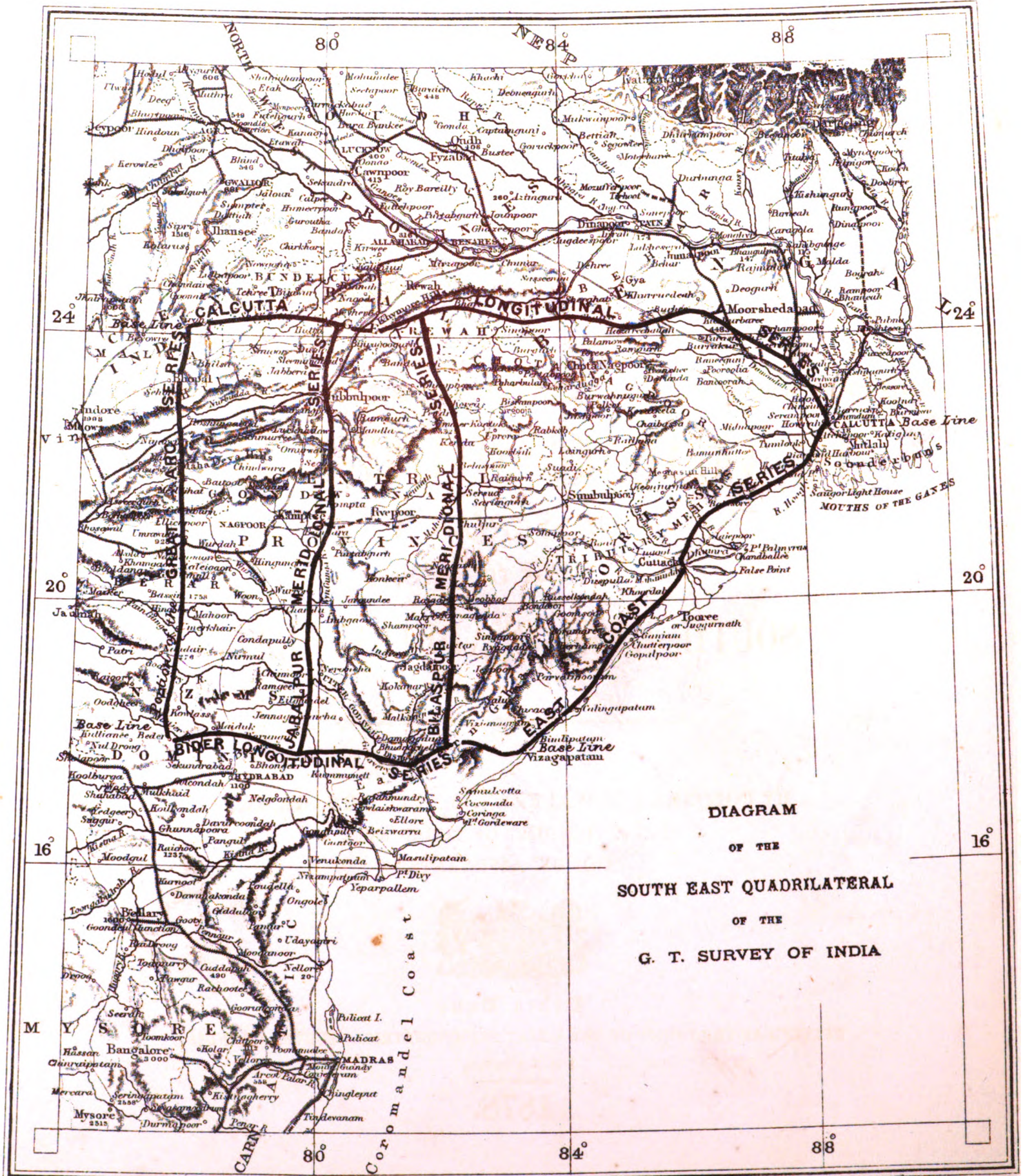
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GREAT TRIGONOMETRICAL SURVEY OF INDIA



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

DESCRIPTIONS AND CO-ORDINATES
OF THE
PRINCIPAL AND SECONDARY STATIONS AND OTHER FIXED POINTS OF
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 Dun:

PRINTED AT THE OFFICE OF THE GREAT TRIGONOMETRICAL SURVEY OF INDIA.

M. J. O'CONNOR.

1878.

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PAGE			
4—A.	line 7 from bottom	for 2.71	read 7*
5—A.	" 2 from top	" 4.75	" 5*
7—A.	" 15 "	" Berar	" Berár
7—A.	" 17 "	after diameter	insert ; distance between upper and lower marks 14.00 feet
8—A.	" 9 "	for Berar	read Berár
8—A.	" 11 "	" 10.28	" 11.20
11—A.	" 5 "	" 1.88	" 3.67
12—A.	" " "	" 1815 and 1819	" 1814 and 1815
12—A.	" 6 "	after found	insert in 1838
24—A.	in triangles Nos. 184 & 185	for Batkoli Fort	read Bhátkuli Fort
25—A.	" " 218, 1st line	" 4.764256 | 58111 | 11.006	" 4.564256 | 36665 | 6.944
30—A.	" " 339	" Dámargda, XLII	" Dámargída, XLII
30—A.	omit triangle No. 348	Since this Volume was passed through the press, it has been discovered that Bápúr Mosque and Karámungí Tomb are identical. The position assigned to the mosque is to be preferred.	
46—A.	line 33 from top	" Ambá Hill Pagoda	read Amblá Hill Pagoda
55—A.	" 8 from bottom, middle column		dele No. 173
58—A.	" 10 from bottom, middle column	" 1875	read 1879*
58—A.	" 9 from bottom, middle column	" 3	" 7*

* The pillars at stations V and VI were rebuilt by Lieutenant Riddell, R.E., in 1871, and their heights changed causing the differences here shewn.

REFERENCES.

v

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 17 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 secondary

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 49—*A*, is that of the district in which the point is situated.

The latitudes and longitudes of all points shown on the charts 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 heights above mean sea level determined Trigonometrically and indicated by the symbol H, in the Co-ordinate List commencing on page 49—*A*, always refer to the upper mark-stones or to the upper surfaces of the circular pillars marking the stations.

May 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 a section of the meridional chain of triangles, trending from Cape Comorin to the Himalayan Mountains, which has long been known to geodesists as the Great Arc of India, and has been employed—in combination with meridional arcs measured in other parts of the globe—in all the investigations of the Figure of the Earth, which have been made during the present century. Full details of the *principal* triangulation of the Great Arc have been published from time to time, as each section was completed, by Major Lambton in Volumes VII, VIII, X and XII of the *Asiatick Researches*, and by Colonel Everest in his two volumes entitled *An Account of the Measurement, &c.*, which were respectively published in 1830 and 1847. In these works the Arc has necessarily been treated as a solitary chain of triangles, dependent for its linear elements on base-lines measured at the extremities of the several sections, but independent of any external triangulation; for when they were published it stood alone, and was intended to form “the axis of the Great Trigonometrical Survey of India.” After its completion however longitudinal chains were carried to the east and west, and in course of time were connected together at intervals by meridional chains, and at their extremities by chains following the Frontier and the Coast Lines; and this system of triangulation is now nearly complete for the whole of India proper, including the regions between the parallels of 8° and 34° and the meridians of 67° and 92° . Thus the Great Arc has ceased to be a solitary chain of triangles and has become merged into the general triangulation of the country; and whereas originally its results were necessarily published without reference to those of the cognate operations in other parts of India, it can now no longer be considered as an independent work, but must be treated as a part of the general triangulation, and be made to harmonize therewith, borrowing from, as well as exerting an influence on, the chains of triangles external to itself.

For reasons which will be found explained at length in Section 7 of Chapter I of Volume II of the *Account of the Operations* of this Survey, the general triangulation of the country has been divided into five great figures or sections for final reduction: each of these contains a portion of the Great Arc, and the second figure in the order selected for reduction was the South-East Quadrilateral.

The portion of the Great Arc which is comprised between the parallels of 18° and 24° constitutes the western flank of this figure, which, speaking broadly, 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° . 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. | } already published |
| II. Great Arc, Section 24° to 30°. | |
| III. Karáchi Longitudinal Series. | |
| IV. Gurbágarh Meridional Series. | |
| V. Bahún Meridional Series. | |
| VI. Jogí-Tíla and Sutlej Series. | |
| VII. North-West Himalaya Series, nearly ready for publication. | |

The present is the 8th of the Synoptical Volumes, and it gives the results of the whole of the triangulation—both principal and secondary—comprised in the section of the Great Arc which lies between the parallels of 18° and 24°.

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—_A to 12—_A, were printed first of all; this was done in the year 1873, 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—_A), 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—_A), a numerical list giving the names corresponding to the numbers.

Third (page 3—_A), 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 13*—_A which gives the most recent information of their condition which has been received up to date.

Fourth (page 18—_A), the angles and sides of the principal triangles, numbered and arranged in order from north to south.

Fifth (page 19—_A), 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 38—_A), the azimuths of surrounding stations and points, at principal, principal-auxiliary† and secondary stations, the latter arranged in alphabetical order.

Seventh (page 49—_A), the co-ordinates and descriptions of all stations and points arranged in alphabetical order.

† *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 fundamental heights on which all other heights given in this volume are based, are:—

First, those of two stations at the northern extremity of the Series, near the Sironj Base-line, viz., Kám-khera 1,780·1 feet, and Bhaorása 1,387·3 feet, which values rest on the line of spirit levels carried from the mean sea at Kurrachee to Sironj, and are given at pages 134 and 135 of the *Tables of Heights in Sind, the Punjab, &c.*, Calcutta 1863.

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

(1).	From Sironj, in terms of Kurrachee 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 at Vizagapatam, through the Madras Coast and Meridional Series and the Bider Longitudinal,	1971·4 "
(4).	From the mean sea at Bombay, through the Bombay Longitudinal Series,	1989·5 "
	Mean	1980·2 "

All other heights were determined differentially, by the method of reciprocal vertical angles, back and forward observations being taken at each of the principal stations. The error generated in the triangulation by computing from the northern to the southern extremity, and which has now been dispersed, was only 2·9 feet.

It has not been considered necessary to publish the whole of the details of the secondary triangulation. The sides and angles of 445 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 is reason to believe that this value is about 3' too great; but, pending the final determination of the longitude of the Madras Observatory by electro-telegraphic communications with the Royal Observatory at Greenwich, it has not been considered desirable to alter the value which was adopted in 1815 and has been maintained up to the present time. Meanwhile 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—3'.

As regards the orthography of Indian names, I am sorry to have to state that it has not been possible to adopt a uniform system throughout the present volume. In the early portion, consisting of Alphabetical and Numerical lists and Descriptions of Principal Stations, printed in 1873, the orthography of Dr. Hunter's "Guide to the Orthography &c.," was adopted for such names as occur therein, and all the other names were spelt in keeping with the system followed in his list: no final vowels were accented. Then there was a pause of about three 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 *bit*; *í* as in *ravine*; *u* as in *bull*; *ú* as in *rural*; *o* as in *note*; *e* as *a* in *say*; *au* as *ou* in *cloud*; *ai* as *i* in *ride*.

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

sides and azimuths are given. With the aid of these Charts 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, F.R.S., and Mr. Cole, M.A. Mr. Cole also wrote the Introduction, and he moreover supervised the Simultaneous Reduction of the South-East Quadrilateral, of which this section of the Great Arc forms an important portion. Great pains have been taken to secure the utmost accuracy in preparing the data and passing them through the press.

SURVEYOR GENERAL'S OFFICE,
CALCUTTA
18th February 1878. }

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

GREAT ARC MERIDIONAL SERIES.

SECTION 18° TO 24°

GREAT ARC MERIDIONAL SERIES, SECTION 18° to 24°.

INTRODUCTION.

The Triangulation of which this volume contains the details, is that part of the Great Arc which extends, on the meridian of 78°, from near Dámargída, in the Nizam's territory, northward through the Province of Berar, the western portion of the Central Provinces and thence through Bhopál into the Gwalior territory, terminating near the town of Sironj. This series has been twice executed, first by Lieutenant-Colonel Lambton and Captain Everest in the early days of the survey and with inferior instruments; and afterwards by Lieutenants Waugh and Renny acting under the direction of Lieutenant-Colonel Everest and operating with the most refined instruments.

The details of the first survey were published by Captain Everest in London in 1830, under the title of "An Account of the Measurement of an Arc of the Meridian between the parallels of 18° 3' and 24° 7'"; and although the present volume has little to do with them it seems desirable to give some account of what was then executed.

Colonel Lambton, in 1815, had brought up his triangulation along the Great Arc from the south to near Dámargída, in the neighbourhood of which place he had measured a base-line called the Bider base, with the chain which he had employed for the measurement of all his former bases. This base completed the section between Namthabad near Guti and Dámargída.

The chain in question, a steel one by Ramsden, was one that was originally "sent with Lord Macartney's Embassy as a present to the Emperor of China, and having been refused by that potentate, it was made over by his Lordship to the Astronomer, Dr. Dinwiddie, who brought it to Calcutta for sale". It was purchased by Lord Clive the Governor of Madras, and was afterwards employed in the measurement of all Indian base-lines until it was superseded by the Colby Apparatus.

While the base-line was being measured the triangulation was commenced by one of Colonel Lambton's sub-assistants (Mr. Lawrence) and carried on at intervals to the Godávári by another, Mr. DePenning. The progress of the series was greatly impeded by the unsettled state of the country at that time, which was due to the formation of the Pindhári confederacy, and the doubtful alliance of the Nizam's Government. This was just the time when the ravages of the Pindháris had attained their greatest extent. These people were hordes of marauders, who had established themselves to the north of the Nerbudda, and from thence bands of them made plundering excursions in all directions and to enormous distan-

ces; and large parts of both Berar, and what is now termed the Central Provinces had either been devastated by them, or were liable to their incursions. Thornton, in his History of the British Empire in India, says of them "They were in truth, except on account of their numbers, a very contemptible set of miscreants. Active and enterprising almost beyond belief, and wicked to the full measure which the most ardent lover of horror can desire, their adventures and their crimes were undignified by any of those nobler characteristics of our nature, which have sometimes shed a deceptive glory over actions of great atrocity, and averted from their perpetrators the penalty of unmitigated disgust. No redeeming virtue marked the character of the Pindhári. Even animal courage, often the sole ennobling quality of his profession, he possessed not. The Pindhári marched, or rather darted, upon his victims with a rapidity certainly never equalled by any regular force; but, unfortunately for the romantic coloring of his character, he manifested equal or even greater alacrity in flight. No troops in the history of the world ever displayed such proficiency in the art of running away; and to this, their strong point, they invariably resorted if attacked".

* * * * *

"The Pindháris were not composed of any peculiar people or tribe, but of a variety—of the refuse of all tribes, denominations and creeds. The ancestors of their chiefs are regarded as of Pathán extraction; their followers were a motley multitude, brought together by the common impulse of necessity".

Malcolm, in his Memoir of Central India, describes the manner in which they conducted their raids as follows:—

"The Pindháris were neither encumbered by tents nor baggage; each horseman carried a few cakes of bread for his own subsistence, and some feeds of grain for his horse. The party, which usually consisted of two or three thousand of good horse, with a proportion of mounted followers, advanced at the rapid rate of forty or fifty miles a day, neither turning to the right nor left until they arrived at their place of destination. They then divided, and made a sweep of all the cattle and property they could find: committing at the same time the most horrid atrocities, and destroying what they could not carry away. They trusted to the secrecy and suddenness of the irruption for avoiding those who guarded the frontiers of the countries they invaded, and before a force could be brought against them they were on their return. Their chief strength lay in being intangible. If pursued, they made marches of extraordinary length—sometimes upwards of sixty miles—by roads almost impracticable for regular troops. If overtaken, they dispersed, and re-assembled at an appointed rendezvous; if followed to the country from which they issued, they broke into small parties. Their wealth, their booty, and their families were scattered over a wide region, in which they found protection amid the mountains and in the fastnesses belonging to themselves, and to those with whom they were either openly or secretly connected; but nowhere did they present any point of attack, and the defeat of a party, the destruction of one of their cantonments, or the temporary occupation of some of their strongholds, produced no effect beyond the ruin of an individual freebooter, whose place was instantly supplied by another, generally of more desperate fortune and therefore more eager for enterprise."

In 1816 the ravages committed by the Pindháris in Berar were so great that the British Government induced the Nizam to provide troops for its protection, and some 7,500 horse were assigned for the purpose. In 1820 the number was said to amount to 26,000, shewing the unsettled state of the province. The state to which it was reduced may be further gathered from Sir H. Russell's report, he being Resident at Hyderabad. He therein describes the province as naturally the most fertile part of the Nizam's dominions; but states that it

had suffered severely from Pindháris and from the depredations of Naiks and Bhils, in so much, that the net revenue collected during 1815-20 was not more than half the sum which the province was estimated to yield at the close of the war in 1803. Such was the state of the country when Colonel Lambton found it necessary to suspend operations for a time. After the operations reached the Godávári no further progress was made for some years; and the attention of the whole establishment was devoted to other survey operations for the purposes of general geography.

To the north of Berar, the once flourishing Nerbudda districts are also represented as desolated almost beyond description. An old map of Hoshangabad in the Bengal Asiatic Society's Journal for 1834 (p. 70) shews all the Sohágpur valley as waste and jungle. At the settlement of 1863-64 nearly two thirds of the culturable area, including all the good land, was cultivated chiefly with wheat. Of parts of Nimár it was reported in 1819 that all traces "of former cultivation had ceased to be perceptible, and with the exception of Kanapur, "not a dwelling or an inhabitant was to be seen in any part of the country". Their desolation was expressed even more forcibly in the saying—"there is not a *crow* in Kanapur Beria."

Captain Everest joined the Department towards the end of 1818 and, after some preliminary instruction by Colonel Lambton, the field operations were intrusted to his care. He was first employed on a meridional series to the east of Hyderabad, between the rivers Kistna and Godávári; but before he had completed the triangulation, he and his whole establishment were prostrated by jungle fever at a hill station by name Yalápúram, and it became necessary to hasten back to Hyderabad, a distance of 200 miles, with all the speed possible. Notwithstanding the utmost endeavours made by the authorities at Hyderabad, so soon as the calamity became known there, to aid and expedite the return of the party, by sending out every available means of transport under a strong escort to meet it, fifteen of Captain Everest's followers perished by the road side, and those brought in were in Captain Everest's words "like a crowd of corpses recently torn from the grave."

Colonel Lambton himself was at this time at Calcutta making arrangements for the continuation of the Great Arc. In April 1820 he returned, not having been successful in his endeavours; and in June he again detached Captain Everest and his party to finish the triangulation left incomplete the preceding year. This was found to be a work of no great difficulty, the nature of the country to the north of Yalápúram being very different from that to the south. But Captain Everest not having shaken off the fever he had caught the year before, and suffering from a relapse, found it necessary to obtain leave to proceed to the Cape of Good Hope.

"The remainder of the year 1820 and the beginning of 1821 were occupied by the "sub-assistants in completing all the vacant patches in the net of triangles between the "Kistna and the Godávári.

"In the middle of 1821, the arrangement about which Colonel Lambton had gone "to Calcutta having been effected, some further progress was made with the Great Arc, which "in 1817 had been continued by Mr. DePenning to the northern bank of the Godávári. The "points Bhesa and Somtána had been established in that year; but not visited, and the opera- "tions were resumed upon this distance and carried to within sixty miles of Ellichpur: but the "constitutions of all the establishment having been thoroughly unhinged at Yalápúram "were now highly susceptible of sickness, and a fresh attack of jungle fever very soon "rendered it necessary to form a field-hospital at Káranja, a large town near the series, and "of course all operations were suspended for the present."

In forwarding a sketch of the Meridional Series of triangles between Bider and the neighbourhood of Ellichpur to the Secretary to Government, General Department, in April 1822 Colonel Lambton writes as follows regarding the tract of country traversed.

“I regret that the country, through which these triangles have been carried, afforded so few objects by which geography might benefit; but the whole tract, from the Godávári to the borders of the Berar valley, is in a desolated state with only here and there a ruined village; and the excessive sickness of the party, added to the poverty of the country, have rendered this expedition of little importance, excepting the mere continuation of the triangles, which however will be of service should this hitherto ill-fated country ever become settled and cultivated. The stations being all permanently marked, will then become of use in extending the detail surveys.”

Early in 1822 Colonel Lambton measured a base-line in the valley of Berar, near the village of Takalkhera, and also took a series of zenith sector observations. While there he was joined by Captain Everest who had returned, with completely restored health, from the Cape of Good Hope.

From the sickness which prevailed in the party, which deprived Colonel Lambton of the services of four sub-assistants, the labour of measuring the base devolved on him and Doctor Voysey (surgeon and naturalist to the Great Trigonometrical Survey) and they had together to perform all the operations; and after the completion of the base, while Colonel Lambton was occupied with celestial observations Dr. Voysey was employed in taking angles at the neighbouring stations.

The whole party now returned to Hyderabad leaving the connection between the base-line at Takalkhera and the triangulation incomplete, to the extent of about 60 miles.

From Hyderabad Captain Everest was detached to carry a series westward from the side of the Great Arc, Dámargída to Burgápáli, and while occupied on this triangulation he heard of the death of his chief. Colonel Lambton died on the 20th January 1823 at Hinganghát on his way to Nágpur, whither he was proceeding with the object of continuing the operations on the Great Arc.

On receiving the intelligence Captain Everest deemed it his duty to discontinue the series he was engaged on, and to devote his energies to the further prosecution of the Great Arc, as being the most important undertaking the department was employed on. He therefore returned to Hyderabad and directed the establishment, which had accompanied Colonel Lambton to Hinganghát and had afterwards proceeded to Nágpur, to remain there till he should be able to meet it at Takalkhera.

Whilst engaged on the longitudinal series to the west of Dámargída, he had introduced the use of luminous signals in place of the flags and masts with piles of stones, which were the ordinary objects observed to, blue lights being used for long distances. The new signals consisted of a small cup, six inches in diameter filled with cotton seeds steeped in oil and resin, and put under a large inverted earthen vessel, about two feet and a half deep with an aperture cut in the side, and lighted. The introduction of these signals enabled operations to be carried on with great facility in the cold season and the hot weather preceding the rains, thus removing the necessity, which had hitherto existed, of exposing the survey establishments during the rains, when jungly tracts are most unhealthy and fever in all places is most prevalent.

Being in possession of this advantage, Captain Everest decided upon not taking the field till October. On the 18th of that month he quitted Hyderabad, and in November 1823 commenced operations on the side Pilkher to Ikjhera, where the previous triangulation had ceased. The work was then carried on with expedition and brought to a conclusion at

Bhaorása on March 25th 1824, the base-line at Takalkhera having been connected with the triangulation in course of the operations.

In November and December 1824 Captain Everest measured a base-line at Sironj with the same chain used by Colonel Lambton; and in the following January took a series of celestial observations at the station of Kaliánpur, thus completing the Great Arc up to lat. 24° .

Shortly after this Captain Everest's health necessitated his return to England on sick leave and while there he employed himself in publishing the account of the operations of which the title has already been given.

In it he states "that the whole series of terrestrial observations, commencing at the base near Bider and ending at the line Pilkher to Ikjhera, was taken with the eighteen-inch theodolite by Cary, an instrument furnished with two microscopes to the horizontal limb, and fitted up with a common telescope with a vertical semicircle, and a vertical circle with two microscopes, removable at pleasure. This instrument had a double conical axis so that it might be used as a repeating theodolite;" but this was not done.

"All the terrestrial observations to the north of the line Pilkher to Ikjhera were taken with the large [three feet] theodolite by Cary, which was a fac-simile of that made by Ramsden for the Board of Ordnance in England. This was originally a very noble piece of workmanship, and seems to have been divided with very great accuracy; but in the country of Tanjore in the year 1808, owing to the flatness of the land, it had become necessary to make use of every elevation, whether natural or artificial, that presented itself; and in raising it in its case to the top of one of the pagodas, the bearing rope, which kept the weight from striking against the side of the building, snapped when it was half way up, and the instrument, case and all, struck with a violent crash on the side wall."

The blow was received on the tangent screw and its clamp, the case being broken and the horizontal limb apparently irretrievably damaged. The damage was however to a great extent repaired by Colonel Lambton after much labour; and the instrument was considered again fit for use and almost as much to be relied on as before.

When the triangles came to be computed the closing error in side of the section Takalkhera to Sironj appeared to be very small, only 0·26 feet in $7\frac{1}{2}$ miles, but that in the southern section Bider to Takalkhera was by no means so satisfactory, shewing a discrepancy of upwards of 6·57 feet.

Captain Everest returned to India from England in October 1830, having been previously appointed Surveyor General of India; and he was also provided liberally with first class instruments, both for terrestrial and celestial purposes. Among the former was the apparatus invented by Colonel Colby of the Royal Engineers for the measurement of base-lines, and which is generally referred to as "the compensation apparatus."

With these bars a base-line was first measured at Calcutta in 1831-32; another was measured in Dehra Dún during the cold season of 1834-35, as an origin for the last section of the Great Arc, lying between lats. 24° and 30° , for the triangulation of which preparation was then being made.

On the completion of this section a discrepancy of 3·3 feet shewed itself on the chain base of Sironj. So large an amount of error could not be attributed to the triangulation which had been brought down from Dehra Dún; for this had been conducted with the utmost care and with very superior instruments; nor could it be allowed to remain unaccounted for. To Major Everest the most satisfactory course seemed to be to re-measure the Sironj base with

the compensation apparatus so soon as this could be done. Accordingly the next cold season, 1837-38, was devoted to this object and the result proved that the chain measurement was in defect to the extent of 2·8 feet; thus leaving a residual error of about 1 inch per mile only, in the whole length of the base, to be assigned to the triangulation between Dehra and Sironj; and as this extends over a distance of about 450 miles, that section stood proved as a most highly finished work.

It had been Major Everest's intention to devote the next cold season to celestial observations with the new Astronomical circles he had been provided with by the Hon'ble Court of Directors; but having found that they would need alterations before they would be in a state suitable for the work required of them, he had previously placed them in the hands of the Company's Instrument maker and they were not yet ready for use. It thus became necessary for him to determine how the establishment allowed for the Great Arc could best be employed for that season: and the considerations which induced him to employ it in the re-triangulation of the section of the Great Arc between lats. 18° and 24° may be best given in his own words.

"To the understanding of this question it is necessary to recall to the recollection of my readers that in the section of the Arc between the parallels of $18^{\circ} 3'$ and $24^{\circ} 7'$, which is the subject of my former book, the triangulation was executed with very inferior instruments to those now at my disposal; for the portion between Bider and Pilkher was performed with an 18-inch instrument, engine divided, and of no great accuracy, whilst in the remaining portion, between Pilkher and Sironj, the old large theodolite which had been seriously injured was employed, whence in looking over the data the following facts will be noted as also a sufficient clue afforded to guide us to their origin:—

"1st. The divers observations from which the general means are drawn exhibit discordancies *inter se* seldom less than 20", and in one case to so large an amount as 36"·5.

"2nd. The errors in the triangles in column ϵ [the column of computed errors] in the former portion frequently amount to 4" and 5", and in one case there is an error of upwards of 8", whilst in another there is an error exceeding 11", also in the latter portion though the errors are generally much smaller, yet there are three instances in which they amount to upwards of 6."

"3rd. There is a discrepancy between the base measured at Bider and that brought down from computation in terms of the Takalkhera base of upwards of 6½ feet, whilst the comparison between the bases of Takalkhera and Sironj instituted in like manner shews little more than 3 inches.

"4th. There is an uncertainty about the azimuths in the whole extent between Bider and Sironj, the observations not having been sufficiently numerous, and adequate care not having been bestowed on the subject."

The time seemed propitious to rectify these matters and Major Everest accordingly made up his mind to the re-survey of that section of the Arc during the next field season. With this object he directed Lieutenant Waugh to proceed at once to Hyderabad, there to await the suitable season for survey operations, when he was to commence work from the Manjra valley and work north to meet Colonel Everest, who intended to proceed southwards with the triangulation from the side Kámkhera to Bhaorása. The latter arrangement however had to be altered when the time came; for Colonel Everest found it necessary to undertake other work and he deputed Lieutenant Renny to execute the task he had assigned himself on the Great Arc.

Colonel Everest thus describes the country through which the series runs:—

"The range of mountains through which the Nerbudda and Tapti flow, where it crosses

“the series of the Great Arc, may be considered to commence from latitude $23^{\circ} 30'$, and to extend to latitude $21^{\circ} 20'$; that portion which lies to the north of the former of these rivers; and defines the course of its channel is known by the name of the Mirganáth range, and is of sand-stone dipping to the north at an angle of about 20 or 30 degrees; the southern portion is generally speaking a basaltic formation overlying sand-stone, the principal station of Dhár and secondary station of Kamla, which are the highest points included in the meridional series are of that rock, and the former of these two eminences looks down on the valley of Berar in pride almost as towering as that which the Himalaya range displays over the plains of the Ganges.

“This range to which I have elsewhere applied the name of the Mahádeo Mountains, though I must mention that the propriety of that appellation is questioned, some calling it the Sátapura, others the Gawilgurh range, was when my operations were carried through in 1824 almost a desert traversed by a wild race called Gonds supposed to be one of the remnants of the aboriginal tribes who inhabited India before the arrival of the Hindu invaders and were driven to seek refuge in these sterile mountain tracts to which the name of Gondwána has been assigned.

“The condition of the country appears to have greatly improved since the period 1824 of which I speak, which is a never failing result where any tract in India has for a reasonable period been subject to the steady and systematic controul of British rule; not that I mean to say that the Government of the East-India Company is precisely Utopian or unsusceptible of amelioration; but what I do mean to assert is that in all portions of the tract passed over by the Great Arc Series, of which it will be conceded that I am authorised to speak with confidence, the contrast exhibited by the present over the former amount of prosperity is most striking where the British power has been paramount, and is more and more marked in proportion to the influence which that power exerts.*

“In the tract I speak of there are two places occupied as civil and military stations *viz*: Hoshangabad on the Nerbudda and Betúl near the Tapti, of which the latter was in 1824 notoriously so unhealthy as to have appropriated to itself *par excellence* the appalling title of the Valley of Death. That valley has since become highly cultivated and flourishing, and is considered one of the healthiest places in the tropical parts of India: this is however not the case with the mountain range in general which continues to be about as deadly a tract in 1840 as it was in 1824.

“It is a long and weary journey through this unhealthy range, the inhabitants are scanty, water and provisions are scarce, and it is only at certain seasons of the year that travelling through them can be attempted with any reasonable prospect of impunity—that season is between the beginning of January and the middle of June, and it will be seen from what has preceded that it was with an eye to this that I availed myself of the occasion presented by the termination of the Sironj base to detach Captain Waugh and his party to the southward.

“On emerging from the Mahádeo mountains the extensive and fertile valley of Berar is entered and there is little to be apprehended on the score of unhealthiness until arriving at Káranja near the principal stations of Pilkher and Kopdi where a belt called the Máhúr jungle commences almost as much to be dreaded as the Mahádeo mountains themselves; so that though it was an easy matter to arrange the journey to the southward, yet some

* “As an example: in 1824 all that part of the plain of Sironj in which my base-line was measured was a desert; in 1837, when re-measuring the same line, free ground on which my camp could be pitched was not to be found, and it was utterly impossible to carry on the operation without cutting a broad road for three-fourths of the way through growing corn, for all which the owners had to be remunerated. Sironj was a jagír of the celebrated Pindhárf leader Amír Khán but it is under the direct influence of the British resident at Sihor. Other instances without number might be adduced if necessary”.

“management was needed in combining the movements of the parties so that the terrestrial operations should be carried on precisely in the most fitting season.”

Lieutenant Waugh's party proceeded as directed *via* Hoshangabad and Betúl to Ellichpur, and there taking up the line of the Great Arc Series marched to Somtána station for the purpose of making a set of azimuth observations. His health had unfortunately suffered considerably on his march down country; and owing to this cause the set of observations failed and he was obliged to go to Hingoli for medical assistance.

PERSONNEL.

Lieut. A. S. Waugh, Astronomical Assistant.
 J. Olliver, Esq. Chief Civil Assistant.
 Mr. W. N. James, 2nd Principal Sub-Assistant.
 „ W. Martin, Sub-Assistant 1st Class.
 „ G. Terry, „ „ „
 „ N. Parsick, Sub-Assistant 3rd Class.

In the mean time he directed Mr. James, 2nd Principal Sub-Assistant, to proceed with the party to Hyderabad and to visit Dámargída *en route*, for the purpose of constructing a small observatory over the mark at that station, similar to the one at Kalíána, suitable for latitude observations. Lieutenant Waugh had been directed by Colonel Everest to search for the limits of the base-line measured by Colonel Lambton in 1815, and to examine whether the alignment might not be extended sufficiently to increase the angle at Malliga to upwards of 30° which at present stood at 26° 15'. The search proved ineffectual for only the eastern limit could be found, all vestige of the western having been apparently obliterated.

Lieutenant Waugh's health fortunately recovered in sufficient time to enable him to commence operations early in that season, 1838-39.

The following brief abstract of the operations has been abstracted from Colonel Everest's Report.

Somtána visited 30th March 1838. Observations of α Ursæ Minoris completed on 9th April.
 Dámargída visited 8th May. Laid off the plan of the observatory and determined the sites of the meridian marks. After having put Mr. Sub-Assistant G. Terry in charge of the building of the observatory, went into quarters 24th May.
 Malgi visited 22nd July. Observations of principal and secondary angles, horizontal and vertical, completed on 24th July.
 Dámargída re-visited 26th July. Observations of principal and secondary angles, horizontal and vertical, completed 1st August.
 Dúdála visited 7th August. Observations of principal angles, horizontal and vertical, completed 9th August.
 Báchápáli visited 14th August. Observations of principal angles, horizontal and vertical, completed 15th August.
 Burgápáli visited 17th August. Observations of principal angles, horizontal and vertical, completed 19th August.
 Dámargída visited a 3rd time on the 2nd October for the purpose of observing α Ursæ Minoris between the 4th and 12th October.
 Baktápur visited 17th October. Observations of principal angles, horizontal and vertical, completed 20th October.
 Yanágápáli visited 22nd October. Observations of principal angles, horizontal and vertical, completed 25th October. Simultaneous vertical angles taken with Báchápáli.
 Shiválingápa visited 1st November. Observations of principal angles, horizontal and vertical, completed on 5th November.
 Yemsha visited 7th November. Observations of principal angles, horizontal and vertical, completed 12th November.
 Somtána re-visited 16th November. Observations of principal angles, horizontal and vertical, completed, and a complete set of observations on Rangifer 41 Bode for azimuth concluded 24th November.

- Terban visited 26th November. Observations of principal angles, horizontal and vertical, completed 29th November.
- Bhesa visited 2nd December. Observations of principal angles, horizontal and vertical, completed 4th December.
- Shivni or Seoni visited 6th December. Observations of principal angles, horizontal and vertical, completed 7th December.
- Bitargáon visited 10th December. Observations of principal angles, horizontal and vertical, completed 11th December.
- Súkli visited 14th December. Observations of principal angles, horizontal and vertical, completed 17th December.
- Máhúr visited 19th December. Observations of principal angles, horizontal and vertical, completed 21st December.
- Sákri visited 23rd December. Observations of principal angles, horizontal and vertical, and a complete set of observations on δ Ursæ Minoris for azimuth taken and concluded 31st December 1838.
- Bám visited 2nd January 1839. Observations of principal angles, horizontal and vertical, completed 5th January.
- Kopdi visited 7th January. Observations of principal angles, horizontal and vertical, completed 10th January.
- Pilkher visited 12th January. Observations of principal angles, horizontal and vertical, completed 16th January.
- Badgáon visited 18th January. Observations of principal angles, horizontal and vertical, and a complete set of observations on λ Ursæ Minoris, completed 31st January.
- Ikjhera visited 3rd February. Observations of principal angles, horizontal and vertical, completed 8th February.
- Wírúr visited 11th February. Observations of principal angles, horizontal and vertical, completed 15th February.
- Bádáli visited 19th February. Observations of principal angles, horizontal and vertical, completed 24th February.
- Ashti visited 26th February. Observations of principal angles, horizontal and vertical, completed 5th March.
- Ner visited 8th March. Observations of principal angles, horizontal and vertical, completed 14th March.
- Sálbaldi visited 17th March. Observations of principal angles, horizontal and vertical, completed 19th March.
- Dhár visited 24th March. Observations of principal angles, horizontal and vertical, completed 27th March.

The other party under Lieutenant Renny left the Head Quarters at Dehra on the 9th October 1838 and reached Sironj on the 24th November.

PERSONNEL.

Lieutenant T. Renny.
 G. Logan, Esqr., 2nd Assistant.
 Mr. H. Keelan, Sub-Assistant 1st Class.
 " I. G. Driberg " 2nd "
 " C. Johnson " 3rd "

Lieutenant Renny had been directed in the first instance to examine the base-line apparatus which had been left at Sironj under the charge of Mr. O. Mulheran, one of the steadiest and best conducted of the sub-assistants.

Colonel Everest had been very much perturbed at learning that Mr. Mulheran had mistaken the black varnish on the bars for rust and had sedulously applied himself to scraping it off. Not long afterwards he was further informed that Mr. Mulheran had become insane. Lieutenant Renny's proceeding to Sironj was the first opportunity that offered for examining into the mischief done to the bars and ascertaining the true

state of Mr. Mulheran. He found the former of no very serious importance; but his report regarding Mr. Mulheran only confirmed the sad intelligence that had already reached the Surveyor General.

After completing his examination of the bars and placing another sub-assistant in charge, Lieutenant Renny commenced operations on the Great Arc on the side Kámkhera to Bhaorása, the elements of which had been determined in 1836-37 as also observations taken to surrounding stations. In addition to observing at all the old stations, Lieutenant Renny was directed to select another station to the west of Ládi so as to form a polygon round that station.

Lieutenant Renny reached the station of Gárgája where his first observations were to be made on the 28th November 1838 and the following is a detail of his operations.

Gárgája visited 28th November. Observations of principal and secondary angles, horizontal and vertical, completed 1st December.

Ahmadpur visited 3rd December. Observations of principal angles, horizontal and vertical, as also an entire set of observations for azimuth on ϵ Ursæ Minoris completed 8th December.

Ander visited 11th December. Observations of principal angles, horizontal and vertical, completed 13th December.

Gidgarh visited 16th December. Observations of principal angles, horizontal and vertical, partially taken 17th December. Re-visited 7th January for the purpose of observing the angle Ládi and Samasgarh, the latter station having been selected after Lieutenant Renny's first visit to Gidgarh. Final observations completed 9th January 1839.

Bhimbat visited 25th December. Observations of principal angles, horizontal and vertical, as well as those for azimuth on δ Ursæ Minoris completed 30th December.

Samasgarh visited 3rd January. Observations of principal angles, horizontal and vertical, completed 4th January 1839.

Ládi visited 11th January. Observations of principal angles, horizontal and vertical, completed 12th January.

Ránipur visited 16th January. Observations of principal angles, horizontal and vertical, completed 19th January.

Morpáni visited 24th January. Observations of principal angles, horizontal and vertical, completed 28th January.

Tek visited 1st February. Observations of principal angles, horizontal and vertical, completed 7th February.

Nílgarh visited 14th February. Observations of principal angles, horizontal and vertical, as well as those for azimuth on σ Camelop. completed 21st February.

Alampur visited 25th February. Observations of principal angles, horizontal and vertical, completed 27th February.

Narwargarh visited 1st March. Observations of principal angles, horizontal and vertical, completed 7th March.

Dhába Deo visited 11th March. Observations of principal angles, horizontal and vertical, completed 14th March.

Jágdhar visited 17th March. Observations of principal angles, horizontal and vertical, completed 22nd March. After this the party proceeding southward joined Lieutenant Waugh at Kamla near Dhár on the 27th March, the date on which that officer had brought his work to a conclusion.

Both parties then proceeded northward to the Head Quarters of the Survey at Dehra which they reached on the 2nd June.

On a comparison being made between the new work and the old, the propriety of the revision of this section at once became manifest; for in all the work to the south of the line Pilkher to Ikjhera, which was executed by Messrs DePenning and Lawrence with the 18-inch theodolite, there were found to be few cases of the mean observed angles being within 1 second of the truth, and abundant instances in which errors of 3, 4, 5 and 6 seconds were detected, whilst there were more than one in which these errors came up to the large amount of 10 to 12 seconds. To the north of that line, where the 36-inch instrument had been employed, errors fewer in number and of smaller magnitude existed, the largest being by Colonel Everest's statement 5 seconds.

The revision furthermore demonstrated that the discrepancy between the computed and measured lengths of the Bider base of 6 feet 7 inches, was due to an accumulation of errors in the old triangulation. For on a comparison being made on the side Báchápáli to Dúdála, the nearest to the old and non-existent Bider base, Colonel Everest obtained the following results

Line deduced from measured Bider base	81161·72 feet
" " old triangulation	81144·26 "
" " new "	81162·19 "

This was highly satisfactory so far as it went; but after what Colonel Everest had learnt regarding the uncertainty of chain-measured base-lines he did not consider the test would be complete until a new base-line had been measured at Bider with the compensation apparatus, and as the Honourable East-India Company's Directors had given him permission to act according to his own judgment, he determined to measure a base so soon as it might be in his power to do so. This could not be done during the next field season, because it was necessary that the arc of amplitude between Kaliána and Kaliánpur should be first measured with the new astronomical circles, in order to complete that section of the Great Arc. The next season was employed in determining the arc of amplitude between Kaliánpur and Dámargída with the same circles; and in the season following, viz. 1841-42, section 18° to 24° of the Great Arc was completed by the measurement of the base-line in the valley of the Manjra. The discrepancy which then appeared between the value of the base-line as computed from Sironj and as measured is shewn by the following comparison

Bider base by computation from Sironj	41578·18 feet
" measurement	41578·54 "
	0·36 "
Difference	

which is equivalent to about half an inch per mile. This discrepancy was further reduced after the final reduction of the base-lines to 0·2 of an inch per mile.

Secondary Triangulation.

Scarcely any Secondary Triangulation seems to have been executed in connection with the revision of this section of the Great Arc and that which is shewn was chiefly effected prior to 1824, with the exception of the Nágpur Series, which originates on the sides Ner-Wirúr-Ikjhera and runs eastward until it meets the Jubbulpore Meridional Series. A por-

tion of this triangulation is included in this Series and the continuation will be found in the Synoptical Volume of the Jubbulpore Series.

This series was undertaken during the field season of 1858-59 for the purpose of furnishing a trustworthy base of operations for the Revenue Survey of Nágpur.

PERSONNEL.

J. Mulheran, Esq., Surveyor
Mr. G. McGill, 2nd Class Sub-Assistant
" J. B. Smith "

The progress of the undertaking was greatly interrupted by the disturbed state of the country. Mr. McGill, who was detached in October 1858 to execute some triangulation in connection with the Hyderabad Topographical Survey, had barely completed observations at two stations when he was pursued by Rohilla marauders and was compelled to fly for his life, only escaping by traversing a little known route through the hills. It soon after became necessary for Mr. Mulheran to recall him to his camp, the British Resident at Hyderabad having intimated that the disturbed state of the country rendered it unsafe to employ parties in it. He was afterwards engaged on minor triangulation connected with this series.

Mr. Mulheran, having completed observations at the three stations of Ner, Wírúr and Náchangaon, had hardly reached his next station Málegaon, when an express messenger brought him a letter warning him of the approach of Tantia Topee at the head of a party of rebels. This necessitated his return to Nágpur by forced marches, where he had to await further information regarding the movements of the rebels who had sacked Multai and were believed to be advancing towards Poona. The interruption involved a delay of a whole month before the series could be again proceeded with, Tantia Topee and other rebel leaders having by that time left the vicinity of the northern frontier of the Nágpur Province. The triangulation, after this, seems to have been carried to its conclusion without any further hinderances.

July 1877.

W. H. COLE.

GREAT ARC MERIDIONAL SERIES:

1-4

ALPHABETICAL LIST OF STATIONS.

Ahmadpur	II.	Kopdi	XXV.
Alampur	XIII.	Ládi	V.
Ander	III.	Máhúr	XXVIII.
Ashti	XIX.	Malgi	XLVI.
Báchápáli	XLI.	Manganál	XL.
Bádáli	XX.	Morpáni	IX.
Badgáon	XXII.	Narwargarh	XI.
Baktápur	XXXVIII.	Ner	XVIII.
Bám	XXVI.	Nílgarh	XV.
Bhaorása	(V).	Pilkher	XXIV.
(of base-line figures).		Ránípur	VII.
Bhesa	XXXIII.	Sákri	XXVII.
Bhimbat	VIII.	Sálbaldi	XVI.
Bider base-line, East End	XLV.	Samasgarh	VI.
Do. West End	XLIII.	Shilápáli	XLVII.
Bitargáon	XXX.	Shiválingápa	XXXVI.
Burgápáli	XXXIX.	Shivni	XXXII.
Dámargída	XLII.	Somtána	XXXIV.
Dhába Deo	XII.	Súkli	XXIX.
Dhár	XVII.	Tek	X.
Dúdála	XLIV.	Terbán	XXXI.
Gárgája	I.	Wírúr	XXI.
Gidgarh	IV.	Yemsha	XXXV.
Ikjhera	XXIII.	Yanágápáli	XXXVII.
Jágdhar	XIV.		
Kámkhera	(IV).		
(of base-line figures).			

GREAT ARC MERIDIONAL SERIES.

NUMERICAL LIST OF STATIONS.

(IV)	.	.	.	.	Kámkhera. (of base-line figures).	XXIII	.	.	.	.	Ikjhera.
(V)	.	.	.	.	Bhaorása. (of base-line figures).	XXIV	.	.	.	.	Pilkher.
I	.	.	.	.	Gárgája.	XXV	.	.	.	.	Kopdi.
II	.	.	.	.	Ahmadpur.	XXVI	.	.	.	.	Bám.
III	.	.	.	.	Ander.	XXVII	.	.	.	.	Sákri.
IV	.	.	.	.	Gidgarh.	XXVIII	.	.	.	.	Máhúr.
V	.	.	.	.	Ládi.	XXIX	.	.	.	.	Súkli.
VI	.	.	.	.	Samasgarh.	XXX	.	.	.	.	Bítargáon.
VII	.	.	.	.	Ránipur.	XXXI	.	.	.	.	Terbán.
VIII	.	.	.	.	Bhimbat.	XXXII	.	.	.	.	Shivni.
IX	.	.	.	.	Morpáni.	XXXIII	.	.	.	.	Bhesa.
X	.	.	.	.	Tek.	XXXIV	.	.	.	.	Somtána.
XI	.	.	.	.	Narwargarh.	XXXV	.	.	.	.	Yemsha.
XII	.	.	.	.	Dhába Deo.	XXXVI	.	.	.	.	Shiválingápa.
XIII	.	.	.	.	Alampur.	XXXVII	.	.	.	.	Yanágápáli.
XIV	.	.	.	.	Jágdhar.	XXXVIII	.	.	.	.	Baktápur.
XV	.	.	.	.	Nílgarh.	XXXIX	.	.	.	.	Burgápáli.
XVI	.	.	.	.	Sálbaldi.	XL	.	.	.	.	Manganál.
XVII	.	.	.	.	Dhár.	XLI	.	.	.	.	Báchápáli.
XVIII	.	.	.	.	Ner.	XLII	.	.	.	.	Dámargída.
XIX	.	.	.	.	Ashti.	XLIII	.	.	.	.	Bider base-line, West End.
XX	.	.	.	.	Bádáli.	XLIV	.	.	.	.	Dúdála.
XXI	.	.	.	.	Wírúr.	XLV	.	.	.	.	Bider base-line East End.
XXII	.	.	.	.	Badgáon.	XLVI	.	.	.	.	Malgi.
						XLVII	.	.	.	.	Shilápáli.

GREAT ARC MERIDIONAL SERIES.

DESCRIPTION OF STATIONS.



(IV). Kámkhera Hill Station, lat. $24^{\circ} 0'$, long. $77^{\circ} 46'$ —observed at in 1824, 1826, 1837, 1848 and 1864—stands on the lands of the village of Imláni, in pargana Sironj of the territories of the Nawáb of Tonk. The circumjacent villages with their distances and bearings are—Imláni, 2 miles S.E.; Kámkhera $1\frac{1}{2}$ miles W.; Ladhora about 2 miles N.; and Kua about 2 miles S.

The station was originally marked in 1824 by a low circular platform about 2 feet high, having a markstone imbedded in its upper surface, and another in the ground. No change appears to have been made when the station was visited in January 1826 for the purpose of originating the Calcutta Longitudinal Series. On re-visiting it in December 1836 the lower mark was referred to and the upper having been found to deviate 0.75 inches was re-centered over the lower at the same height as before. In January 1837, a pillar constructed of stone and mud was raised to a height of 6 feet above this upper mark, a markstone being placed at the upper surface and another intermediately, and the whole was enclosed within an isolated square platform of 25 feet side at base, having a slope of 4 inches per foot, and of the same height as the pillar. When the station was again visited in December 1848, on commencing the Karáchi Longitudinal Series, the upper markstone had disappeared; the pillar was accordingly dug down to the level of the upper mark of 1824, in doing which a markstone was met with at a height of 26.3 inches above it, but deflected 1.2 inches W. from its normal. A masonry pillar 4 feet in diameter and 8 feet in height was then built over the upper mark of 1824 and 2 markstones inserted therein in the normal of the original one, viz. one on its upper surface and the other 4 feet below; the pillar was then surrounded by an isolated platform of boulders 18 feet square at base and of the same height as the pillar, with a good external slope.

The station was subsequently visited in February 1864, on the revision of the Calcutta Longitudinal Series when the uppermost markstone was compared with the one next below it and being found accurately in its normal was replaced at the same height as before.

(V). Bhaorása Hill Station, lat. $24^{\circ} 8'$, long. $78^{\circ} 3'$ —observed at in 1824, 1826, 1837 and 1864—is built on a low ridge of sandstone, situated in pargana Bhaorása of the Gwalior territories. The circumjacent villages with their distances and bearings are—Bherkheri, about 2 miles N.W.; Kiria, about 2 miles N.E.; Salitra, about 2 miles S.S.W.; and Sarkandi, about 2 miles W.

The station was originally marked in 1824 by a circular platform of loose stones (probably about 2 feet in height) having a markstone at top and another at bottom. No change appears to have been made when it was visited in February 1826 for the purpose of originating the Calcutta Longitudinal Series. On re-visiting the station in January 1837, the upper markstone was removed to examine the dot below, and the former was found to have deflected 0.75 inches: it was accordingly re-adjusted in the normal of the lower mark, and a square pile of 25 feet side at base was raised to a height of 9 feet, enclosing the central isolated pillar 4 feet in diameter which carried a markstone at its summit and another intermediately.

The station was subsequently visited in January and February 1864, on the revision of the Calcutta Longitudinal Series, when the markstones were examined for deflection, and the uppermost markstone was replaced in the normal of the lowermost one, another markstone having been built into the pillar at 3 feet 8 inches below the uppermost one.

1. Gárgája Hill Station, lat. $23^{\circ} 44'$, long. $78^{\circ} 5'$ —observed at in 1825 and 1838—is on the N.W. peak of a small isolated range of sandstone hills of that name; district Bhilsa of the Gwalior territories.

The pillar is solid and contains three marks, the upper 5.54 feet above the lower, which is on a stone imbedded in the foundation. A square platform surrounds the central pillar from which it is isolated by an annulus 3 inches wide. The station of 1825 when visited in 1838 was found uninjured. The circumjacent villages with their distances and bearings are—The hamlet of Kargauli at the foot of the hill to the E., that of Maser to the S. and the large village of Garaspur 6 miles S.E. on the high road from Ságar to Mau (Mhow).

II. Ahmadpur Hill Station, lat. $23^{\circ} 36'$, long. $77^{\circ} 43'$ —observed at in 1825 and 1838—is on an artificial mound of very ancient date on an isolated hill near the village of Ahmadpur; district Bhilsa of the Gwalior territories. A Hindu temple stands on the same mound to the W.

The pillar is solid, 3.75 feet in diameter and built of stones and earth; it contains two marks, the upper 5.38 feet above the lower, which is on a stone at the ground level. A platform 17 feet square surrounds the central pillar from which it is isolated by an annulus 3 inches wide. The station of 1825 when visited in 1838 was found uninjured. The large town of Bhilsa lies about 10 miles S.E.

III. Ander Hill Station, lat. $23^{\circ} 24'$, long. $77^{\circ} 57'$ —observed at in 1825 and 1838—is on the highest point of an isolated hill to the north of the small village of Ander; district Raisen of the Bhopál state.

The pillar is solid, built of stones and earth, and contains two marks, the upper 2.21 feet above the lower, which is engraved on the rock *in situ*. A platform 17 feet square surrounds the central pillar from which it is isolated by an annulus. The station of 1825 when visited in 1838 was found uninjured. The town of Bhilsa lies about 11 miles N.W. and Raisen about 8 miles S.W.

IV. Gidgarh Hill Station, lat. $23^{\circ} 23'$, long. $77^{\circ} 35'$ —observed at in 1825 and 1838—is on the highest point of a hill forming part of a range running north and south in the Bhopál territory. The only practicable approach to the station is by a cart track branching off the high road between Bhilsa and Bhopál, at the head of the hill pass, about 1 mile W.N.W. of the station.

The pillar is solid, built of stones and earth, and contains 3 marks, the lowest engraved on the rock *in situ* and the two others 0.97 feet and 4.72 feet respectively above it. A platform surrounds the central pillar from which it is isolated by an annulus. The platform of 1825 when visited in 1838 was found standing, but the mark-stones had been removed and the mark engraved on the rock in 1838 was placed as nearly in the centre of the platform as practicable. The town of Bhopál lies about 14 miles S. W. and the village of Gidgarh about 2 miles E.

V. Ládi Hill Station, lat. $23^{\circ} 9'$, long. $77^{\circ} 45'$ —observed at in 1825 and 1839—is on the crest of a hill which derives its name of Ládi from a high piece of rock forming a conspicuous object on its west side and is in the Bhopál State. The only cattle road to the station is by a rough track cut up the N. face of the hill.

The pillar is solid, built of stones and earth, and contains two marks, the upper being 2.71 feet above the lower, which is engraved on the rock *in situ* having been placed there in 1825. A platform 17 feet square surrounds the central pillar from which it is isolated by an annulus 3 inches wide. When visited in 1839 the upper mark of the station of 1825 had disappeared. The village of Chiklaud lies about 2 miles S.

VI. Samasgarh Hill Station, lat. $23^{\circ} 6'$, long. $77^{\circ} 24'$ —observed at in 1839—is on a narrow range of sand-stone hills of that name, having the crest studded with elevated platforms of bare rock, on one of which the station has been placed. It is in the Bhopál state.

The pillar is solid, built of stones and earth, and contains three marks, the lowest of which is engraved on the rock *in situ* and the two others are respectively 3 and 4.75 feet above it. A platform 18 feet square surrounds the central pillar from which it is isolated by an annulus 3 inches wide. The town of Bhopál lies about 12 miles N., the village of Samasgarh about 4 miles N. W. and that of Bhorda about 3 miles N. E.

VII. Ránipur Hill Station, lat. $22^{\circ} 59'$, long. $78^{\circ} 6'$ —observed at in 1824 and 1839—is on a large rock rising about 16 feet perpendicularly above the crest of a hill which itself rises nearly perpendicularly above the small villages of Ránipur and Patni and is in the Bhopál State.

The pillar is solid and contains one mark cut on a large piece of stone 15 inches high, firmly cemented to the rock with mortar and isolated from the surrounding circular platform. The mark of 1839 is the same as that employed in 1824. The town of Bari lies about 3 miles N.

VIII. Bhimbat Hill Station, lat. $22^{\circ} 50'$, long. $77^{\circ} 40'$ —observed at in 1824 and 1838—is on a high swell of a hill forming part of a broad sandstone range which extends nearly east and west along the north bank of the Narbada and is in the Bhopál State. The only practicable approach to the station for men with loads is by an ascent commencing about $5\frac{1}{2}$ miles S.E. of the station, near the small village of Tálpura; as on all other sides the hill is surrounded with perpendicular belts of rock.

The pillar is solid, built of stones and earth, and contains two marks, the upper 3.98 feet above the lower, which is engraved on the rock *in situ*. The lower mark of 1838 is the same as that employed in 1824. A platform 17 feet square surrounds the central pillar from which it is isolated by an annulus. Hoshangabad lies about 10 miles S.E.

IX. Morpáni Hill Station, lat. $22^{\circ} 30'$, long. $77^{\circ} 56'$ —observed at in 1824 and 1839—is on a peak near the western extremity of the Mahádeo range of hills; pargana Borda, district Baitúl.

The pillar is solid, built of stones and earth, erected round a piece of rock rising above the surface of the ground and having the mark engraved on it. The mark of 1839 is the same as that employed in 1824. A platform 17 feet square surrounds the central pillar from which it is isolated by an annulus 3 inches wide. The hamlet of Morpáni lies about 2 miles S.W. and the village of Kesla about 4 miles W. on the high road from Hoshangabad to Baitúl.

X. Tek Hill Station, lat. $22^{\circ} 31'$, long. $78^{\circ} 9'$ —observed at in 1824 and 1839—is on a peak of the Mahádeo range of hills; pargana Bábai, district Hoshangabad. At the foot of the hill, about 3 miles from the station, is an old temple having streams flowing on either side and an artificial tank about 100 yards to the east: the place is called Dehra and is said to have been formerly a retreat for dacoits.

The pillar is solid, built of stones and earth, and contains three marks the lowest of which is engraved on the rock *in situ* and is immediately surmounted by a mark-stone. The uppermost mark is 2.98 feet above the mark on the stone. A platform 17 feet square surrounds the central pillar from which it is isolated by an annulus 3 inches wide. The station of 1824 was found in good order with the marks undisturbed: that on the rock was placed there in 1839 in the normal of the former upper mark. The village of Sohágpur, the nearest from which supplies are obtainable, lies about 15 miles N.E.

XI. Narwargarh Hill Station, lat. $22^{\circ} 14'$, long. $77^{\circ} 39'$ —observed at in 1824 and 1839—is on the summit of a high hill of that name; pargana Saulígarh, district Baitúl.

The pillar is solid and has one mark embedded level with the surface of the ground. The mark of 1839 is the same as that employed in 1824. A platform surrounds the central pillar from which it is isolated by an annulus. The hamlet of Belhor lies about 3 miles S. and the large village of Borda about 15 miles N.E.

XII. Dhába Deo Hill Station, lat. $22^{\circ} 5'$, long. $77^{\circ} 58'$ —observed at in 1824 and 1839—is situated on a hill of that name; pargana Dhába, district Baitúl. A cart track leads from Nimpani through the jungle to the foot of the hill.

The pillar is solid and contains two marks, the upper 1·92 feet above the lower, which is at the ground level. The lower mark of 1839 is the same as that employed in 1824. A platform 17 feet square surrounds the central pillar from which it is isolated by an annulus. Baitúl lies about 16 miles S. and the small village of Nimpani about 4 miles W.

XIII. Alampur Hill Station, lat. $22^{\circ} 4'$, long. $77^{\circ} 37'$ —observed at in 1824 and 1839—is situated on the extremity of a spur projecting from a mass of hills forming the W. boundary of the valley which extends from Alampur to Baitúl; pargana Saulígarh, district Baitúl. A cart track is cut up the S. face of the hill on which the station stands.

The pillar is solid, built of stones and earth, and contains two marks, the upper 2·70 feet above the lower, which is at the ground level. A platform 17 feet square surrounds the central pillar from which it is isolated by an annulus 3 inches wide. The station of 1824 when visited in 1839 was found in good order, but contained a markstone at its surface only, in the normal of which the lower mark of 1839 was placed. The small village of Alampur lies about 1 mile S. and the large village of Chinchuli about 6 miles S.E.

XIV. Jágdhar Hill Station, lat. $21^{\circ} 50'$, long. $78^{\circ} 1'$ —observed at in 1824 and 1839—is on the highest point of a hill forming the S.E. boundary of the valley in which Baitúl lies; pargana Baitúl, district Baitúl. A good road up the N. face of the hill leads to the station.

The pillar is solid, built of stone and mortar, and contains two marks, the upper 5·74 feet above the lower, which is imbedded at the ground level. A platform surrounds the central pillar from which it is isolated by an annulus. The station of 1824 when visited in 1839 was found in good order and contained two marks. A new pillar was built and the marks placed in the normal of the lower one of 1824. Baitúl lies about 3 miles N.W. and Jágdhar village about 1 mile N.

XV. Nílgarh Hill Station, lat. $21^{\circ} 46'$, long. $77^{\circ} 42'$ —observed at in 1824 and 1839—is on a high swell of a range of hills bordering the south bank of the Tápti and near a Hindu place of worship so called; pargana Baitúl, district Baitúl. A tolerably good road up the E. side of the hill leads to the station.

The pillar is solid, built of stones and earth, and contains two marks, the upper 2·97 feet above the lower, which is on a stone imbedded at the ground level. A platform 17 feet square surrounds the central pillar from which it is isolated by an annulus 3 inches wide. The station of 1824 when visited in 1839 was found in good order and contained two marks over the lower of which a pillar was built. Baitúl lies about 19 miles E., the hamlet of Badugáon 1 mile W. and the Gond village of Chandri 6 miles N.W.

XVI. Sálbaldi Hill Station, lat. $21^{\circ} 26'$, long. $77^{\circ} 59'$ —observed at in 1824 and 1839—is on the top of a lofty hill of the range of mountains called by natives Sátpura and by Europeans Gáwilgarh; pargana Atner, district Baitúl. The only practicable ascent to the station is from Bikundi on the south side of the hill.

The pillar is solid and contains two marks, the upper 4·03 feet above the lower. A platform surrounds the central pillar from which it is isolated by an annulus. The station of 1824 when visited in 1839 was found in good order. The village of Sálbaldi lies 4 miles E., the village of Bikundi 4 miles S. and Pala, a kasba, 7 miles S.E.

XVII. Dhár Hill Station, lat. $21^{\circ} 29'$, long. $77^{\circ} 36'$ —observed at in 1824 and 1839—is on a very high table-topped hill in the Gáwilgarh range or Sátpura hills; pargana Atner, district Baitúl. The only practicable ascent to the station is from the north viâ Derpáni.

The pillar is solid and contains two marks, the upper 4·96 feet above the lower, which is on a stone imbedded in the foundation. A platform surrounds the central pillar from which it is isolated by an annulus. The station of 1824 when visited in 1839 was found in good order. The village of Dhár is in a transverse mountain valley about 1 mile S.W., Derpáni on a table land 3 miles N. and the large village of Kamla about 5 miles N. W.

XVIII. Ner Hill Station, lat. $21^{\circ} 9'$, long. $77^{\circ} 59'$ —observed at in 1824 and 1839—is on a small building at the S. E. angle of the enclosure surrounding the temple of Pinglai Bhawáni on a low isolated hill about 4 miles W. S. W. of the town called Pinglai Ner; pargana Morshai, district Ellichpur.

The pillar is solid and contains two marks, the upper 19·76 feet above the lower. A temporary scaffolding isolated from the central pillar was used for the observer to tread upon. The lower mark of the station of 1824 (in the floor of the building) when visited in 1839 was found apparently undisturbed. The village of Sawalkhera lies about 2 miles N. of the station.

XIX. Ashti Hill Station, lat. $21^{\circ} 3'$, long. $77^{\circ} 40'$ —observed at in 1824 and 1839—is about 1·5 miles west of the village of that name; pargana Tugáon, district Amráoti, sába Berar.

The pillar is solid, built of brickwork 4 feet in diameter, and raised 18 inches above the pillar of 1824 which is also of brickwork and 6 feet in diameter. The latter when visited in 1839 was found in good order. A temporary scaffolding isolated from the central pillar was used for the observer to tread upon. Tugáon, a kasba, lies about 5 miles N. and the large village of Takalkhera, on the high road, about 4 miles N.E.

XX. Bádáli Hill Station, lat. $20^{\circ} 54'$, long. $77^{\circ} 51'$ —observed at in 1823-24 and 1839—is on an eminent height towards the western edge of a group of basaltic hills lying east of the well known town of Amráoti; pargana Nangao, district Amráoti.

The pillar is solid, built of good stone masonry, and contains three marks the lowest of which is engraved on a large block of basalt and the other two are respectively 2·08 and 4·03 feet above it. A platform surrounds the central pillar from which it is separated by an annulus. The station of 1823 when visited in 1839 was found utterly destroyed and the rock on which it stood excavated to a depth of 5 feet. The station of 1839 was made to coincide with it as nearly as could be estimated. Amráoti lies about 3 miles W. and the village of Bádáli about 1 mile N.W. at the foot of the hill.

XXI. Wírúr or Bírúl Hill Station, lat. $20^{\circ} 49'$, long. $78^{\circ} 8'$ —observed at in 1824 and 1839—is on the higher of two isolated little trap hills situated in the plains south of Bírúl, a jágírdári or máfi village in pargana Talegáon, district Amráoti.

The pillar is solid, built of strong masonry, and contains two marks, the upper 13·72 feet above the lower. A temporary scaffolding was used for the observer to tread upon, and the pillar was banked up to within 8 feet of the top. The station of 1824 when visited in 1839 was found in good order, but was 2·22 feet lower than that of 1839. Damangáon lies about 3 miles E., Badgáon about 4 miles S. and Mandua about 2 miles N.W.

XXII. Badgáon Hill Station, lat. $20^{\circ} 44'$, long. $77^{\circ} 39'$ —observed at in 1823 and 1839—is on a swelling ridge of land about 300 yards south of the village of Badgáon; pargana Kurm, district Amráoti.

The pillar is solid, built of good masonry, and contains three marks the two upper being respectively 13·17 feet and 6·58 feet above the lower. A platform surrounds the central pillar from which it is isolated by an annulus. The station of 1823 when visited in 1839 was found in good order, but had no lower mark. Kurm, a kasba, lies about three miles W. and Mana 9 miles W. The high road between Amráoti and Kárinja passes about 4 miles E. of the station.

XXIII. Ikjhera Hill Station, lat. $20^{\circ} 29'$, long. $78^{\circ} 2'$ —observed at in 1821, 1823 and 1839—is on a steep knife-edged or prismatic shaped hill, locally named Daga, rising consider-

ably higher than the basaltic range of which it forms a part; pargana Talegáon, district Wún. Chaosala, the highest hill of the range, is about 5 miles E.S.E.

The pillar is solid, built of masonry, and contains two marks, the upper 4·47 feet above the lower, which is engraved on the rock *in situ*. A platform surrounds the central pillar from which it is isolated by an annulus. The station of 1821 and 1823 was found in good order in 1839, but it possessed no lower mark. The deserted village of Ikjhera lies about 0·5 mile W. and the large village of Asola about 1·5 miles W.

XXIV. Pilkher Platform Station, lat. $20^{\circ} 28'$, long. $77^{\circ} 40'$ —observed at in 1821, 1823 and 1839—is in some fields about a mile from the southern edge of the table land called Páyan Ghát which bounds the valley of Berar on the south; pargana Kárinja, district Amráoti.

The pillar is solid, built of masonry, and contains two marks, the upper 10·28 feet above the lower. A platform surrounds the central pillar from which it is isolated by an annulus. The station of 1821 and 1823 was found in ruins in 1839, the site being indicated by a mound of earth and the upper markstone was discovered about 8 or 10 yards west. The well known town of Kárinja lies about 6 miles W., Umbalda, a kasba, 2 miles W., Manba 2 miles N.E. and Sukli 1·25 miles S.E.

XXV. Kopdi or Chor Kopri Hill Station, lat. $20^{\circ} 21'$, long. $77^{\circ} 43'$ —observed at in 1821 and 1839—is on an isolated eminence rising above the general level of the trap plateau; pargana Darma, district Wún.

The pillar is solid, built of masonry, and contains two marks, the upper 6·01 feet above the lower, which is engraved on a large stone. A platform surrounds the central pillar from which it is isolated by an annulus. The station of 1821 when visited in 1839 was found in good order. The ruined village of Kopdi lies about 2 miles S., Borgáon 2 miles E. and Bandegáon about 1·5 miles N.N.E.

XXVI. Bám or Kanúba-ki-Tekri Hill Station, lat. $20^{\circ} 15'$, long. $78^{\circ} 3'$ —observed at in 1821 and 1839—is on a peaked eminence rising a little above the flat trap range; pargana Korhar, district Wún.

The pillar is solid, built of good masonry, and contains two marks, the upper 5·37 feet above the lower, which is engraved on a large stone. A platform surrounds the central pillar from which it is isolated by an annulus. The station of 1821 when visited in 1839 was found in good order, but the upper mark differed from the normal of the lower by 11 inches. The deserted village of Bám lies about 2 miles S.E., Terora 6 miles S. and Hinri 3 miles N.E.

XXVII. Sákri Hill Station, lat. $20^{\circ} 0'$, long. $77^{\circ} 45'$ —observed at in 1821 and 1838—is on a range of trap hills 1·5 miles S. of the village of Sákri; pargana Pusad, district Wún.

The pillar is solid, built of good masonry, and contains two marks, the upper 4·63 feet above the lower. A platform surrounds the central pillar from which it is isolated by an annulus. The station of 1821 when visited in 1838 was found in good order but was 10·5 inches lower than the one then employed. The village of Etála lies about 4 miles N., Kaligáon 4 miles E. and Sain Khera 2 miles S.

XXVIII. Máhúr Hill Station, lat. $19^{\circ} 50'$, long. $77^{\circ} 59'$ —observed at in 1821 and 1838—is on a lofty table-topped hill east of the fort from which it is separated by a narrow ravine; pargana Máhúr, district Haidarabad. The road to the math or temple passes a few yards west of the station.

The pillar is solid, built of masonry, and contains three marks, the two upper being respectively 8·07 and 4·00 feet above the lower. A platform surrounds the central pillar from which it is isolated by an annulus. The station of 1821 when visited in 1838 was found apparently in good order, but the upper mark differed considerably from the lower. The town of Máhúr lies 1 mile N. W.

XXIX. Súkli Hill Station, lat. $19^{\circ} 41'$, long. $77^{\circ} 44'$ —observed at in 1821 and 1838—

is on the range 3 miles N. of the village of Súkli; pargana Pusad, district Wún. The hill is also called Apa Sháhi and sometimes Sáhib-log-ka-pahár: the road from Umar Kher to Máhúr passes about 1 mile E. of the station.

The pillar is solid, built of masonry, and contains two marks, the upper 3·33 feet above the lower. A platform surrounds the central pillar from which it is isolated by an annulus. The station of 1821 when visited in 1838 was found apparently in good order, but the upper mark differed 7 inches from the normal of the lower, and the distance between the marks was 2·54 feet. Umar Kher lies about 6·5 miles S.

XXX. Bítargáon Hill Station, lat. $19^{\circ} 34'$, long. $78^{\circ} 0'$ —observed at in 1821 and 1838—is on an eminent table-topped point of a rugged chain of hills 2·75 miles N. of the village of Bítargáon; pargana Umar Kher, district Wún. Near the station is a thatched hut which is a Mahádeo temple.

The pillar is solid, built of masonry, and contains two marks, the upper 6·17 feet above the lower. A platform surrounds the central pillar from which it is isolated by an annulus. The station of 1821 when visited in 1838 was found in a ruinous state, and the markstone had been removed.

XXXI. Terbán Hill Station, lat. $19^{\circ} 18'$, long. $77^{\circ} 43'$ —observed at in 1821 and 1838—is on a table-topped range running east and west having the Bokar valley to the south and the Pain Ganga valley to the north; pargana Hadgáon, district Haidarabad.

The pillar is solid, 4 feet in diameter and built of masonry; it contains two marks, the upper 5·26 feet above the lower. A platform surrounds the central pillar from which it is separated by an annulus. The station of 1821 was denoted by a circle and centre engraved on a large stone which was placed over a truncated mahúa tree around which a platform was built. The stone was not found when the station was re-visited in 1838. The village of Terbán lies about 0·75 miles S. and Bokar or Abu Bakar about 5 miles S.

XXXII. Shivni Hill Station, lat. $19^{\circ} 22'$, long. $78^{\circ} 10'$ —observed at in 1821 and 1838—is on a lofty point of the Nirmal or Sikpal hills, about 2 miles W. of two conspicuous conical hills called Satarwan Konda; district Haidarabad. The hill is locally named Marel-Devi-ka-Guta.

The pillar is solid, built of good masonry, and contains two marks, the upper 4·25 feet above the lower. A platform surrounds the central pillar from which it is isolated by an annulus. The platform of the station of 1821 was in existence in 1838, but the mark had been displaced. The hamlet of Shivni or Seoni lies about 4 miles S. and the kasba of Aparaupet about 6 miles S.E. of Shivni village.

XXXIII. Bhesa Hill Station, lat. $19^{\circ} 6'$, long. $78^{\circ} 1'$ —observed at in 1821 and 1838—is on the higher of two conoidal trap hills and a few yards S.E. of the dargáh of a Muhammadan saint, named Kancha Wali, whose shrine is much frequented by the inhabitants of the circumjacent villages; pargana Bhesa, district Haidarabad.

The pillar is solid, built of masonry, and contains two marks, the upper 4·38 feet above the lower. A platform surrounds the central pillar from which it is isolated by an annulus. The platform of 1821 when visited in 1838 was found in good order and apparently undisturbed. The large kasba of Bhesa lies to the W.

XXXIV. Somtána Hill Station, lat. $19^{\circ} 5'$, long. $77^{\circ} 42'$ —observed at in 1821 and 1838—is upon a hill of an irregular frustum shape, on an eminent part of the range north of the Godávári; pargana Nander, district Haidarabad. The hill is locally known as Balaráj Guta from the tomb of a Muhammadan saint a few hundred yards south of the station.

The pillar is solid, circular, 4 feet in diameter and built of brick and mortar; it contains two marks, the upper 3·12 feet above the lower. A platform surrounds the central pillar from which it is separated by an annulus. The old platform when visited in 1838 was found in good order and apparently undisturbed. The village of Somtána lies in a narrow sequestered valley about 2 miles S.E. It is to be remarked that there are many villages

of this name in this tract of country. The kasba of Talegáon is about 4 miles a little west of south and the large village of Umri about 3 miles in the same direction.

XXXV. Yemsha Hill Station, lat. $18^{\circ} 52'$, long. $78^{\circ} 1'$ —observed at in 1817, 1821 and 1838—is at the N.W. extremity of a cluster of granite hills on the south bank of the Godávári; district Haidarabad. The hill is locally named Kamoli Guta.

The pillar is solid, built of masonry, and contains two marks, the upper 3·68 feet above the lower, which is engraved on the rock *in situ*. A platform surrounds the central pillar from which it is isolated. The station of 1817 and 1821 when visited in 1838 was found in good condition. The village of Yemsha or Yemcham lies about 0·4 of a mile W., Banola about 5 miles E. and the village of Basar, on the opposite bank of the Godávári, 3 miles N.W.

XXXVI. Shiválingápa Hill Station, lat. $18^{\circ} 45'$, long. $77^{\circ} 38'$ —observed at in 1817 and 1838—is on a conspicuous hill rising several hundred feet above the surrounding trap formation; pargana Logáon, district Haidarabad. The hill is named after a gosáin or jogi who established a temple to Mahádeo on its summit with a small village contiguous to it: this village was deserted on the death of the hermit. The temple is built of masonry and is flanked on three sides by mounds of earth and the station is at the eastern extremity of the southern mound.

The pillar is solid and contains two marks, the upper 4·63 feet above the lower. A platform surrounds the central pillar from which it is isolated by an annulus. The station of 1817 when visited in 1838 was found in good order. The village of Dhongáon lies about 2 miles E., that of Betmugra 5 miles S.W; in the latter village is another temple of a similar description also established by Shiválingápa. The high road from Haidarabad to Hingoli lies about 8 miles S.W.

XXXVII. Yanágápáli Hill Station, lat. $18^{\circ} 26'$, long. $78^{\circ} 0'$ —observed at in 1817 and 1838—is on a long narrow ridge at the western extremity of the table land; pargana Bánswára, district Haidarabad.

The pillar is solid, built of masonry, and contains two marks, the upper 3·29 feet above the lower. A platform surrounds the central pillar from which it is isolated by an annulus. The markstone of the station of 1817 when visited in 1838 was found about 4 feet west of the mound of earth in the centre of which it had been originally placed. The new station was made to coincide, as nearly as could be estimated, with the position of the old. The small hamlet of Yanágápáli is at the S. E. foot of the hill and the large village of Konapur 2·5 miles S. S. E.

XXXVIII. Baktápur Hill Station, lat. $18^{\circ} 30'$, long. $77^{\circ} 37'$ —observed at in 1817, 1819, 1838 and 1841—is on the N. E. extremity of a small hill, or eminence rising above a table land apparently connected with the Kaulás range; pargana Madnúr, district Haidarabad.

The pillar is solid, built of masonry, and contains two marks, the upper 4·03 feet above the lower. A platform surrounds the central pillar from which it is separated by an annulus. The station of 1817 and 1819 when visited in 1838 was found in good order. In 1841 it was again visited for the purpose of originating the Bombay Longitudinal Series; but no alteration in its construction appears to have been made. The village of Baktápur is about 200 yards E., Madnúr, a large kasba, about 2 miles E. and Deglúr about 4 miles N.

XXXIX. Burgápáli Hill Station, lat. $18^{\circ} 17'$, long. $77^{\circ} 45'$ —observed at in 1817, 1822, 1838 and 1841—is on a small elevation on a table land 3·5 miles south of Kaulás, which is a large fortified place and the capital of the ancient sarkár of that name; pargana Kaulás, district Haidarabad.

The pillar is solid, built of masonry, and contains two marks, the upper 4·00 feet above the lower. A platform surrounds the central pillar from which it is isolated by an annulus. The station of 1817 when visited in 1838 was found apparently in good order but the upper mark differed 2 feet from the normal of the old one. The hamlet of Burgápáli lies about 1 mile E. A road or pathway from Kaulás to Tarkal runs a few feet west of the platform.

XL. Manganál Hill Station, lat. $18^{\circ} 14'$, long. $77^{\circ} 25'$ —observed at in 1819 and 1841—is on a conspicuous hill about 150 feet above the general level of the table land; pargana Aurad, district Haidarabad. An image of Lachmi stands close to the platform, from which circumstance the hill is locally known as Lachmi-Devi-ka-pahár.

The pillar is solid and contains two marks, the upper 1.83 feet above the lower. A platform surrounds the central pillar from which it is isolated by an annulus. The platform of 1819 when visited in 1841 had been destroyed. The villages of Manganál and Khandokheri are both situated in narrow tortuous valleys, the former 2 miles E. by S. and the latter $1\frac{1}{2}$ miles N. W. The kasba village of Aurad lies 3 miles N. E.

XLI. Báchápáli Hill Station, lat. $18^{\circ} 10'$, long. $77^{\circ} 55'$ —observed at in 1817, 1838 and 1869—is upon a small granite hill, about 300 feet high, covered with thick jungle; village Masanpáli, pargana Náráin Khera, district Haidarabad. The hill is locally named Dewan Guta.

The pillar of 1838 was solid and contained two marks, the upper 1.38 feet above the lower, which was engraved on the rock *in situ* and was identical with that established in 1817; a dry stone wall 14 feet square and 2 feet thick was built round the central pillar from which it was isolated by a vacant space which was floored with poles &c. for the observer to tread upon. When the station was visited in 1869, for the purpose of originating the Bider Longitudinal Series, the upper mark of 1838 having been found removed, the pillar was entirely rebuilt and a new upper mark placed at exactly 1.38 feet above and in the normal of the lower mark.

XLII. Dámargída Observatory Station, lat. $18^{\circ} 3'$, long. $77^{\circ} 43'$ —observed at in 1815, 1817, 1819, 1838, 1840 and 1841—is on an extensive range of heights, formed of basaltic rocks, bounding the Manjra valley on the north; pargana Náráin Khera, district Haidarabad. The road from Chilargi to Hangarga runs a few yards E. of the Observatory.

The Observatory contains two piers for instruments, 8 feet apart and due east and west of each other. The eastern one was employed for the horizontal observations. The piers are both marked at the level of the ground by a circle and dot on a piece of brass mounted in a large basalt stone firmly imbedded in the masonry. Below this level similar marks are also inserted in the masonry, viz., in the east pillar at 2.42 feet in the west at 3.85 feet. The floor of the Observatory being 5 feet above ground the usual marks are also inserted at that level. The only trace found of the station of 1815 and 1819 was a small circular platform of masonry, about 7 feet in diameter and 6 inches deep: no markstones were found. The eastern pier was made to occupy as nearly as possible the centre of this platform. The village of Dámargída lies about 1 mile S. W., Náráin Khera about 6 miles E. and Chilargi about 5 miles a little W. of S.

XLIII. Bider base-line, West End Station, lat. $17^{\circ} 58'$, long. $77^{\circ} 34'$ —observed at in 1840 and 1841—is on a stony ridge near the hamlet of Bápúr, and is situated on the lands of Markal village; pargana Bider, district Haidarabad. The station is not on the highest part of the ridge, having been selected at a lower level for convenience in measuring the base-line.

The following description is taken from the original record by Colonel Everest:—

“The platform is 16.9 inches high with a foundation of 21.5 inches on basalt rock. The distance between upper and lower marks is 21.4 inches; the marks are dots engraved on brass plugs, fixed in long basalt stones by means of lead. The pier for the great theodolite is of stone masonry 4 feet in diameter and circumscribed by an annulus also of masonry, by which it is isolated from the rest of the platform. The rock *in situ* occurs 3 inches below the surface of the ground, and therefore the footing of the pier has been sunk 18.5 inches into the rock; the latter is a basaltic trap of a friable nature, readily splitting into small rhomboidal fragments, and on account of this peculiarity of structure it was impracticable to mark the rock itself.” (Everest's Meridional Arc of India, 1847, page 73.)

The circumjacent places, with their distances and bearings are as follows; Bider fortress 2 miles S.; Gadgi village 1.4 miles S. E.; the mausoleum near Fathipur 1.5 miles N. E., and Bankeli village nearly 1 mile N. This station of 1840-41 is *not* the same as that observed at in 1815 by Colonel Lambton, all vestige of which had been obliterated when it was visited in 1840.

XLIV. Dúdála Hill Station, lat. $17^{\circ} 56'$, long. $77^{\circ} 55'$ —observed at in 1814, 1815, 1838, 1840 and 1869—is on the range of highlands which extend in an east and west direction along the north bank of the Manjra river; pargana Tekmahál district Haidarabad.

The pillar is solid, built of masonry, and contains two marks, the upper 2·74 feet above the lower. A platform surrounds the central pillar from which it is isolated by an annulus. The station of 1815 and 1819 was found marked by a granite stone measuring $16 \times 12 \times 12$ inches the mark on which was 6 inches above the lower mark of 1838 and 1840. The only change made in 1869 was the re-building of the platform. The village of Dúdála lies about 1 mile S., Aladurgám 3 miles E. and Udatpur 2 miles S.E.

XLV. Bider base-line, East End Station, lat. $17^{\circ} 54'$, long. $77^{\circ} 39'$ —observed at in 1840—is in a field appertaining to Malgi village which is distant from it 1·2 miles W.; pargana Bider, district Haidarabad.

The following description is taken from the original record by Colonel Everest:—

“The platform is 17 inches high and constructed on the isolating principle, the pier and annulus being both of stone masonry. There are three marks in the pier; an upper mark 17 inches above the ground and a middle and lower mark at 4 inches and 33·75 inches respectively below the surface. The marks are engraved on brass plugs, fixed in long basalt stones.” (Everest's Meridional Arc of India, 1847, page 73.)

Ratnapur village is about 1 mile N.E., and the station of Bider 5 miles W.N.W. This station of 1840 is *not* the same as that observed at in 1815 by Colonel Lambton which could only be partially traced when the station was visited in 1840.

XLVI. Malgi Hill Station, lat. $17^{\circ} 53'$, long. $77^{\circ} 39'$ —observed at in 1840—is near the northern extremity of a hill locally called Boiar Ghát in the vicinity of the village of Malgi; pargana Bider, district Haidarabad.

The pillar is solid, built of masonry, 4 feet in diameter, and contains two marks, the upper 1·47 feet above the lower, which is engraved on the rock *in situ*. A platform 16 feet square surrounds the central pillar from which it is isolated by an annulus 2½ inches wide. No trace of Colonel Lambton's station of 1815 could be found, the markstone having been discovered lying at the foot of the cliff. The village of Malgi lies about 0·75 miles N.E.

XLVII. Shilápáli Platform Station, lat. $17^{\circ} 46'$, long. $77^{\circ} 43'$ —observed at in 1814, 1815, 1840 and 1872—is on an earthen mound 36 feet above the table land; district Haidarabad.

The pillar is solid, built of masonry, and contains 4 marks of which the second, third and fourth are respectively 3·18, 5·88 and 11·31 feet below the upper. A platform surrounds the central pillar from which it is isolated by an annulus. No trace of the station of 1814-15 could be found in 1840 except a markstone which was discovered lying 3 or 4 yards to the west. When the station was last visited in 1872, on the revision of the Great Arc triangulation the upper mark was found apparently undisturbed, but the platform was completely broken down. The small village of Shilápáli lies about 1 mile E., Sangam about 4 miles E. and Mangi 2·5 miles N.: the two latter villages are on the high road from Bider to Haidarabad.

W. H. COLE.

ADDENDUM TO DESCRIPTION OF PRINCIPAL STATIONS.

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 1877, made by the Civil Officials to whose care the stations have been committed.

Spellings of many proper names as given here are in keeping with those published in lists circulated by Government.

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
(IV)	Kámkhera	Sironj	Sironj	Imláni	Visited by Lient. C. Strahan, R.E., of the Topographical Survey, in 1870, and reported by him to be in good order.
(V)	Bhaunrása	I'sagarh	Bhaunrása	Bhaunrása	
†	..	..	..	..	Visited by Bábu Narsing Dás, Native Surveyor of the G. T. Survey, in 1867, by whom the upper mark-stone was replaced at the height specified in the description of the stations.
II	Ahmadpur	I'sagarh	Bhílsa	..	
III	Andher	Bhopal	Raesen	Andher	Visited by Captain R. V. Riddell, R.E., of the Topographical Survey, in 1871, who raised the upper mark-stone 5·5 inches.
IV	Gidgarh	„	Diwánganj	Gidgarh	Visited by Captain R. V. Riddell, in 1871, and reported by him to be in good order.
V	Ládi	„	Tál	Chiklaud	Visited by Captain R. V. Riddell, in 1871, who found the pillar completely destroyed; he dug down to the lower mark on the solid rock and built another pillar 7·00 feet in height and placed a mark-stone in its surface which is 4·29 feet higher than that given in the description.

† No report received from the Official of the Native State in which this station lies.

No.	Local name	District	Pargana, &c.	Village	Remarks
VI	Samasgarh	Bhopal	Samasgarh	Bawalikhera	Visited by Captain R. V. Riddell, in 1871, who found the pillar and platform in ruins; he built another pillar and placed a mark in its surface which is 5 feet above the lower mark found on the solid rock.
VII	Ránípur	"	Bári	Kansia	Visited by Captain R. V. Riddell, in 1871, who raised the upper slab 9 inches.
VIII	Bhimbat	"	Mardánpur	Bhim Koti (deserted)	Visited by Captain R. V. Riddell, in 1871, and reported by him to be in good order.
IX	Morpáni	Betúl	Tah. Betúl, Thá. Sháhpur	Morpáni	Visited by Mr. J. Mulheran of the Topographical Survey, in 1867, by whom protecting pillars were erected over the upper marks, afterwards by Bábu Narsing Dás in 1868, who found them in good order.
X	Tek	Hoshangabad	Tah., Par. and Thá. Sohágpur	Tek (deserted)	
XI	Narwargarh	Betúl	Tah. Betúl, Thá. Sháhpur	Belhar Hamlet	
XII	Dhába Deo	"	Betúl	Nimpáni	
XIII	Alampur	"	Tah. Betúl, Thá. Chicholi	Alampur	
XIV	Jágdhar	"	Betúl	Jágdhar Hamlet	
XV	Nílgarh	"	Tah. Betúl, Thá. Chicholi	Badgaon	
XVI	Sálbardi	"	Tah. Betúl, Thá. Atner	Sálbardi	
XVII	Dhár	"	Tah. Betúl, Thá. Sháhpur	Dhár	
XVIII	Ner	Amráoti	Par. Ner, Ta. Amráoti	Ner		Visited by Bábu Narsing Dás in 1868 and left by him in good repair.
XIX	Ashti	"	Par. Thugaon, Ta. Amráoti	Ashti	Visited by Bábu Narsing Dás in 1868, by whom the upper mark was replaced at a height of 14 feet above the lower.
XX	Badáli	"	Par. Nándgaon Peth, Ta. Amráoti	Badáli	Visited by Bábu Narsing Dás in 1868 and left by him in good repair.
XXI	Vírúr	"	Par. Talegaon, Ta. Chándor	Vírúr	
XXII	Badgaon	"	Par. Kúram, Ta. Murtazapur	Badgaon	

Tah. stands for Tahsil, Thá. for Thána, Par. for Pargana and Ta. for Taluk.

No.	Local name	District	Pargana, &c.	Village	Remarks
XXIII	Ikjhera	Wún	Par. Ráni Amráoti, Ta. Yeotmál	Ikjhera	Visited by Bábu Narsing Dás in 1868 by whom the upper mark-stone was replaced at the height specified in the description of the station.
XXIV	Pilkher	Amráoti	Par. Kúram, Ta. Murtazapur	Pilkher	} Visited by Bábu Narsing Dás in 1868 and left by him in good repair.
XXV	Kopri	Wún	Par. and Ta. Dárwaha	Kopri	
XXVI †	Bám	"	Par. Kúrad, Ta. Yeotmál	Bám	Visited by Bábu Narsing Dás in 1868, who found both the upper and lower mark-stones removed.
XXVII	Sákra	"	Par. Chikni, Ta. Dárwaha	Sákra	} Visited by Bábu Narsing Dás in 1868 and left by him in good repair.
XXVIII †	..	..	..	..
XXIX	Sukli	Bassein	Par. Umarkhed, Ta. Pusad	Sukli	Visited by Mr. C. P. Torrens of the G.T. Survey, in 1873, by whom the upper mark-stone was replaced at the height specified in the description of the station.
XXX	Bitargaon	Bassein	Par. Umarkhed, Ta. Pusad	Mania	} Visited by Bábu Narsing Dás in 1868 and left by him in good repair.
XXXI		..	..	..
XXXII †	} No reports received from the Officials of the Native States in which these Stations lie.	..	..	..	Visited by Bábu Narsing Dás in 1868, who found both the upper and lower mark-stones removed.
XXXIII		..	..	..	} Visited by Bábu Narsing Dás in 1868 and left by him in good repair.
XXXIV		..	..	..
XXXV †		..	..	..	Mr. C. Lane reported in 1868 that "no vestige of the pillar or platform remains, these having been demolished and a temple built over the site about 15 years ago." This information was confirmed by Lieut. M. W. Rogers, R.E., in 1873.
XXXVI		..	..	..	Visited by Bábu Narsing Dás in 1868 and left by him in good repair.

Par. Stands for Pargana and Ta. for Taluk. † No report received from the Official of the Native State in which this station lies.

No.	Local name	District	Pargana, &c.	Village	Remarks
XXXVII	No reports received from the Officials of the Native States in which these Stations lie.	..	..	..	Visited by Bábu Narsing Dás in 1868, by whom the upper mark-stone was replaced at the height specified in the description of the station.
XXXVIII		..	..	..	} Visited by Bábu Narsing Dás in 1868 and left by him in good repair.
XXXIX		..	..	..
XL		..	..	..
XLI		..	..	..	..
XLII		..	..	..	} Visited by Bábu Narsing Dás in 1868 and left by him in good repair.
XLIII		..	..	..
XLIV		..	..	..	..
XLV		..	..	..	} Visited by Bábu Narsing Dás in 1868 and left by him in good repair.
XLVI		..	..	..
XLVII†	..	..	..	..

May 1878.

J. B. N. HENNESSEY,

In charge of Computing Office.

GREAT ARC MERIDIONAL SERIES—SECTION 18° TO 24°.

PRINCIPAL TRIANGULATION,

TRIANGLES.

No. of triangle	Station	Spherical excess	Corrected plane angle			Distance		
						Log. feet	Feet	Miles
1	Bhaorása, (V)	1'18	67	45	0'74	5'1666933	146788'9	27'801
	Kámkhera, (IV)	1'19	68	23	50'57	5'1686679	147457'9	27'928
	Gárgája, I	1'18	43	51	8'69	5'0409071	109877'1	20'810
2	Kámkhera, (IV)	1'33	54	7	43'56	5'1192218	131589'7	24'922
	Gárgája, I	1'33	61	11	28'21	5'1531760	142290'5	26'949
	Ahmadpur, II	1'34	64	40	48'23	5'1666933	146788'9	27'801
3	Gárgája, I	'98	48	2	33'12	5'0223105	105271'4	19'938
	Ahmadpur, II	'98	63	35	31'29	5'1030853	126790'1	24'013
	Ander, III	'98	68	21	55'59	5'1192218	131589'7	24'922
4	Ahmadpur, II	'74	75	22	1'26	5'0818193	120731'2	22'866
	Ander, III	'73	47	6	13'10	4'9609984	91411'0	17'313
	Gidgarh, IV	'73	57	31	45'64	5'0223105	105271'4	19'938
5	Gidgarh, IV	'86	62	1	30'05	5'0644357	115994'0	21'969
	Ander, III	'86	51	9	45'81	5'0098085	102305'4	19'376
	Ládi, V	'86	66	48	44'14	5'0818193	120731'2	22'866

NOTES.—1. The values of the side are given in the same line with the opposite angle.
2. Kámkhera, (IV) and Bhaorása, (V) appertain to the Sironj base-line figure.

No. of triangle	Station	Spherical excess	Corrected plane angle			Distance		
						Log. feet	Feet	Miles
6	Ander, III	1'20	54	3	25'07	5'1228169	132683'5	25'129
	Ládi, V	1'20	80	53	22'53	5'2090325	161820'1	30'648
	Ránipur, VII	1'20	45	3	12'40	5'0644357	115994'0	21'969
7	Ládi, V	1'20	78	30	38'27	5'1999294	158463'5	30'012
	Ránipur, VII	1'20	46	21	3'84	5'0682084	117006'1	22'160
	Bhimbat, VIII	1'20	55	8	17'89	5'1228169	132683'5	25'129
8	Gidgarh, IV	'88	63	57	10'73	5'0759606	119113'4	22'559
	Ládi, V	'88	65	32	38'84	5'0816495	120684'0	22'857
	Samasgarh, VI	'87	50	30	10'43	5'0098985	102305'4	19'376
9	Ládi, V	1'02	68	14	31'06	5'1220875	132460'8	25'087
	Samasgarh, VI	1'02	55	7	27'83	5'0682084	117006'1	22'160
	Bhimbat, VIII	1'02	56	38	1'11	5'0759606	119113'4	22'559
10	Ránipur, VII	1'84	52	18	37'18	5'1883672	154300'5	29'224
	Bhimbat, VIII	1'85	73	19	50'34	5'2713622	186793'7	35'378
	Morpáni, IX	1'85	54	21	32'48	5'1999294	158463'5	30'012
11	Bhimbat, VIII	1'66	38	38	40'99	5'1397770	137967'5	26'130
	Morpáni, IX	1'67	97	3	18'27	5'3409511	219255'8	41'526
	Narwargarh, XI	1'67	44	18	0'74	5'1883672	154300'5	29'224
12	Morpáni, IX	1'21	48	58	27'53	5'0742012	118631'8	22'468
	Narwargarh, XI	1'21	69	41	53'22	5'1687368	147481'2	27'932
	Dhába Deo, XII	1'21	61	19	39'25	5'1397770	137967'5	26'130
13	Ránipur, VII	'99	22	59	38'24	4'8631415	72969'5	13'820
	Morpáni, IX	'99	67	22	41'37	5'2366030	172426'1	32'656
	Tek, X	1'00	89	37	40'39	5'2713622	186793'7	35'378
14	Bhimbat, VIII	'75	17	51	7'90	4'8631415	72969'5	13'820
	Morpáni, IX	'76	121	44	15'93	5'3062787	202431'8	38'339
	Tek, X	'76	40	24	36'17	5'1883672	154300'5	29'224
15	Morpáni, IX	'50	141	12	22'87	5'3013167	200132'1	37'904
	Tek, X	'50	25	35	19'84	5'1397770	137967'5	26'130
	Narwargarh, XI	'49	13	12	17'29	4'8631415	72969'5	13'820
16	Morpáni, IX	'85	92	13	53'78	5'2229061	167072'9	31'643
	Tek, X	'85	61	53	33'47	5'1687368	147481'2	27'932
	Dhába Deo, XII	'85	25	52	32'75	4'8631415	72969'5	13'820
17	Narwargarh, XI	1'36	58	14	26'90	5'1697134	147813'3	27'995
	Dhába Deo, XII	1'36	78	43	37'82	5'2316972	170489'3	32'290
	Nilgarh, XV	1'35	43	1	55'28	5'0742012	118631'8	22'468
18	Dhába Deo, XII	'85	48	41	10'58	5'0454236	111025'7	21'028
	Nilgarh, XV	'85	40	56	47'32	4'9861981	96872'0	18'347
	Jágdhar, XIV	'85	90	22	2'10	5'1697134	147813'3	27'995

PRINCIPAL TRIANGULATION—TRIANGLES.

No. of triangle	Station	Spherical excess	Corrected plane angle			Distance		
						Log. feet	Feet	Miles
19	Narwargarh, XI	.55	71	53	79.4	5.0628796	115579.2	21.890
	Dhába Deo, XII	.55	30	48	47.01	4.7944285	62291.5	11.798
	Alampur, XIII	.56	77	18	5.05	5.0742012	118631.8	22.468
20	Dhába Deo, XII	.88	96	36	2.17	5.2017038	159112.3	30.135
	Alampur, XIII	.87	37	12	49.97	4.9861931	96872.0	18.347
	Jágdhar, XIV	.88	46	11	7.86	5.0628796	115579.2	21.890
21	Alampur, XIII	.97	44	13	40.14	5.0454236	111025.7	21.028
	Jágdhar, XIV	.97	44	10	53.24	5.0450622	110933.4	21.010
	Nilgarh, XV	.98	91	35	26.62	5.2017038	159112.3	30.135
22	Jágdhar, XIV	1.22	73	40	4.71	5.1924010	155740.3	29.496
	Nilgarh, XV	1.22	63	9	55.06	5.1608059	144812.5	27.427
	Sálbaldi, XVI	1.21	43	10	0.23	5.0454236	111025.7	21.028
23	Nilgarh, XV	1.11	55	38	26.35	5.1149035	130287.7	24.676
	Sálbaldi, XVI	1.10	43	41	5.27	5.0374625	109009.1	20.646
	Dhár, XVII	1.11	80	40	28.58	5.1924010	155740.3	29.496
24	Jágdhar, XIV	.83	30	17	10.69	5.0374625	109009.1	20.646
	Nilgarh, XV	.84	118	48	22.90	5.2773849	189402.2	35.872
	Dhár, XVII	.84	30	54	26.41	5.0454236	111025.7	21.028
25	Sálbaldi, XVI	1.02	97	44	35.85	5.2422508	174683.1	33.084
	Dhár, XVII	1.02	34	36	21.77	5.0005242	100120.8	18.962
	Ner, XVIII	1.02	47	39	2.38	5.1149035	130287.7	24.676
26	Dhár, XVII	1.40	40	5	45.61	5.0608621	115043.5	21.789
	Ner, XVIII	1.40	61	57	18.47	5.1976828	157046.0	29.857
	Ashti, XIX	1.40	77	56	55.92	5.2422508	174683.1	33.084
27	Sálbaldi, XVI	1.56	59	44	43.43	5.1976828	157046.0	29.857
	Dhár, XVII	1.57	74	42	8.23	5.2456049	176037.4	33.340
	Ashti, XIX	1.56	45	33	8.34	5.1149035	130287.7	24.676
28	Ner, XVIII	.62	42	26	54.40	4.9000861	79448.6	15.047
	Ashti, XIX	.62	59	46	48.38	5.0073936	101717.0	19.265
	Bádáli, XX	.63	77	46	17.22	5.0608621	115043.5	21.789
29	Ashti, XIX	.56	53	20	23.96	4.9564439	90457.4	17.132
	Bádáli, XX	.56	81	51	56.29	5.0477737	111628.1	21.142
	Badgáon, XXII	.56	44	47	39.75	4.9000861	79448.6	15.047
30	Bádáli, XX	1.12	70	58	40.26	5.2077587	161346.2	30.558
	Badgáon, XXII	1.13	77	0	53.69	5.2208965	166301.7	31.497
	Ikjhera, XXIII	1.12	32	0	26.05	4.9564439	90457.4	17.132
31	Ner, XVIII	.79	49	30	38.32	5.0014281	100329.4	19.002
	Bádáli, XX	.80	80	2	29.41	5.1137205	129933.3	24.609
	Wirúr, XXI	.79	50	26	52.27	5.0073936	101717.0	19.265

No. of triangle	Station	Spherical excess	Corrected plane angle			Distance		
						Log. feet	Feet	Miles
32	Bádáli, XX	1'00	49	20	32'71	5'1017952	126414'0	23'942
	Wírúr, XXI	1'00	93	38	18'46	5'2208965	166301'7	31'497
	Ikjhera, XXIII	1'00	37	1	8'83	5'0014281	100329'4	19'002
33	Badgáon, XXII	'99	53	2	1'15	5'1102996	128913'9	24'416
	Ikjhera, XXIII	'99	37	1	19'71	4'9874446	97150'4	18'400
	Pilkher, XXIV	'99	89	56	39'14	5'2077587	161346'2	30'558
34	Ikjhera, XXIII	'48	22	56	20'38	4'7018029	50327'2	9'532
	Pilkher, XXIV	'48	70	21	2'81	5'0849603	121607'5	23'032
	Kopdi, XXV	'49	86	42	36'81	5'1102996	128913'9	24'416
35	Ikjhera, XXIII	'77	67	22	7'61	5'0755828	119009'8	22'540
	Kopdi, XXV	'76	42	2	39'15	4'9362635	86350'2	16'354
	Bám, XXVI	'77	70	35	13'24	5'0849603	121607'5	23'032
36	Kopdi, XXV	1'08	68	20	0'28	5'1348543	136412'5	25'836
	Bám, XXVI	1'08	57	29	37'23	5'0926745	123786'9	23'444
	Sákri, XXVII	1'08	54	10	22'49	5'0755828	119009'8	22'540
37	Bám, XXVI	1'08	41	0	19'86	5'0116605	102721'3	19'455
	Sákri, XXVII	1'09	78	22	49'54	5'1856768	153347'5	29'043
	Máhúr, XXVIII	1'08	60	36	50'60	5'1348543	136412'5	25'836
38	Sákri, XXVII	'74	52	30	2'73	4'9867116	96986'6	18'369
	Máhúr, XXVIII	'74	70	19	49'35	5'0611296	115114'4	21'802
	Súkli, XXIX	'74	57	10	7'92	5'0116605	102721'3	19'455
39	Máhúr, XXVIII	'62	60	56	58'57	4'9843045	96450'5	18'267
	Súkli, XXIX	'62	57	31	19'99	4'9688337	93075'2	17'628
	Bitargáon, XXX	'63	61	31	41'44	4'9867116	96986'6	18'369
40	Súkli, XXIX	1'01	67	22	24'12	5'1425093	138838'3	26'295
	Bitargáon, XXX	1'01	72	44	35'75	5'1572893	143644'6	27'205
	Terbán, XXXI	1'01	39	53	0'13	4'9843045	96450'5	18'267
41	Bitargáon, XXX	1'05	81	27	48'43	5'1960726	157062'5	29'747
	Terbán, XXXI	1'05	37	35	20'55	4'9862361	96880'5	18'349
	Shivni, XXXII	1'05	60	56	51'02	5'1425093	138838'3	26'295
42	Terbán, XXXI	1'03	43	17	7'81	5'0331644	107935'5	20'442
	Shivni, XXXII	1'03	50	35	59'35	5'0851006	121646'8	23'039
	Bhesa, XXXIII	1'04	86	6	52'84	5'1960726	157062'5	29'747
43	Terbán, XXXI	'66	63	35	25'33	5'0459778	111167'5	21'054
	Bhesa, XXXIII	'65	37	52	9'25	4'8819161	76193'2	14'431
	Somtána, XXXIV	'66	78	32	25'42	5'0851006	121646'8	23'039
44	Bhesa, XXXIII	'79	85	37	16'60	5'1392157	137789'4	26'096
	Somtána, XXXIV	'79	40	49	21'76	4'9558774	90339'4	17'110
	Yemsha, XXXV	'79	53	33	21'64	5'0459778	111167'5	21'054

PRINCIPAL TRIANGULATION—TRIANGLES.

No. of triangle	Station	Spherical excess	Corrected plane angle			Distance		
						Log. feet	Feet	Miles
45	Somtána, XXXIV	1'19	62	45	46'49	5'1347521	136380'4	25'830
	Yemsha, XXXV	1'19	53	18	3'06	5'0898493	122984'2	23'292
	Shiválingápa, XXXVI	1'19	63	56	10'45	5'1392157	137789'4	26'096
46	Yemsha, XXXV	1'56	70	56	42'02	5'2261022	168307'0	31'876
	Shiválingápa, XXXVI	1'55	59	4	1'06	5'1839472	152738'0	28'928
	Yanágápáli, XXXVII	1'55	49	59	16'02	5'1347521	136380'4	25'830
47	Shiválingápa, XXXVI	'97	51	30	37'63	5'1214918	132279'3	25'053
	Yanágápáli, XXXVII	'96	33	18	8'55	4'9675022	92790'2	17'574
	Baktápur, XXXVIII	'97	95	11	13'82	5'2261022	168307'0	31'876
48	Yemsha, XXXV	'93	27	12	17'53	4'9675022	92790'2	17'574
	Shiválingápa, XXXVI	'94	110	34	41'17	5'2787869	190014'6	35'988
	Baktápur, XXXVIII	'94	42	13	1'30	5'1347521	136380'4	25'830
49	Yanágápáli, XXXVII	'75	42	6	3'86	4'9502071	89167'6	16'888
	Baktápur, XXXVIII	'75	53	51	37'42	5'0310337	107407'3	20'342
	Burgápáli, XXXIX	'76	84	2	18'72	5'1214918	132292'3	25'053
50	Yanágápáli, XXXVII	'59	41	33	23'15	4'8770281	75340'4	14'269
	Burgápáli, XXXIX	'59	67	24	42'17	5'0206181	104862'0	19'860
	Báchápáli, XLI	'59	71	1	54'68	5'0310337	107407'3	20'342
51	Burgápáli, XXXIX	'44	64	11	32'42	4'9205650	83284'7	15'774
	Báchápáli, XLI	'43	61	16	50'79	4'9091889	81131'4	15'366
	Dámargáda, XLII	'43	54	31	36'79	4'8770281	75340'4	14'269
52	Báchápáli, XLI	'47	61	35	45'58	4'9254126	84210'5	15'951
	Dámargáda, XLII	'47	57	57	45'34	4'9093630	81163'9	15'372
	Dúdála, XLIV	'47	60	26	29'08	4'9205650	83284'7	15'774
53	Dámargáda, XLII	'40	76	6	28'38	4'9619527	91612'1	17'351
	Dúdála, XLIV	'39	40	42	49'48	4'7892797	61557'3	11'659
	Bider base-line, East End, XLV	'40	63	10	42'14	4'9254126	84219'5	15'951
54	Dámargáda, XLII	'19	39	19	37'83	4'6188693	41578'6	7'875
	Bider base-line, East End, XLV	'19	70	54	36'54	4'7923878	61999'4	11'742
	Bider base-line, West End, XLIII	'19	69	45	45'63	4'7892797	61557'3	11'659
55	Baktápur, XXXVIII	'76	63	55	40'39	5'0558298	113718'1	21'538
	Burgápáli, XXXIX	'76	71	17	50'71	5'0788764	119915'8	22'711
	Manganál, XL	'76	44	46	28'90	4'9502071	89167'6	16'888
56	Burgápáli, XXXIX	'70	73	3	32'73	5'0751850	118900'8	22'519
	Manganál, XL	'69	40	44	53'28	4'9091889	81131'4	15'366
	Dámargáda, XLII	'70	66	11	33'99	5'0558298	113718'1	21'538
57	Manganál, XL	'53	31	9	52'82	4'7923878	61999'4	11'742
	Dámargáda, XLII	'53	65	52	54'95	5'0388084	109347'4	20'710
	Bider base-line, West End, XLIII	'53	82	57	12'23	5'0751850	118900'8	22'519

No. of triangle	Station	Spherical excess	Corrected plane angle			Distance		
						Log. feet	Feet	Miles
58	Dámargída, XLII	"	°	'	"			
	Bider base-line, West End, XLIII	'19	37	4	49'10	4'6074258	40497'3	7'670
	Malgi, XLVI	'20	75	32	29'57	4'8131791	65039'8	12'318
59	Dámargída, XLII	'19	67	22	41'33	4'7923878	61999'4	11'742
	Malgi, XLVI	'43	78	21	17'08	4'9798012	95455'6	18'079
	Dúdála, XLIV	'42	59	47	0'26	4'9254126	84219'5	15'951
60	Dúdála, XLIV	'42	41	51	42'66	4'8131791	65039'8	12'318
	Malgi, XLVI	'34	28	34	9'80	4'6704935	46826'7	8'869
	Shilápáli, XLVII	'34	74	18	27'65	4'9743669	94268'6	17'854
61	Dámargída, XLII	'34	77	7	22'55	4'9798012	95455'6	18'079
	Dúdála, XLIV	'59	59	20	41'76	4'9743669	94268'6	17'854
	Shilápáli, XLVII	'59	70	25	52'63	5'0139027	103253'0	19'555
		'59	50	13	25'61	4'9254126	84219'5	15'951

May 1876.

J. HERSCHEL.

GREAT ARC MERIDIONAL SERIES—SECTION 18° TO 24°.

SECONDARY TRIANGULATION. TRIANGLES.

PRINCIPAL-AUXILIARY STATIONS, AND INTERSECTED POINTS.

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

No. of triangle	Station	Corrected plane angle	Distance			No. of triangle used	Theodolite used	Station	Corrected plane angle	Distance			Theodolite used
			Log. feet	Feet	Miles					Log. feet	Feet	Miles	
62	Kámkhera, (IV)	51 50 22	5 077693	119590	22 650	67	Inch	Bhaorása, (V)	0 1 "	4 628293	42491	8 047	Inch
	Ahmadpur, II	17 28 33	4 659675	45675	8 650			Púper	21 38 4	5 069703	115001	21 781	
	Púper	h.s.	5 153176	142291	26 949			Kúa	64 36 19	5 017507	104114	19 718	
63	Kámkhera, (IV)	70 41 15	5 017507	104114	19 718	68	"	Ahmadpur, II	101 46 47	4 628293	42491	8 047	"
	Bhaorása, (V)	24 27 20	4 659675	45675	8 650			Púper	60 15 9	5 129819	134840	25 538	
	Púper	h.s.	5 040907	109877	20 810			Kúa	43 2 16	5 077693	119590	22 650	
64	Kámkhera, (IV)	76 43 10	5 214331	163806	31 024	69	"	Ahmadpur, II	107 52 18	4 932262	85756	16 242	18
	Ahmadpur, II	45 33 49	5 079819	120176	22 761			Púper	43 2 16	4 785979	61091	11 570	
	Udepur Hill Mark	h.s.	5 153176	142291	26 949			Bhári	107 52 18	5 077693	119590	22 650	
65	Kámkhera, (IV)	45 48 27	4 954409	90034	17 052	70	"	Kámkhera, (IV)	60 30 49	4 785979	61091	11 570	"
	Bhaorása, (V)	73 8 42	5 079819	120176	22 761			Ahmadpur, II	94 7 53	5 091061	124183	23 519	
	Udepur Hill Mark	h.s.	5 040907	109877	20 810			Bhári	60 30 49	5 153176	142291	26 949	
66	Bhaorása, (V)	58 40 1	4 995069	98871	18 726	71	"	Kámkhera, (IV)	59 22 7	4 630399	42697	8 087	"
	Púper	57 14 50	4 988333	97349	18 437			Púper	53 38 43	4 601612	39959	7 568	
	Belai Hill Mark	h.s.	5 017507	104114	19 718			Honársí Fort	66 59 40	4 659675	45675	8 650	

NOTE.—1. Names followed by Roman Numerals are those of Principal Stations. Kámkhera, (IV), and Bhaorása, (V), appertain to the Strong base-line figure.
2. The values of the side are given in the same line with the opposite angle.

20—4. GREAT ARC MERIDIONAL SERIES—SECTION 18° TO 24°. SECONDARY TRIANGULATION—TRIANGLES.

No. of triangle	Station	Corrected plane angle	Distance			No. of triangle used	Station	Corrected plane angle	Distance			Theodolite used
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
72	Púper Kúa Honrási Fort	62 32 31 58 57 28 58 50 1	4° 64' 56.20 4° 63' 03.99 4° 62' 28.293	44220 42697 42491	8.375 8.087 8.047	85	Gárgája, I Ahmadpur, II Lohángi	52 34 14 104 7 31	4° 72' 98.25 5° 03' 24.32 5° 11' 92.22	53682 107754 131590	10.167 20.408 24.922	Inch 18 "
73	Gárgája, I Ahmadpur, II Bardhá	74 7 48 67 42 0	4° 94' 39.68 5° 13' 01.05 5° 11' 92.22	87896 136806 131590	16.647 25.910 24.922	86	Ahmadpur, II Bardhá Salala Hill Tree	86 37 6 21 56 34	4° 96' 6.10 4° 53' 06.67 4° 94' 39.68	92557 34647 87896	17.530 6.562 16.647	
74	Gárgája, I Púper Bardhá	116 38 6 41 22 40	4° 75' 8.161 5° 13' 6.105 5° 00' 50.40	57301 136806 101167	10.852 25.910 19.160	87	Ahmadpur, II Gidgarh, IV Salala Hill Tree	60 17 32 22 3 54	4° 90' 36.76 4° 53' 06.67 4° 96' 09.98	80108 34647 91411	15.172 6.562 17.313	
75	Ahmadpur, II Bardhá Ládpúr Hill Mark	10 16 50 41 10 40	4° 30' 22.36 4° 86' 16.3 4° 94' 39.68	20056 73988 87896	3.798 14.013 16.647	88	Ahmadpur, II Bardhá Sapáwá Hill Mark	91 40 44 33 50 12	5° 03' 31.80 4° 77' 08.6 4° 94' 39.68	107939 60129 87896	20.443 11.388 16.647	
76	Ahmadpur, II Púper Ládpúr Hill Mark	37 12 21 36 24 37	4° 87' 22.22 4° 86' 16.3 5° 07' 69.3	75374 75988 119590	14.275 14.013 22.650	89	Ahmadpur, II Gidgarh, IV Sapáwá Hill Mark	55 13 54 40 51 2	4° 87' 80.39 4° 77' 08.6 4° 96' 09.98	75516 60129 91411	14.302 11.388 17.313	
77	Púper Kúa Nateran Fort	109 49 55 40 41 15	4° 90' 96.62 4° 75' 04.18 4° 62' 29.3	81220 59288 42491	15.383 10.061 8.047	90	Ahmadpur, II Lehángi Bhaisá Temple	2 31 2 33 2 30	3° 60' 79.06 4° 70' 18.41 4° 72' 98.25	4054 59332 53682	0.768 9.533 10.167	
78	Ahmadpur, II Bardhá Sirsí Hill Mark	20 35 33 27 53 4	4° 61' 58.62 4° 73' 96.24 4° 94' 39.68	41292 54907 87896	7.820 10.399 16.647	91	Ander, III Gidgarh, IV Sanyer Hill Pagoda	10 33 14 56 42 41	4° 61' 00.66 5° 01' 05.82 5° 08' 18.19	41597 103892 120731	7.878 19.676 22.866	
79	Ahmadpur, II Púper Sirsí Hill Mark	6 19 58 5 19 18	4° 81' 49.10 4° 73' 96.24 5° 07' 69.3	65300 54907 119590	12.367 10.399 22.650	92	Ahmadpur, II Ander, III Sanyer Hill Pagoda	74 41 2 27 33 0	5° 01' 05.81 4° 69' 74.20 5° 02' 23.11	103892 49822 105271	19.676 9.436 19.938	
80	Ahmadpur, II Púper Gadlákákpúr Hill Pagoda	18 39 13 18 59 17	4° 79' 67.91 4° 80' 42.29 5° 07' 69.3	62631 63713 119590	11.862 12.067 22.650	93	Ahmadpur, II Ander, III Parsurá Hill Tree	4 52 55 11 52 39	4° 49' 23.29 4° 87' 58.72 5° 02' 23.11	31069 75140 105271	5.884 14.231 19.938	
81	Ahmadpur, II Bardhá Gadlákákpúr Hill Pagoda	45 34 44 46 25 17	4° 79' 80.62 4° 80' 42.29 4° 94' 39.68	62815 63713 87896	11.897 12.067 16.647	94	Ander, III Gidgarh, IV Sembardá Hill Mark	5 35 15 34 7 57	4° 26' 47.00 5° 02' 53.41 5° 08' 18.19	18395 106008 120731	3.484 20.077 22.866	
82	Ahmadpur, II Bardhá Kámkerá Fort	111 13 15 9 11 35	4° 97' 77.69 4° 21' 17.36 4° 94' 39.68	95010 16283 87896	17.994 3.084 16.647	95	Gidgarh, IV Ládi, V Sembardá Hill Mark	27 53 34 5 42 40	4° 93' 68.99 4° 26' 47.00 5° 00' 89.8	86477 18395 102305	16.378 3.484 19.376	
83	Ahmadpur, II Bardhá Wácher Hill Mark	164 21 33 4 46 46	5° 09' 55.39 4° 58' 9.506 4° 94' 39.68	125759 38605 87896	23.818 7.301 16.647	96	Ander, III Gidgarh, IV Kaisen Hill Fort	30 16 6 19 3 34	4° 90' 43.66 4° 71' 58.40 5° 08' 18.19	80235 51980 120731	15.196 9.845 22.866	
84	Ahmadpur, II Bhári Lohángi	56 44 15 54 48 49	4° 73' 97.47 4° 72' 98.5 4° 78' 59.79	54922 53682 61091	10.402 10.167 11.570	97	Ander, III Gidgarh, IV Marmango Hill Mark	47 44 32 48 11 2	4° 95' 43.53 4° 95' 04.71 5° 08' 18.19	89836 90463 120731	17.014 17.133 22.866	

No.	Station	Corrected plane angle ° ' "	Distance			No. of triangle	Station	Corrected plane angle ° ' "	Distance			Theodolite used
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
98	Gidgarh, IV Ládi, V Marmango Hill Mark	13 50 29 54 56 55	4' 419'186 4' 954'453 5' 009'898	26253 89836 102305	4' 972 17' 014 19' 376	111	Gidgarh, IV Samasgarh, VI Bhimbat Tree	39 46 27 93 3 11	5' 022'324 5' 215'688 5' 081'050	105275 164319 120084	6 19' 938 31' 121 22' 857	Inch 36 "
99	Gidgarh, IV Ládi, V Manúábhar	90 30 1 34 56 53	5' 008'917 4' 850'962 5' 009'898	125579 71939 102305	23' 784 13' 625 19' 376	112	Morpáni, IX Tek, X Kuárá	72 13 13 27 15 26	5' 196'321 5' 181'035 4' 863'141	157152 151717 72070	29' 764 28' 734 13' 820	" C.T.I.
100	Ládi, V Bhimbat, VIII Manúábhar	98 50 19 42 18 52	5' 265'585 5' 098'917 5' 068'208	184325 125579 117006	34' 910 23' 784 22' 160	118	Ránpur, VII Tek, X Kuárá	17 24 28 98 8 17	5' 196'321 4' 716'917 5' 236'603	157152 52110 172426	29' 764 9' 869 32' 656	"
101	Gidgarh, IV Ládi, V Bhopál Palace	80 49 48 57 5 36	5' 058'069 4' 844'055 5' 009'898	114306 69832 102305	21' 649 13' 226 19' 376	114	Ránpur, VII Morpáni, IX Katgáon	8 51 56 23 7 1 148 1 3	4' 735'214 5' 141'325 5' 271'362	54352 138406 186794	10' 294 26' 224 35' 378	"
102	Gidgarh, IV Manúábhar Bhopál Palace	9 40 13 75 12 8	4' 083'956 4' 844'055 4' 856'962	12133 69832 71939	2' 298 13' 226 13' 625	115	Ránpur, VII Tek, X Katgáon	14 7 43 41 32 7 124 20 10	4' 707'325 5' 141'325 5' 236'603	50971 138406 172426	9' 654 26' 224 32' 656	"
103	Gidgarh, IV Manúábhar Islámnagar House	17 33 26 24 47 37	4' 508'031 4' 651'093 4' 856'962	32213 44781 71939	6' 101 8' 481 13' 625	116	Ránpur, VII Katgáon Barkach	9 10 55 163 38 3	4' 894'383 4' 788'530 5' 141'325	78412 61451 138406	14' 851 11' 638 26' 224	"
104	Ander, III Ránpur, VII Kattáo Hill Mark	36 19 21 33 41 39	5' 008'564 4' 980'106 5' 209'032	101992 95522 161820	19' 317 18' 091 30' 648	117	Tek, X Katgáon Barkach	38 48 26 24 2 26	4' 894'383 5' 046'613 4' 707'325	78412 111330 50971	14' 851 21' 085 9' 654	"
105	Ránpur, VII Bhimbat, VIII Kattáo Hill Mark	57 42 40 39 39 55	5' 130'583 5' 008'564 5' 199'929	135077 101992 158464	25' 583 19' 317 30' 012	118	Ránpur, VII Katgáon Subahpur Palace	50 17 24 47 30 7	5' 031'443 5' 012'998 5' 141'325	107598 103038 138406	20' 361 19' 515 26' 224	"
106	Gidgarh, IV Ládi, V Hardal Hill Mark	10 20 56 98 54 27	4' 289'310 5' 020'933 5' 009'898	19467 107061 102305	3' 687 20' 277 19' 376	119	Ránpur, VII Tek, X Subahpur Palace	36 9 41 34 16 2	5' 033'346 5' 012'998 5' 236'603	107981 103038 172426	20' 451 19' 515 32' 656	"
107	Gidgarh, IV Manúábhar Hardal Hill Mark	80 9 5 63 3 7	5' 073'104 5' 020'933 4' 856'962	118332 107061 71939	22' 411 20' 277 13' 625	120	Tek, X Katgáon Babai Flag	5 45 44 166 59 3	4' 607'799 4' 958'661 4' 707'325	40331 90920 50971	7' 676 17' 220 9' 654	"
108	Ládi, V Ránpur, VII Dalthoban	5 30 49 53 50 8	4' 170'815 5' 095'221 5' 123'817	14819 124515 132683	2' 807 23' 582 25' 129	121	Ránpur, VII Morpáni, IX Nílgarh No. 1	12 9 28 104 11 27	4' 642'468 5' 305'542 5' 271'362	43900 202089 186794	8' 314 38' 274 35' 378	"
109	Ránpur, VII Dalthoban Bári Fort	28 5 20 110 25 42	4' 022'572 4' 321'488 4' 170'815	10533 20065 14819	1' 995 3' 071 2' 807	122	Ránpur, VII Tek, X Nílgarh No. 1	35 9 7 86 27 45	5' 066'601 5' 305'542 5' 236'603	116574 202089 172426	22' 078 38' 274 32' 656	"
110	Samasgarh, VI Bhimbat, VIII Bhimbat Tree	12 34 29 37 38 49	4' 574'313 5' 022'324 5' 120'888	37524 105275 13461	7' 107 19' 938 25' 687	123	Ránpur, VII Nílgarh No. 1 Hbshatángbad	22 15 33 122 53 54	4' 959'857 5' 305'542 5' 305'542	91171 137509 202089	17' 267 26' 043 38' 274	"

* C.T.I. Stands for "Circular Transit Instrument"—probably a small theodolite with complete-vertical circle.

22_4. GREAT APC MERIDIONAL SERIES—SECTION 18° TO 24°. SECONDARY TRIANGULATION—TRIANGLES.

Triangle No.	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	
124	Ránpur, VII Morpani, IX Hoshangabad	34 25 1 46 39 19 98 55 40	5°02'88.67 5°13'38.32 5°27'13.62	106873 137599 186794	20.241 26.043 35.378	Inch	Dhába Deo, XII Alampur, XIII Bámandeopahár Hill Mark	65 4 47 23 32 24	5°02'05.63 4°06'44.02 5°06'28.80	104849 46174 115579	19.858 8.745 21.890	Inch	
125	Ránpur, VII Nílgarh No. 1 Hoshangabad Rock	20 48 45 121 49 34	4°92'69.09 5°15'93.75 5°30'55.42	84510 144336 202089	16.006 27.336 38.274	"	Dhába Deo, XII Bámandeopahár Hill Mark Bághdeo	28 37 3 78 14 15	4°35'39.18 4°05'45.50 4°06'44.02	22590 45159 46174	4.278 8.549 8.745	"	
126	Ránpur, VII Morpani, IX Hoshangabad Rock	50 5 20 96 50 27	5°01'03.18 5°15'93.75 5°27'13.62	102404 144336 186794	19.395 27.336 35.378	"	Dhába Deo, XII Bághdeo Sháhpur Tomb	5 4 36 25 6 32	3°90'00.40 4°58'08.67 4°05'45.50	7944 38095 45139	1.505 7.215 8.549	"	
127	Hoshangabad Rock Nílgarh No. 1 Gurádía	115 44 5 51 0 56	4°99'09.46 4°39'65.17 4°92'69.09	97937 24918 84510	18.549 4.719 16.006	"	Morpani, IX Dhába Deo, XII Bhorgarh Hill Mark	19 13 49 43 30 6	4°73'75.75 5°05'77.23 5°10'87.37	54648 114215 147481	10.350 21.632 27.932	"	
128	Hoshangabad Hoshangabad Rock Gurádía	95 38 13 16 36 48	4°39'65.17 4°42'80.17 3°88'63.53	24918 26793 7698	4.719 5.074 1.458	"	Dhába Deo, XII Alampur, XIII Bhorgarh Hill Mark	48 38 22 27 18 1	4°95'14.79 4°73'75.75 5°06'28.80	89429 54648 115579	16.937 10.350 21.890	"	
129	Hoshangabad Rock Gurádía Hoshangabad Fort	38 13 25 29 5 36	4°22'29.82 4°11'83.24 4°39'65.17	16710 13132 24918	3.165 2.487 4.719	"	Alampur, XIII Bhorgarh Hill Mark Chúrá	42 32 18 120 32 56	4°84'63.77 4°48'01.44 4°95'14.79	70206 30210 89429	13.297 5.722 16.937	C.T.I.	
130	Hoshangabad Rock Gurádía Hoshangabad Temple	47 20 45 27 27 19	4°27'85.37 4°07'57.34 4°39'65.17	18991 11995 24918	3.597 2.255 4.719	"	Alampur, XIII Chúrá Chicholi Hill Mark	17 12 24 109 19 58	4°04'62.13 4°54'99.80 4°48'01.44	11123 35480 30210	2.107 6.720 5.722	"	
131	Hoshangabad Rock Gurádía Hoshangabad Idgah	30 5 27 20 8 57	4°21'09.03 4°04'78.89 4°39'65.17	16232 11166 24918	3.078 2.115 4.719	"	Narwargarh, XI Dhába Deo, XII Jhapal Hill Mark	87 25 21 38 1 27	5°16'27.88 4°95'28.03 5°07'42.01	145475 89702 118632	27.552 16.989 22.468	"	
132	Morpani, IX Dhába Deo, XII Jámgarh Hill Mark	30 35 53 35 16 6	4°91'15.18 4°96'99.41 5°16'87.37	82260 93313 147481	15.579 17.673 27.932	"	Narwargarh, XI Dhába Deo, XII Alampur, XIII Jhapal Hill Mark	15 32 13 135 7 31	4°53'21.77 4°95'28.03 4°79'44.28	34055 89702 62291	6.450 16.980 11.798	"	
133	Dhába Deo, XII Alampur, XIII Jámgarh Hill Mark	56 52 22 44 17 15	4°99'41.35 4°91'51.87 5°06'28.80	98659 82260 115579	18.685 15.579 21.890	"	Dhába Deo, XII Jágthar, XIV Bagdhá	17 34 57 45 21 23 117 3 40	4°51'66.74 4°88'72.23 4°98'61.98	32860 77397 96872	6.224 14.658 18.347	"	
134	Morpani, IX Nílgarh No. 1 Bordhá	51 22 24 47 53 50	4°66'48.77 4°76'38.88 4°64'24.68	46225 58397 43900	8.755 11.060 8.314	"	Dhába Deo, XII Bagdhá Lalápahár Hill Mark	27 58 31 43 5 14	4°58'41.47 4°74'73.81 4°88'87.23	38384 55896 77397	7.270 10.586 14.658	"	
135	Morpani, IX Jámgarh Hill Mark Bordhá	14 13 39 144 25 2	4°59'56.42 4°76'38.88 4°96'99.41	39413 58397 93313	7.465 11.060 17.673	"	Dhába Deo, XII Bagdhá Lalápahár Hill Mark	58 53 23 73 58 26	4°58'41.47 4°63'43.69 4°51'66.74	38384 43089 32860	7.270 8.161 6.224	"	
136	Narwargarh, XI Dhába Deo, XII Bámandeopahár Hill Mark	17 54 15 34 15 59	4°66'44.02 4°92'20.2 5°07'42.01	46174 84507 118632	8.745 16.017 22.468	"	Jágthar, XIV Bagdhá Kanderá Hill Mark	21 3 4 110 55 33	4°20'07.80 4°61'58.10 4°51'66.74	15877 41287 32860	3.007 7.819 6.224	"	

* See note to page 21-4.

PRINCIPAL-AUXILIARY STATIONS, AND INTERSECTED POINTS.

No. of triangle	Station	Corrected plane angle ° ' "	Distance			Theodolite used	No. of triangle used	Station	Corrected plane angle ° ' "	Distance			Theodolite used
			Log. feet	Feet	Miles					Log. feet	Feet	Miles	
150	Dhába Deo, XII Bagdhá Kherlá Hill Fort	18 5 50 41 23 45	4 445677 4 773804 4 888723	27905 59402 77397	5 285 11 250 14 658	Inch	163 Dhár, XVII Kamlá Hill Mark Derpáni	56 21 8 98 48 38	4 374096 4 077025 4 448578	23664 11941 28092	4 482 2 261 5 320	Inch C.T.I.	
151	Jágdhar, XIV Bagdhá Kherlá Hill Fort	46 10 20 75 39 55	4 445677 4 537350 4 516674	27905 37476 32860	5 285 7 098 6 224	C.T.I.	164 Dhár, XVII Chaurápatar Derpáni	59 45 25 5 47 59	5 008944 4 077025 5 031701	102081 11941 107572	19 334 2 261 20 374	"	
152	Jágdhar, XIV Bagdhá Betól Fort	92 10 6 28 17 2	4 580829 4 256773 4 516674	38092 18062 32860	7 214 3 421 6 224	"	165 Dhár, XVII Ashti, XIX Bahráam Shahíd Hill Mark	13 41 41 3 8 42	5 110029 4 475021 5 197683	128833 29855 157646	24 400 5 654 29 857	"	
153	Jágdhar, XIV Bagdhá Será Fort	137 5 51 19 39 35	4 753475 4 447385 4 516674	56686 28015 32860	10 736 5 306 6 224	"	166 Dhár, XVII Chaurápatar Bahráam Shahíd Hill Mark	97 4 32 14 54 46	5 061180 4 475021 5 031701	115128 29855 107572	21 804 5 654 20 374	"	
154	Nilgarh, XV Dhár, XVII Nilgarh No. 2	128 23 17 50 8 35	5 046519 3 561120 5 037463	111306 3640 109009	21 081 0 689 20 646	"	167 Dhár, XVII Bahráam Shahíd Hill Mark Dhár	97 0 58 75 52 20	4 485095 3 581093 4 475021	30556 3811 29855	5 787 0 722 5 654	"	
155	Jágdhar, XIV Nilgarh, XV Nilgarh No. 2	1 42 34 112 48 19 65 29 7	3 561120 5 051101 5 045424	3640 112487 111026	0 689 21 304 21 028	"	168 Dhár, XVII Kamlá Hill Mark Dhár	49 47 57 123 43 16	4 411557 3 581093 4 475021	25796 3811 28092	4 886 0 722 5 320	"	
156	Jágdhar, XIV Nilgarh, XV Chaurápatar	46 59 30 52 2 12 80 58 18	4 914906 4 947587 5 045424	82207 88631 111026	15 569 16 786 21 028	"	169 Dhár, XVII Ashti, XIX Gáwilgarh Mosque	71 6 16 31 25 2	5 184080 4 925197 5 197683	152785 84178 157646	28 936 15 943 29 857	36	
157	Nilgarh, XV Dhár, XVII Chaurápatar	66 46 12 44 36 26 68 37 22	5 031701 4 914906 5 037463	107572 82207 109009	20 374 15 569 20 646	"	170 Sálbaldi, XVI Dhár, XVII Gáwilgarh Mosque	13 18 47 145 48 26	4 925197 5 312677 5 114904	84178 203436 130288	15 943 38 908 24 676	"	
158	Nilgarh, XV Dhár, XVII Jillar	15 55 54 73 29 47	5 055712 4 494261 5 037463	113687 31208 109009	21 532 5 911 20 646	"	171 Badgáon, XXII Talegáon Gáwilgarh Range, Peak No. 2	11 12 28 102 14 7	5 196992 5 392824 4 965999	157395 247072 92470	29 810 46 794 17 513	C.T.I.	
159	Nilgarh, XV Chaurápatar Jillar	13 12 38 142 59 15	4 741243 4 494261 4 914906	55112 31208 82207	10 438 5 911 15 569	"	172 Ikjhera, XXIII Pilkher, XXIV Anjengáon	64 24 16 65 30 47 50 4 57	5 180664 5 184590 5 207759	151588 152964 128914	28 710 28 970 24 416	"	
160	Jágdhar, XIV Chaurápatar Atner, W. Turret	15 42 56 54 51 47	4 405778 4 885666 4 947587	25455 76854 88631	4 821 14 556 16 786	"	173 Badgáon, XXII Ikjhera, XXIII Anjengáon	70 3 42 27 22 55 82 33 23	5 184590 4 874116 5 207759	152964 74837 161346	28 970 14 174 30 558	"	
161	Nilgarh, XV Dhár, XVII Kamlá Hill Mark	14 54 13 71 30 7	4 448578 5 015279 5 037463	28092 103581 109009	5 320 19 618 20 646	"	174 Badgáon, XXII Anjengáon Talegáon	50 5 46 77 39 38 52 14 36	4 861014 4 965999 4 874116	72613 92470 74837	13 752 17 513 14 174	"	
162	Dhár, XVII Chaurápatar Kamlá Hill Mark	116 6 33 11 52 39	5 088346 4 448578 5 031701	122550 28092 107572	23 212 5 320 20 374	"	175 Anjengáon Talegáon Rámá	15 46 52 27 5 59	4 636996 5 032999 4 861014	43351 108467 72613	8 210 20 543 13 752	"	

* See note to page 21—4.

No. of triangle	Station	Corrected plane angle ° ' "	Distance			No. of triangle used	Station	Corrected plane angle ° ' "	Distance			Theodolite used	
			Log. feet	Feet	Miles				Log. feet	Feet	Miles		
176	Anjengáon	h.s.	4 351090	22443	4 251	189	Badgáon, XXII	51 44 21	5 114086	130312	24 680	Inch C.T.I.	
	Talegáon	s.	4 936010	86419	16 367		Ikjhera, XXIII	24 43 4	4 841337	69396	13 143		"
	Ashti Fort		4 861014	72613	13 752		Donad	103 32 35	5 207759	161346	30 558		"
177	Badgáon, XXII	h.s.	4 936610	86419	16 367	190	Badgáon, XXII	25 50 26	4 656540	45346	8 588	"	
	Anjengáon		5 059932	114797	21 742		Pilkher, XXIV	85 7 20	5 015609	103659	19 632		"
	Ashti Fort		4 874116	74837	14 174		Karinjá Fort		4 987445	97150	18 400		"
178	Anjengáon	h.s.	4 425526	26640	5 045	191	Badgáon, XXII	27 8 7	4 720260	52512	9 945	"	
	Talegáon	s.	4 764306	58117	11 007		Donad	115 47 54	5 015609	103659	19 632		"
	Nimbá	"	4 861014	72613	13 752		Karinjá Fort		4 841337	69396	13 143		"
179	Badgáon, XXII	h.s.	4 764306	58117	11 007	192	Pilkher, XXIV	18 38 53	4 171656	14848	2 812	"	
	Anjengáon	s.	4 819205	65949	12 490		Donad	18 9 15	4 160403	14408	2 740		"
	Nimbá	"	4 874116	74837	14 174		Maubáh Building		4 444307	27817	5 268		"
180	Badgáon, XXII	h.s.	4 167034	14690	2 782	193	Pilkher, XXIV	87 3 26	4 453256	28396	5 378	"	
	Talegáon	s.	4 956883	90549	17 149		Donad	14 53 51	3 863916	7310	1 384		"
	Damúri Fort		4 965999	92470	17 513		Umbaldá Fort		4 444307	27817	5 268		"
181	Talegáon	s.	4 457815	28696	5 435	194	Pilkher, XXIV	43 23 0	4 659888	45697	8 655	"	
	Nimbá	"	4 167034	14690	2 782		Kopdi, XXV	5 46 15	3 825391	6689	1 267		"
	Damúri Fort		4 425526	26640	5 045		Sukfi Fort		4 701803	50327	9 532		"
182	Anjengáon	h.s.	4 322350	21006	3 978	195	Pilkher, XXIV	82 56 43	4 955686	90300	17 102	"	
	Talegáon	s.	4 717593	52191	9 885		Kopdi, XXV	63 28 25	4 910677	81410	15 419		"
	Attorná Building		4 861014	72613	13 752		Loni		4 701803	50327	9 532		"
183	Badgáon, XXII	h.s.	4 778654	60070	11 377	196	Ikjhera, XXIII	42 40 53	4 955686	90300	17 102	"	
	Anjengáon		4 873449	74722	14 152		Kopdi, XXV	23 14 12	4 720587	52552	9 953		"
	Alangáon Fort		4 874116	74837	14 174		Loni		5 084960	121607	23 032		"
184	Anjengáon	h.s.	4 522886	33334	6 313	197	Ikjhera, XXIII	16 24 28	4 214201	16379	3 102	"	
	Talegáon	s.	4 807057	64129	12 146		Loni	48 35 27	4 638381	43489	8 237		"
	Batkoli Fort		4 861014	72613	13 752		Ner Fort		4 720587	52552	9 953		"
185	Badgáon, XXII	h.s.	4 807057	64129	12 146	198	Ikjhera, XXIII	21 47 45	4 914621	82153	15 559	"	
	Anjengáon		4 777339	59885	11 342		Kopdi, XXV	11 32 43	4 646235	44283	8 387		"
	Batkoli Fort		4 874116	74837	14 174		Injalá Hill Pagoda		5 084960	121607	23 032		"
186	Talegáon	s.	5 277936	189643	35 917	199	Ikjhera, XXIII	20 53 8	4 286545	19344	3 664	"	
	Gáwilgarh Range, Peak No. 2		4 634605	43113	8 165		Loni	54 41 52	4 646235	44283	8 387		"
	Amráoti		5 196992	157395	29 810		Injalá Hill Pagoda		4 720587	52552	9 953		"
187	Talegáon	s.	4 574839	37570	7 115	200	Sákri, XXVII	136 16 1	5 292104	195931	37 108	"	
	Nimbá	"	4 634605	43113	8 165		Máhur, XXVIII	22 29 1	5 034977	108387	20 528		"
	Amráoti	"	4 425526	26640	5 045		Bará Kíní Hill Pagoda		5 011661	102721	19 455		"
188	Ikjhera, XXIII	h.s.	4 444307	27817	5 268	201	Kopdi, XXV	24 11 9	5 034077	108387	20 528	"	
	Pilkher, XXIV		5 114986	130312	24 680		Sákri, XXVII	3 42 46	4 233786	17131	3 245		"
	Donad	s.	5 110300	128914	24 416		Bará Kíní Hill Pagoda		5 092675	123787	23 444		"

* See note to page 21.—A.

PRINCIPAL-AUXILIARY STATIONS, AND INTERSECTED POINTS.

No. of Triangle	Station	Corrected plane angle o ' "	Distance			No. of Triangle	Station	Corrected plane angle o ' "	Distance			Theodolite used
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
202	Bám, XXVI Máhúr, XXVIII Badgaon Fort	79 32 15 7 38 52	5'178920 4'310323 5'185677	150980 20433 153348	28'595 3'870 29'043	215	Sákri, XXVII Lak Ambhá Fort	22 52 11 122 0 2	4'499222 4'838096 4'669670	31566 68880 46738	5'978 13'046 8'852	Inch C.T.I. "
203	Bám, XXVI Máhúr, XXVIII Bori Fort	54 55 45 4 47 41	5'162349 4'171495 5'185677	145328 14842 153348	27'524 2'811 29'043	216	Máhúr, XXVIII Lak Shivni Hill Pagoda	13 31 56 123 25 3	4'546227 5'098546 5'011218	35174 125472 102617	6'662 23'764 19'435	" " "
204	Bám, XXVI Sákri, XXVII Mahagaon Fort	20 45 59 6 2 56	5'030254 4'503312 5'134854	107215 31865 156413	20'306 6'035 25'836	217	Sákri, XXVII Lak Arambi Fort	11 10 29 148 50 23	4'43277 4'849774 4'669670	26502 70758 46738	5'019 13'401 8'852	" " "
205	Bám, XXVI Máhúr, XXVIII Terorá Fort	10 20 27 1 45 10	5'118546 4'500010 5'185677	131385 22388 153348	24'884 4'240 29'043	218	Sákri, XXVII Lak Saungá Fort	12 16 11 103 27 4	4'042372 4'702094 4'669670	11025 50455 46738	2'088 9'556 8'852	" " "
206	Sákri, XXVII Máhúr, XXVIII Sákra Hill Mark	116 38 44 26 29 18	5'184787 4'882898 5'011661	153034 76366 102721	28'984 14'463 19'455	219	Sákri, XXVII Shivni Hill Mark Digras	36 4 1 120 3 39	4'717972 4'555188 4'885320	52236 35908 76793	9'893 6'801 14'544	" " "
207	Kopdi, XXV Sákri, XXVII Sákra Hill Mark	22 34 33 15 54 31	4'882898 4'735588 5'092675	76366 54524 123787	14'463 10'327 23'444	220	Sákri, XXVII Lak Chikni Fort	16 26 47 137 19 31	4'476265 4'855422 4'669670	29941 71684 46738	5'671 13'576 8'852	" " "
208	Sákri, XXVII Máhúr, XXVIII Shivni Hill Mark	83 34 54 39 1 47	5'089440 4'863320 5'011661	121183 76793 102721	22'951 14'544 19'455	221	Sákri, XXVII Shivni Hill Mark Arui	32 0 39 60 30 26	4'669934 4'945173 4'885320	46766 88140 76793	8'857 16'693 14'544	" " "
209	Bám, XXVI Máhúr, XXVIII Shivni Hill Mark	47 37 52 21 35 5	5'083440 4'786603 5'185677	121183 60340 153348	22'951 11'428 29'043	222	Sákri, XXVII Máhúr, XXVIII Arui	51 34 15 73 12 3	4'924573 4'945173 5'011661	84057 88140 102721	15'920 16'693 19'455	" " "
210	Sákri, XXVII Máhúr, XXVIII Lak	76 43 6 76 58 6	5'011218 4'669670 5'011661	102617 46738 102721	19'435 8'852 19'455	223	Bitargaon, XXX Terbán, XXXI Daggútar Hill Mark	77 27 20 25 52 18	5'143872 4'794297 5'142599	139275 62260 138838	26'378 11'792 26'295	" " "
211	Máhúr, XXVIII Shivni Hill Mark Lak	12 42 59 120 18 33	4'489991 5'011218 5'083440	30899 102617 121183	5'852 19'435 22'951	224	Bitargaon, XXX Terbán, XXXI Jaggúdar Hill Mark	99 54 51 10 7 49	5'163112 4'414880 5'142599	145583 25994 138838	27'573 4'923 26'295	" " "
212	Sákri, XXVII Lak Sákra Fort	48 10 21 94 21 50	4'757830 4'884322 4'669670	57257 76616 46738	10'844 14'511 8'852	225	Bitargaon, XXX Terbán, XXXI Umarkher Hill Pagoda	55 10 55 40 39 39	5'059908 4'958739 5'142599	114577 90937 138838	21'700 17'223 26'295	" " "
213	Sákri, XXVII Lak Ambhá Hill Pagoda	26 16 55 119 21 19	4'764256 4'853375 4'669670	58111 72173 46738	11'006 13'669 8'852	226	Sákri, XXIX Bitargaon, XXX Umarkher Hill Pagoda	70 26 2 17 33 42	4'958739 4'404192 4'984395	90937 29120 96451	17'223 5'515 18'267	" " "
214	Kopdi, XXV Sákri, XXVII Ambhá Hill Pagoda	30 15 56 29 33 14	4'848375 4'848997 5'092675	72173 70631 123787	13'669 13'377 23'444	227	Sákri, XXIX Bitargaon, XXX Umarkher Idgah	72 35 59 20 11 16	4'964476 4'522761 4'984395	92146 33324 96451	17'452 6'311 18'267	" " "

* See note to page 21.-4.

26 GREAT ARC MERIDIONAL SERIES—SECTION 18° TO 24°. SECONDARY TRIANGULATION—TRIANGLES.

No. of Triangle	Station	Corrected plane angle ° ' "	Distance			No. of Triangle	Station	Corrected plane angle ° ' "	Distance			Theodolite used
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
228	Bítargaon, XXX Terbán, XXXI Umarkher Idgah	52 33 21 41 27 27	5°04'33.67 4°06'44.76 5°14'25.09	110501 92146 138838	20.928 17.452 26.295	241	Terbán, XXXI Adgaon Umri Fort	14 28 33 10 2 52	4°6'18.590 4°46'24.18 4°8'38.819	41552 29001 68995	7.870 5.493 13.067	Inch C.T.I. "
229	Bítargaon, XXX Terbán, XXXI Dánki Hill Pagoda	46 7 31 14 35 44	5°05'57.19 4°06'32.60 5°14'25.09	114741 40111 138838	21.731 7.597 26.295	242	Bítargaon, XXX Shivni, XXXII Chatári Pettah	92 4 14 33 3 47	5°07'32.99 4°8'10.426 4°9'86.236	118386 64629 96880	22.422 12.240 18.349	" " "
230	Bítargaon, XXX Shivni, XXXII Dánki Hill Pagoda	127 35 20 14 40 39	5°09'84.40 4°06'32.60 4°9'86.236	125441 40111 96880	23.758 7.597 18.349	243	Bítargaon, XXX Shivni, XXXII Garápur Fort	77 54 17 37 28 41	5°02'05.76 4°8'14.556 4°9'86.236	104852 65246 96880	19.858 12.337 18.349	" " "
231	Bítargaon, XXX Terbán, XXXI Bámangaon Building	22 40 12 13 52 33	4°9'53.590 4°74'73.35 5°14'25.09	89865 55916 138838	17.020 10.590 26.295	244	Bítargaon, XXX Shivni, XXXII Soná Fort	48 54 17 43 0 57	4°86'36.31 4°82'03.92 4°9'86.236	73052 66129 96880	13.836 12.524 18.349	" " "
232	Bítargaon, XXX Terbán, XXXI Bámangaon Hill Pagoda	23 34 1 15 53 15	4°9'41.283 4°77'6.771 5°14'25.09	87354 59810 138838	16.544 11.328 26.295	245	Bítargaon, XXX Shivni, XXXII Jeróná Fort	43 38 37 43 36 30	4°82'56.92 4°82'54.12 4°9'86.236	66941 66808 96880	12.678 12.670 18.349	" " "
233	Terbán, XXXI Shivni, XXXII Adgaon	88 22 10 67 39 27	5°22'27.89 4°83'88.19 5°19'06.73	169742 68995 157063	32.148 13.067 29.747	246	Bítargaon, XXX Shivni, XXXII Bisá Fort	33 43 33 43 23 21	4°74'17.77 4°83'42.37 4°9'86.236	55179 68271 96880	10.451 12.930 18.349	" " "
234	Terbán, XXXI Jaggúdar Hill Mark Adgaon	40 38 59 113 36 48	5°01'49.58 4°83'88.19 5°16'31.12	103504 68995 145583	19.603 13.067 27.573	247	Bítargaon, XXX Shivni, XXXII Kalári Fort	28 29 9 45 13 9	4°68'25.07 4°85'51.82 4°9'86.236	48140 71644 96880	9.117 13.569 18.349	" " "
235	Terbán, XXXI Adgaon Dongargaon Hill Pagoda	5 37 59 98 30 55	3°84'41.18 4°84'73.83 4°83'88.19	6984 70369 68995	1.323 13.327 13.067	248	Bítargaon, XXX Shivni, XXXII Sirpalí Hill Mark	46 30 47 65 49 41	4°88'07.80 4°98'02.71 4°9'86.236	75994 95559 96880	14.393 18.098 18.349	" " "
236	Terbán, XXXI Adgaon Utaigaon Fort	11 47 23 67 49 52	4°15'62.96 4°81'26.30 4°83'88.19	14332 61958 68995	2.714 12.303 13.067	249	Shivni, XXXII Bhesa, XXXIII Sirpalí Hill Mark	45 43 11 44 45 9	4°888.052 4°88'07.80 5°033.164	72277 75994 107936	14.636 14.393 20.442	" " "
237	Terbán, XXXI Adgaon Kolgaon Fort	5 42 45 8 36 17	4°44'35.96 4°62'05.92 4°83'88.19	27771 41744 68995	5.260 7.906 13.067	250	Shivni, XXXII Bhesa, XXXIII Pedápará Hill Mark	18 13 42 16 48 11	4°769.507 4°735.256 5°033.164	58818 54357 107936	11.140 10.295 20.442	" " "
238	Terbán, XXXI Adgaon Chotá Walkí Pagoda	11 24 15 13 54 9	4°50'37.4 4°58'06.8 4°83'88.19	32313 38341 68995	6.120 7.262 13.067	251	Bhesa, XXXIII Somána, XXXIV Pedápará Hill Mark	107 10 53 23 36 46	5°147.020 4°769.507 5°045.978	140288 58818 111167	26.570 11.140 21.054	" " "
239	Terbán, XXXI Adgaon Patrad Fort	14 16 0 18 29 4	4°49'73.32 4°06'67.53 4°83'88.19	31429 40435 68995	5.952 7.658 13.067	252	Terbán, XXXI Bhesa, XXXIII Bokar Hill Mark	61 53 23 12 38 16	5°046.622 4°441.153 5°085.101	111332 27616 121647	21.086 5.230 23.039	" " "
240	Terbán, XXXI Adgaon Kaujerá Pettah	7 51 17 9 30 55	4°49'94.62 4°58'21.15 4°83'88.19	31584 38205 68995	5.982 7.236 13.067	253	Bhesa, XXXIII Somána, XXXIV Bokar Hill Mark	25 13 54 77 34 26	4°686.611 5°046.622 5°045.978	48597 111332 111167	9.204 21.086 21.054	" " "

See note to page 21-4.

PRINCIPAL-AUXILIARY STATIONS, AND INTERSECTED POINTS.

No. of Station	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	
254	Shivni, XXXII Bhesa, XXXIII Chichund, West Spire	11 29 29 89 46 48	4' 340957 5' 041620 5' 033164	21926 110037 107936	4' 153 20' 844 20' 442	Inch C.T.I. "	267	Yemsha, XXXV Júni Ráhir Pagoda	12 40 37 50 48 32	4' 478573 5' 026555 5' 088968	30100 106305 122735	10 5' 701 20' 134 23' 245	Inch C.T.I. "
255	Bhesa, XXXIII Yemsha, XXXV Yárbid Tree	12 17 30 7 46 3	4' 748747 4' 551423 4' 955877	56072 55598 90339	10' 620 6' 742 17' 110	"	268	Yemsha, XXXV Júni Jarákotá Fort	10 48 51 21 41 51	4' 631901 4' 926469 5' 088968	42845 84425 122735	8' 115 15' 990 23' 245	"
256	Yemsha, XXXV Shiváingápa, XXXVI Júni	36 37 17 62 38 50 80 43 53	4' 916088 5' 088968 5' 134752	82430 122735 136380	15' 612 23' 245 25' 830	"	269	Yemsha, XXXV Shiváingápa, XXXVI Jarákotá Fort	25 48 26 31 19 51	4' 849316 4' 926469 5' 134752	70683 84425 136380	13' 387 15' 989 25' 830	"
257	Somtána, XXXIV Yemsha, XXXV Júni	60 8 47 16 40 47 103 10 26	5' 088968 4' 608713 5' 139216	122735 40617 137789	23' 245 7' 693 26' 096	"	270	Yemsha, XXXV Júni Gujári Turret	17 12 36 37 34 41	4' 647840 4' 961950 5' 088968	44447 91611 122735	8' 418 17' 351 23' 245	"
258	Somtána, XXXIV Júni Málkotá	69 23 57 34 32 57	4' 842045 4' 826344 4' 608713	69510 67042 40617	13' 165 12' 697 7' 693	"	271	Yemsha, XXXV Kandákurtí Bálapur Fort	45 11 30 79 15 28	4' 464401 4' 603789 4' 529724	29134 40345 33863	5' 518 7' 641 6' 413	"
259	Yemsha, XXXV Júni Múdhál Turret	42 40 3 20 14 3	4' 970532 4' 6' 8365 5' 088968	93440 47683 122735	17' 697 9' 031 23' 245	"	272	Yemsha, XXXV Kandákurtí Lagaon Patodá, Bastion	27 43 5 123 24 1	4' 513341 4' 767381 4' 529724	32609 58530 33863	6' 176 11' 085 6' 413	"
260	Yemsha, XXXV Shiváingápa, XXXVI Múdhál Turret	79 17 20 20 10 27	5' 133069 4' 678365 5' 134752	135853 47683 136380	25' 730 9' 031 25' 830	"	273	Yemsha, XXXV Kandákurtí Pálpagaon Fort	24 17 37 139 5 15	4' 687630 4' 889531 4' 529724	48711 77541 33863	9' 226 14' 686 6' 413	"
261	Somtána, XXXIV Yemsha, XXXV Kandákurtí	66 41 28 99 16 19	4' 529724 5' 107952 5' 139216	33863 128219 137789	6' 413 24' 284 26' 096	"	274	Yemsha, XXXV Kandákurtí Naigaon Fort	11 46 37 12 55 25	4' 218525 4' 258249 4' 529724	16540 18124 33863	3' 132 3' 433 6' 413	"
262	Yemsha, XXXV Júni Kandákurtí	50 0 41 115 34 42	5' 018090 4' 529724 5' 088968	104253 33863 122735	19' 745 6' 413 23' 245	"	275	Yemsha, XXXV Kandákurtí Kosáki Fort	36 52 19 23 25 23	4' 360082 4' 190266 4' 529724	23393 15498 33863	4' 430 2' 935 6' 413	"
263	Yemsha, XXXV Kandákurtí Nágtána Hill Pagoda	53 27 17 111 44 45	5' 027366 5' 090381 4' 529724	106504 123135 33863	20' 171 23' 321 6' 413	"	276	Yemsha, XXXV Kandákurtí Belúr Fort	8 10 56 121 38 59	3' 797676 4' 574473 4' 529724	6276 37538 33863	1' 189 7' 109 6' 413	"
264	Yemsha, XXXV Shiváingápa, XXXVI Itolí Hill Pagoda	93 4 36 19 57 28	5' 170211 4' 704008 5' 134752	147983 50583 136380	28' 027 9' 580 25' 830	"	277	Yemsha, XXXV Kandákurtí Sangam Pagoda	9 17 19 131 11 39	3' 933980 4' 602551 4' 529724	8590 40045 33863	1' 627 7' 584 6' 413	"
265	Yemsha, XXXV Kandákurtí Itolí Hill Pagoda	106 28 0 45 10 56	4' 834958 4' 704008 4' 529724	68385 50583 33863	12' 952 9' 580 6' 413	"	278	Yemsha, XXXV Júni Sangam Pagoda	40 43 22 15 47 25	4' 982309 4' 602551 5' 088968	96008 40045 122735	18' 183 7' 584 23' 245	"
266	Yemsha, XXXV Shiváingápa, XXXVI Ráhir Pagoda	23 56 40 47 43 30	4' 765734 5' 026555 5' 134752	58309 106305 136380	11' 043 20' 134 25' 830	"	279	Yemsha, XXXV Kandákurtí Belúli Fort	35 25 15 46 12 18	4' 297491 4' 392809 4' 529724	19838 24706 33863	3' 757 4' 679 6' 413	"

* See note to page 21-4.

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	
280	Yemsha, XXXV Kandakurti Kondilwadi Fort	14 21 33 154 7 13	4.623755 4.869272 4.529724	42049 74007 33863	7.964 14.016 6.413	Inch C.T.I. "	293	Shivalingapa, XXXVI Baktapur, XXXVIII Adampur	18 12 44 153 5 59	4.806844 4.491077 4.967502	64008 39980 92790	12.140 5.867 17.574	Inch C.T.I. "
281	Yemsha, XXXV Kandakurti Nilá Pagoda	19 32 28 104 1 33	4.133328 4.595809 4.529724	13593 39428 33863	2.575 7.468 6.413	"	294	Shivalingapa, XXXVI Adampur Tupselgaon Fortress	7 8 56 152 8 34	4.037539 4.612119 4.491077	10903 40937 39980	2.065 7.753 5.867	"
282	Yemsha, XXXV Kandakurti Ranjil Fort	46 36 53 73 27 2	4.453866 4.574106 4.529724	28436 37506 33863	5.386 7.103 6.413	"	295	Shivalingapa, XXXVI Baktapur, XXXVIII Tupselgaon Fortress	11 3 48 8 29 31	4.725887 4.612119 4.967502	53197 40937 92790	10.075 7.753 17.574	"
283	Shivalingapa, XXXVI Juni Kurbur Saváli Hill Pagoda	47 22 42 33 49 7	4.788018 4.666750 4.916088	61379 46425 82430	11.625 8.793 15.612	"	296	Shivalingapa, XXXVI Baktapur, XXXVIII Bett Mugur Fort	51 49 23 14 30 46	4.901129 4.404622 4.967502	79639 25388 92790	15.083 4.808 17.574	"
284	Shivalingapa, XXXVI Juni Manjiram Turret	67 10 6 45 40 18	4.916114 4.800066 4.916088	82436 63983 82430	15.613 12.118 15.612	"	297	Shivalingapa, XXXVI Baktapur, XXXVIII Selgaon Fort	45 29 9 45 41 0	4.820729 4.822196 4.967502	66180 66404 92790	12.534 12.577 17.574	"
285	Shivalingapa, XXXVI Juni Gaddagá Turret	75 16 16 36 55 22	4.935008 4.728204 4.916088	86101 53482 82430	16.307 10.129 15.612	"	298	Yemsha, XXXV Yanagapali, XXXVII Radrur Fort	16 22 39 30 8 24	4.773454 5.024062 5.183947	59355 105097 152738	11.241 20.018 28.928	"
286	Shivalingapa, XXXVI Juni Kaisar Ali's Tomb	52 40 47 15 54 57	4.847634 4.385232 4.916088	70410 24279 82430	13.335 4.598 15.612	"	299	Yemsha, XXXV Boden Radrur Fort	4 26 13 162 54 59	4.444587 5.024062 4.896381	27835 105097 78774	5.272 20.018 14.919	"
287	Yemsha, XXXV Kandakurti Kaldurki Fort	14 8 21 150 11 34	4.486142 4.794687 4.529724	30630 62329 33863	5.801 11.805 6.413	"	300	Baktapur, XXXVIII Burgapali, XXXIX Kotgir Idgah	80 58 21 48 29 47	5.057194 4.937039 4.950207	114076 86505 89168	21.605 16.383 16.888	"
288	Yemsha, XXXV Yanagapali, XXXVII Kaldurki Fort	43 24 59 21 44 1	5.069287 4.794687 5.183947	115688 62329 152738	21.911 11.805 28.928	"	301	Yanagapali, XXXVII Burgapali, XXXIX Kotgir Idgah	77 35 44 35 32 32	5.057194 4.831855 5.031034	114076 67898 107497	21.605 12.859 20.342	"
289	Yanagapali, XXXVII Baktapur, XXXVIII Narsapur	93 12 25 11 17 46 75 29 49	5.134876 4.427545 5.121492	136419 26764 132279	25.837 5.069 25.053	"	302	Shivalingapa, XXXVI Baktapur, XXXVIII Mainur	106 59 45 59 24 16	4.403931 5.013215 4.967502	25347 103090 92790	4.801 19.525 17.574	"
290	Baktapur, XXXVIII Burgapali, XXXIX Narsapur	42 33 52 96 59 10 40 26 58	4.968328 5.134876 4.950207	92967 136419 89168	17.607 25.837 16.888	"	303	Baktapur, XXXVIII Burgapali, XXXIX Mainur	42 3 8 13 34 7 124 22 45	4.859535 4.403931 4.950207	72366 25347 89168	13.706 4.801 16.888	"
291	Baktapur, XXXVIII Narsapur Boden	49 37 33 5.084238 72 21 57	5.037636 5.084238 5.134876	109053 121405 136419	20.654 22.993 25.837	"	304	Yanagapali, XXXVII Baktapur, XXXVIII Daigtur Tomb	8 15 28 94 8 48	4.288986 5.130612 5.121492	19453 135087 132279	3.684 25.585 25.053	"
292	Yemsha, XXXV Baktapur, XXXVIII Boden	14 38 26 142 26 0	5.084238 4.890381 5.278787	121405 78774 190015	22.993 14.910 35.988	"	305	Shivalingapa, XXXVI Yanagapali, XXXVII Daigtur Tomb	51 14 5 25 2 42	5.130612 4.865354 5.226102	135087 73342 168307	25.585 13.891 31.876	"

* See note to page 21—A.

PRINCIPAL-AUXILIARY STATIONS, AND INTERSECTED POINTS.

No. of triangle	Station	Corrected plane angle	Distance			No. of triangle	Station	Corrected plane angle	Distance			Theodolite used
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
306	Baktápur, XXXVIII Mainúr Potangal Fort	42 10 18 118 56 46	4.720842 4.835936 4.403931	52583 68539 25347	9.959 12.981 4.801	319	Baktápur, XXXVIII Bichkundá Patápur Mosque	11 24 7 67 26 18	4.051410 4.720845 4.747133	11257 52583 55864	2.132 9.959 10.580	Inch C.T.I. "
307	Shiválingápa, XXXVI Baktápur, XXXVIII Potangal Fort	44 16 4 64 49 27	4.835936 4.948724 4.967502	68539 88864 92790	12.981 16.830 17.574	320	Burgápáli, XXXIX Manganal, XL Chini Málegaon Temple	49 5 57 40 55 31	4.934262 4.872120 5.055830	85953 74494 113718	16.279 14.109 21.538	" " "
308	Baktápur, XXXVIII Mainúr Shakargáh Fort	66 58 27 43 30 45	4.396249 4.270218 4.403931	24903 18630 25347	4.716 3.528 4.801	321	Baktápur, XXXVIII Burgápáli, XXXIX Chini Málegaon Temple	54 20 20 22 11 54	4.872120 4.539586 4.950207	74494 34641 89168	14.109 6.561 16.888	" " "
309	Shiválingápa, XXXVI Baktápur, XXXVIII Shakargáh Fort	8 40 30 40 1 18	4.270218 4.899995 4.967502	18630 79432 92790	3.528 15.044 17.574	322	Baktápur, XXXVIII Mainúr Júkal Fort	60 22 11 88 25 48	4.628712 4.689412 4.403931	42532 48912 25347	8.055 9.264 4.801	" " "
310	Baktápur, XXXVIII Mainúr Madnúr Fort	29 10 50 30 51 51	4.154336 4.176326 4.403931	14264 15008 25347	2.701 2.842 4.801	323	Baktápur, XXXVIII Mainúr Júkal Idgah	64 52 23 85 5 8	4.661244 4.702819 4.403931	45840 59445 25347	8.682 9.554 4.801	" " "
311	Shiválingápa, XXXVI Baktápur, XXXVIII Madnúr Fort	9 17 46 77 48 55	4.176326 4.958159 4.967502	15008 90815 92790	2.842 17.200 17.574	324	Yanágapáli, XXXVII Baktápur, XXXVIII Júkal Idgah	22 8 18 76 40 53	4.702819 5.114817 5.121492	59445 130262 132279	9.554 24.671 25.053	" " "
312	Shiválingápa, XXXVI Baktápur, XXXVIII Sultánpett Tower	19 27 9 102 39 9	4.562057 5.028904 4.967502	36480 100882 92790	6.909 20.243 17.574	325	Yanágapáli, XXXVII Narsápur Dasepett Fort	63 3 42 59 21 22	4.451239 4.435796 4.427545	28264 27277 26764	5.353 5.106 5.069	" " "
313	Baktápur, XXXVIII Mainúr Sultánpett Tower	4 20 36 165 56 9	4.055720 4.562057 4.403931	11369 36480 25347	2.153 6.909 4.801	326	Yanágapáli, XXXVII Narsápur Kobápuram Stone Fort	34 18 25 24 48 44	4.244930 4.116821 4.427545	17576 13086 26764	3.329 2.478 5.069	" " "
314	Baktápur, XXXVIII Narsápur Birkúr Palace	11 30 24 13 43 15	4.805152 4.880347 5.134876	63849 75918 136419	12.093 14.378 25.837	327	Yanágapáli, XXXVII Narsápur Boreliam Hill Pagoda	45 25 32 73 17 32	4.337234 4.465815 4.427545	21739 29229 26764	4.117 5.536 5.069	" " "
315	Yanágapáli, XXXVII Narsápur Birkúr Palace	93 29 26 61 46 34	4.805152 4.759987 4.427545	63849 56362 26764	12.093 10.675 5.069	328	Yanágapáli, XXXVII Narsápur Bánswád Bastion	45 35 40 83 47 39	4.393389 4.536892 4.427545	24739 34426 26764	4.685 6.520 5.069	" " "
316	Baktápur, XXXVIII Burgápáli, XXXIX Bichkundá	21 28 11 28 48 30 129 43 19	4.627686 4.747133 4.950207	42431 55864 89168	8.036 10.580 16.888	329	Yanágapáli, XXXVII Narsápur Bánswád Bastion	54 8 31 78 40 23	4.470852 4.533572 4.427545	29370 35774 26764	5.600 6.775 5.069	" " "
317	Burgápáli, XXXIX Narsápur Bichkundá	68 10 40 27 2 4	4.937835 4.627686 4.968328	86663 42431 92967	16.414 8.036 17.607	330	Yanágapáli, XXXVII Narsápur Gauráram Fort	39 58 15 69 1 51	4.259684 4.422121 4.427545	18184 26431 26764	3.444 5.006 5.069	" " "
318	Baktápur, XXXVIII Bichkundá Bichkundá Fort	3 1 16 84 45 7	3.469304 4.745637 4.747133	2946 55672 55864	0.558 10.544 10.580	331	Yanágapáli, XXXVII Narsápur Tadkol Fortified Hill	41 15 28 97 12 9	4.425121 4.602500 4.427545	26615 40041 26764	5.041 7.583 5.069	" " "

* See note to page 31-A.

No. of triangle	Station	Corrected plane angle	Distance			Theodolite used	Station	Corrected plane angle	Distance			Theodolite used	
			Log. feet	Feet	Miles				Log. feet	Feet	Miles		
332	Yanágápáli, XXXVII Baktápur, XXXVIII Kaulás Fort	33 37 46 47 13 21	4 870419 4 992745 5 121492	74203 98343 132279	14 054 18 626 25 953	Inch c.t.i. "	Dámargáda, XLIII Malgi, XLVI Bápur Mosque	55 34 6 26 1 6	4 734227 4 460005 4 813179	54228 28841 65040	10 271 5 462 12 318	Inch 36 "	
333	Yanágápáli, XXXVII Báchápáli, XLI Badá Kodápgal Turret	36 47 48 57 12 49	4 799093 4 946321 5 020618	62964 88373 104862	11 925 16 737 19 860	"	Dúdála, XLIIV Shilápáli, XLVII Malligá	28 35 44 77 3 23 74 20 53	4 670772 4 979600 4 974367	46857 95411 94269	8 874 18 070 17 854	c.t.i. "	
334	Burgápáli, XXXIX Báchápáli, XLI Petlam Hill Platform	8 3 3 15 34 8	4 420535 4 793025 4 877028	26335 50469 75340	4 988 9 559 14 269	"	Dámargáda, XLII Dúdála, XLIV Malligá	78 20 25 41 50 9 59 49 26	4 979600 4 812780 4 925413	95411 64980 84219	18 070 12 307 15 951	"	
335	Yanágápáli, XXXVII Báchápáli, XLI Kistnápuram Palace	11 22 22 107 57 27	4 375084 5 038507 5 020618	23718 114421 104862	4 492 21 671 19 860	"	Dámargáda, XLIII Malligá Karámungí Tomb	55 35 14 26 3 12	4 733867 4 460089 4 812780	54183 28846 64980	10 262 5 463 12 307	"	
336	Manganál, XL Dámargáda, XLIII Barágaon Fort	2 48 53 3 6 12	4 753039 4 793394 5 075185	56629 62430 118900	10 725 11 824 22 519	"	Dámargáda, XLIII Sikurti Fatelpur Mosque	59 11 2 93 13 38	4 611645 4 677055 4 343442	40893 47540 22052	7 745 9 004 4 176	"	
337	Dámargáda, XLIII Malgi, XLVI Sikurti	97 16 34 64 51 3	4 852921 4 343442 4 813179	71272 22052 65040	13 499 4 176 12 318	"	Dámargáda, XLIII Malgi, XLVI Fatelpur Mosque	38 5 32 46 42 47	4 603202 4 677055 4 813179	40290 47540 65040	7 631 9 004 12 318	36 "	
338	Dámargáda, XLIII Sikurti Dámargáda, N. Meridian Mark	63 40 46 22 30 59	4 296867 3 927540 4 343442	19809 8463 22052	3 752 1 603 4 176	"	Dámargáda, XLIII Shilápáli, XLVII Bider	44 21 58 41 38 21 93 59 41	4 859586 4 837413 5 013903	72375 68772 103253	13 707 13 025 19 555	c.t.i. "	
339	Dámargáda, XLIII Sikurti Dámargáda, S. Meridian Mark	116 19 14 14 4 41	4 414208 3 847783 4 343442	25954 7043 22052	4 916 1 334 4 176	"	Manganál, XL Dámargáda, XLIII Bider	32 49 18 77 36 22 69 34 20	4 837413 5 093152 5 075185	68772 123923 118900	13 025 23 470 22 519	"	
340	Báchápáli, XLI Dúdála, XLIV Tirlápuram	20 47 16 141 8 40	4 661962 4 603407 4 999363	45916 40124 81165	8 696 7 599 15 372	"	Dámargáda, XLI Dúdála, XLIV Bider Minaret	102 8 12 34 33 45	5 079380 4 843013 4 925413	120055 69665 84219	22 738 13 194 15 951	"	
341	Báchápáli, XLI Tirlápuram Nizámpett Fort	18 35 9 26 44 10	4 254912 4 404594 4 603407	17985 25386 40124	3 406 4 808 7 599	"	Dámargáda, XLIII Malgi, XLVI Bider Minaret	23 46 54 87 22 13	4 449048 4 843013 4 813179	28122 69665 65040	5 326 13 194 12 318	36 "	
342	Báchápáli, XLI Tirlápuram Sankrámpett Fort	4 51 46 120 57 54	3 622744 4 697729 4 603407	4195 42435 40124	0 795 8 037 7 599	"	Dámargáda, XLIII Malgi, XLVI Chikurti Math	8 44 27 17 16 26	4 352853 4 643777 4 813179	22535 44033 65040	4 268 8 340 12 318	"	
343	Báchápáli, XLI Tirlápuram Dánampáli Tower	11 17 58 132 3 12	4 119631 4 698225 4 603407	13171 49914 40124	2 495 9 453 7 599	"	Shilápáli, XLVII Malligá Pámpád Turret	61 35 28 70 44 9	4 746215 4 776918 4 670772	55746 59830 46857	10 558 11 331 8 874	c.t.i. "	
344	Báchápáli, XLI Tirlápuram Músápett Bastion	9 53 7 141 3 29	4 151771 4 715390 4 603407	14183 51927 40124	2 686 9 835 7 599	"							

See note to page 21-4.

No. of triangle	Station	Corrected plane angle	Distance			No. of triangle	Station	Corrected plane angle	Distance			Theodolite used
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
ELLICHPUR SECONDARY SERIES.												
357	Ashti, XIX Badáli, XX Yáholí	s. 50 18 20 63 29 29 66 12 11	4.824861 4.890433 4.900086	66813 77702 79449	12.654 14.716 15.047	366	Ner, XVIII Wirúr, XXI Málegaon	57 45 12 59 27 48 62 47 0	5.091927 5.099837 5.113721	123574 125845 129933	23.404 23.834 24.609	Inch 14 " "
358	Ashti, XIX Yáholí Takalkherá Base, N. End	s. 65 59 38 29 4 47 84 55 35	4.822847 4.578797 4.890433	71260 37914 77702	13.496 7.181 14.716	367	Wirúr, XXI Málegaon Nachangaon	74 30 2 44 13 35 61 16 23	5.132879 4.992508 5.091927	135793 98290 123574	25.718 18.615 23.404	" " "
359	Ashti, XIX Takalkherá Base, N. End Thugaon	s. 54 59 17 42 59 44 82 0 59	4.496328 4.416774 4.578797	31357 26108 37914	5.939 4.945 7.181	368	Wirúr, XXI Ikjherá, XXIII Nachangaon	81 56 58 40 49 29 57 13 33	5.172796 4.992508 5.101795	148866 98290 126414	28.194 18.615 23.942	" " "
360	Takalkherá Base, N. End Thugaon Dahegaon	s. 63 57 4 36 9 10 79 53 46	4.456595 4.273924 4.496328	28615 18790 31357	5.420 3.559 5.939	369	Málegaon Nachangaon Nándgaon	64 50 25 15 40 50 99 28 45	5.095559 4.570653 5.132879	124612 37209 135793	23.601 7.047 25.718	" " "
361	Thugaon Dahegaon Shágarh Fort	s. 69 8 27 74 41 26	4.656183 4.669932 4.456595	45309 46766 28615	8.581 8.857 5.420	370	Náchangaon Nándgaon Garmsur	30 7 25 86 57 48 62 54 47	4.846603 5.145404 5.095559	70243 139767 124612	13.304 26.471 23.601	" " "
362	Dahegaon Shágarh Fort Ellichpur	s. 37 41 25 75 33 56	4.456434 4.633311 4.656183	28604 42984 45309	5.418 8.141 8.581	371	Náchangaon Garmsur Bsaumbá	64 44 3 53 25 30 61 50 27	5.156443 5.104870 5.145404	143365 127312 139767	27.152 24.112 26.471	" " "
363	Ashti, XIX Thugaon Sholápur Fort	s. 19 57 40 89 11 14	3.974734 4.441449 4.416774	9435 27634 26108	1.787 5.234 4.945	372	Garmsur Bsaumbá Júnápáni	64 44 26 66 48 49 48 26 45	5.238704 5.245774 5.156443	173262 176106 143365	32.815 33.353 27.152	" " "
364	Ashti, XIX Thugaon Nirnál Fort	s. 36 42 14 70 7 15	4.212242 4.499092 4.416774	16302 25650 26108	3.088 4.858 4.945	373	Garmsur Júnápáni Láwá	34 3 37 50 1 39 95 54 44	4.996329 5.132519 5.245774	99158 135681 176106	18.780 25.697 33.353	" " "
365	Ashti, XIX Takalkherá Base, N. End Jalká Hill Mark	s. 94 0 38 65 10 25	5.027057 4.986009 4.578797	106428 96830 37914	20.157 18.339 7.181	374	Málegaon Nándgaon Kharki	56 3 10 101 28 51 22 27 59	4.997273 4.979651 4.570653	80774 95423 37209	15.298 18.072 7.047	" " "
						375	Nándgaon Garmsur Kharki	72 4 36 59 26 12 48 29 12	4.950631 4.907273 4.846603	89255 80774 70243	16.904 15.298 13.304	" " "
						376	Garmsur Kharki Filkápur	43 2 21 93 34 45 43 22 54	4.947867 5.112918 4.950631	88688 129693 89255	16.797 24.563 16.904	" " "

* See note to page 21—4.

No. of triangle	Station	Corrected plane angle	Distance			No. of triangle used	Station	Corrected plane angle	Distance			Theodolite used
			Log. feet	Feet	Miles				Log. feet	Feet	Miles	
377	Garmsur Lává Pilkápár	h.s. " " " "	4.982707 5.112018 5.132519	96096 129093 135081	18.200 24.563 25.697	388	Júni Sirádon Ratnigiri	18 13 47 124 2 5	4.703489 5.126581 4.994948	50523 133838 98843	9.569 25.348 18.720	Inch C.T.I. "
378	Bazárgaon Pilkápár Garmsur Rev. Survey Station	h.s. " " " "	5.116951 4.830720 4.842287	139093 67720 69548	24.792 12.826 13.172	389	Júni Ratnigiri Baurúl	32 40 52 84 40 50	4.860819 5.076928 5.126581	72580 119379 133838	13.746 22.610 25.348	" "
379	Lává Pilkápár Bazárgaon	h.s. " " " "	4.842287 4.865140 4.982707	69548 73306 96096	13.172 13.884 18.200	390	Júni Kauitá Baurúl	14 50 13 56 37 1	4.598446 5.076928 5.021780	32244 119379 105143	6.107 22.610 19.913	" "
380	Garmsur Lává Bazárgaon	h.s. " " " "	4.865140 4.850299 5.132519	73306 70843 135681	13.884 13.417 25.697	391	Shiválingápa, XXXVI Júni Chambergaon	92 14 37 39 13 15	4.989851 5.114824 4.916088	97600 130264 82430	18.502 24.671 15.612	" "
381	Júnápáni Lává Pipardará Rev. Survey Station	h.s. " " " "	4.854520 4.828095 4.996329	71535 67405 99158	13.548 12.766 18.780	392	Júni Sirádon Chambergaon	16 55 26 79 16 46 83 47 48	4.461542 4.989851 4.994948	28943 97600 98843	5.482 18.502 18.720	" "
382	Garmsur Júnápáni Kejbar	h.s. " " " "	5.045525 4.988974 5.245774	111052 97493 176106	21.032 18.465 33.353	393	Ratnigiri Baurúl Kurlá	35 42 30 107 1 29	4.844843 5.059223 4.860819	69959 114610 72580	13.250 21.706 13.746	" "
383	Esambá Júnápáni Kejbar	h.s. " " " "	5.045525 4.882724 5.238704	111052 76335 173262	21.032 14.457 32.815	394	Baurúl Kurlá Golágaon	41 27 21 86 26 4	4.666570 4.742865 4.844843	46406 55318 69959	8.789 10.477 13.250	" "
NANDER SECONDARY SERIES.												
384	Shiválingápa, XXXVI Baktápur, XXXVIII Kauitá	h.s. " " " "	5.125459 4.882202 4.967502	133493 76259 92790	25.283 14.443 17.574	395	Ratnigiri Baurúl Golágaon	45 22 48 65 34 8	4.742865 4.849779 4.860819	55318 70759 72580	10.477 13.401 13.746	" "
385	Shiválingápa, XXXVI Júni Kauitá	h.s. " " " "	5.021780 4.882292 4.916088	105143 76259 82430	19.913 14.443 15.612	396	Baurúl Kurlá Mallekuli	32 19 14 96 47 36	4.683115 4.951981 4.844843	48208 89533 69959	9.130 16.937 13.250	" "
386	Shiválingápa, XXXVI Júni Sirádon	h.s. " " " "	4.994948 5.047326 4.916088	98843 111513 82430	18.720 21.120 15.612	397	Ratnigiri Baurúl Mallekuli	60 26 58 74 42 15	4.951981 4.996838 4.860819	89533 99275 72580	16.937 18.802 13.746	" "
387	Júni Kauitá Sirádon	h.s. " " " "	4.994948 4.715417 4.994948	98843 51930 98843	18.720 9.835 18.720	398	Baurúl Kurlá Málegaon	21 10 36 127 47 14	4.690350 5.030336 4.844843	49017 107235 69959	9.284 20.310 13.250	" "
388	Shiválingápa, XXXVI Júni Sirádon	h.s. " " " "	4.994948 5.047326 4.916088	98843 111513 82430	18.720 21.120 15.612	399	Kurlá Mallekuli Málegaon	30 59 38 76 13 26 72 46 56	4.414780 4.690350 4.683115	25989 49017 48208	4.922 9.284 9.130	" "
389	Júni Kauitá Sirádon	h.s. " " " "	4.715417 4.994948 5.021780	51930 98843 105143	9.835 18.720 19.913	400	Sirádon Ratnigiri Yiledgaon Temple	119 46 6 37 45 56	5.059810 4.908328 4.703489	114765 80971 50523	21.736 15.335 9.569	" "

* See note to page 31-4.

PRINCIPAL-AUXILIARY STATIONS, AND INTERSECTED POINTS.

No. of triangle	Station	Corrected plane angle	Distance			Theodolite used	No. of triangle	Station	Corrected plane angle	Distance			Theodolite used
			Log. feet	Feet	Miles					Log. feet	Feet	Miles	
401	Sirádón Chambergaon Yiledgaon Temple	75 0 47 84 9 26	4.895561 4.908328 4.461542	78625 80971 28943	14.891 15.335 5.482	Inch C.T.I.	414	Ratnágiri Chambergaon Nander Tomb	75 14 32 53 37 46	4.653353 4.573824 4.559209	45015 37482 36242	8.525 7.099 6.864	Inch C.T.I.
402	Kauitá Baurúl Ganganbed Pagoda	97 17 26 52 50 32	4.807698 4.712668 4.508446	64224 51602 32244	12.164 9.773 6.107	"	415	Sirádón Ratnágiri Nander Tomb	29 17 19 109 27 22	4.573824 4.858794 4.793489	37482 72243 50523	7.099 13.682 9.599	"
408	Kauitá Baurúl Hippargá Hill Platform	84 40 57 60 51 44	4.753938 4.697050 4.508446	56746 49779 32244	10.747 9.428 6.107	"	416	Kauitá Baurúl Kandáhar Mosque	20 22 10 143 9 55	4.597663 4.833789 4.598446	39597 68201 32244	7.499 12.917 6.107	"
404	Kauitá Sirádón Hippargá Hill Platform	44 45 7 64 41 3	4.588496 4.697050 4.715417	38770 49779 51930	7.343 9.428 9.835	"	417	Ratnágiri Golágaon Lowá Building	17 2 48 65 36 17	4.320452 4.812745 4.849779	20915 64975 70759	3.961 12.506 13.401	"
405	Shiválingápa, XXXVI Baktápur, XXXVIII Mungál Rámatte	68 30 55 61 18 56 50 10 9	5.050899 5.025312 4.907502	112434 106001 92790	21.294 20.076 17.574	"	418	Ratnágiri Golágaon Shaudi Turret	54 8 21 37 15 17	4.758630 4.631921 4.849779	57363 42847 70759	10.864 8.115 13.401	"
406	Shiválingápa, XXXVI Kauitá Rámatte	22 28 3 85 34 19 71 57 38	4.486428 4.902885 4.882292	30650 79962 76259	5.805 15.144 14.443	"	NIRMAL SECONDARY SERIES.						"
407	Shiválingápa, XXXVI Mungál Rámatte	12 53 50 32 27 43 134 38 27	4.521821 4.902885 5.025312	33252 79962 106001	6.298 15.144 20.076	"	419	Shiválingápa, XXXVI Baktápur, XXXVIII Saiyid Yádullá Hill	61 20 21 86 43 23	5.187283 5.243338 4.907502	153916 175121 92790	29.151 33.107 17.574	"
408	Kauitá Rámatte Temburní Turret	53 40 43 21 57 32	4.406395 4.073021 4.486428	25492 11831 30650	4.828 2.241 5.805	"	420	Yemsha, XX XV Shiválingápa, XXXVI Saiyid Yádullá Hill	80 33 52 49 14 21	5.243338 5.128602 5.134752	175121 134463 136380	33.167 25.466 25.830	"
409	Baurúl Sirádón Haldá Fort	44 0 19 43 33 49	4.376002 4.375509 4.533798	23769 23578 34182	4.502 4.466 6.474	"	421	Yemsha, XXXV Saiyid Yádullá Hill Kudánpur	86 2 12 64 9 6	5.173344 4.870872 5.128602	149054 74280 134463	28.230 14.068 25.466	"
410	Kauitá Baurúl Baurúl Fort	4 27 46 15 16 42	3.870867 4.400618 4.508446	7428 25155 32244	1.407 4.764 6.107	"	422	Yemsha, XXXV Kudánpur Múnpáli	105 52 15 43 35 20	4.738337 5.015472 4.870872	54744 103627 74280	10.368 19.626 14.068	"
411	Baurúl Sirádón Umurá Fort	15 27 5 108 18 26	4.039563 4.591438 4.533798	10954 39034 34182	2.075 7.393 6.474	"	423	Saiyid Yádullá Hill Kudánpur Múnpáli	41 43 9 119 40 16	4.738337 5.057518 5.173344	54744 114161 149054	10.368 21.021 28.230	"
412	Sirádón Chambergaon Kápsi Turret	21 49 11 38 17 52	4.093677 4.315714 4.461542	12407 20688 28943	2.350 3.918 5.482	"	424	Kudánpur Múnpáli Yairgatá	78 37 42 70 20 33 31 1 45	5.017520 5.000052 4.738337	104117 100012 54744	19.719 18.942 10.368	"
413	Sirádón Chambergaon Nándgaon Pagoda	13 30 47 141 39 58	4.207116 4.631080 4.461542	16111 42764 28943	3.051 8.099 5.482	"							

* See note to page 21—4. † Base deduced by two sides and included angle.

No. of Triangle	Station	Corrected plane angle	Distance			Theodolite used	No. of Triangle	Station	Corrected plane angle	Distance			Theodolite used
			Log. feet	Feet	Miles					Log. feet	Feet	Miles	
425	Saiyid Yádullá Hill Munpáli Gadkol	h.s. " "	5° 02' 58.18 5° 17' 05.30 5° 05' 57.518	106125 150152 114161	20.099 28.438 21.621	Inch C.T.I. "	488	Yemsha, XXXV Kudánpur Nal Ishwar Pagoda	27 35 39 21 18 43	4° 05' 59.485 4° 55' 41.51 4° 87' 08.72	45655 35822 74280	7 8.647 6.784 14.068	Inch C.T.I. "
426	Munpáli Yaigatá Gadkol	h.s. " "	5° 14' 87.90 5° 02' 58.18 5° 01' 73.20	140861 106125 104117	26.678 20.099 19.719	" "	439	Yemsha, XXXV Kudánpur Umaidá Pagoda	32 12 30 44 36 19	4° 06' 09.203 4° 72' 89.49 4° 87' 08.72	40663 53573 74280	7.701 10.146 14.068	" "
427	Saiyid Yádullá Hill Gadkol Burgidá	h.s. " "	5° 11' 06.60 4° 99' 37.25 5° 17' 05.30	131722 98566 150152	24.947 18.668 28.438	" "	440	Yemsha, XXXV Kudánpur Mahalingam Pagoda	44 55 4 31 16 47	4° 73' 24.58 4° 59' 09.46 4° 87' 08.72	54008 39714 74280	10.229 7.522 14.068	" "
428	Saiyid Yádullá Hill Burgidá Báchápáli, XLI	h.s.	5° 05' 49.52 5° 11' 06.60 4° 99' 37.25	113489 130735 98566	21.494 24.760 18.668	" "	441	Yemsha, XXXV Kandákurti Nawapett Fort	82 33 24 48 56 36	4° 65' 15.93 4° 53' 26.74 4° 52' 97.24	44833 34094 33863	8.491 6.457 6.413	" "
429	Munpáli Gadkol Ramanapett	h.s. " "	4° 92' 70.62 4° 86' 80.66 5° 02' 58.18	84540 73802 106125	16.011 13.978 20.099	" "	442	Yemsha, XXXV Kudánpur Nawapett Fort	70 39 16 27 3 17	4° 84' 95.74 4° 53' 26.74 4° 87' 08.72	70725 34094 74280	13.395 6.457 14.068	" "
430	Munpáli Yaigatá Ramanapett	h.s. " "	4° 75' 38.34 4° 86' 80.66 5° 01' 73.20	56733 73802 104117	10.745 13.978 19.719	" "	443	Yemsha, XXXV Kudánpur Gaddichendá Drug	38 18 23 76 33 52	4° 70' 54.39 4° 90' 10.89 4° 87' 08.72	50750 79632 74280	9.612 15.082 14.068	" "
431	Kudánpur Yaigatá Bhesa Dargah	h.s. " "	5° 27' 32.48 5° 05' 49.39 5° 00' 00.52	187607 113485 100012	35.532 21.493 18.942	" "	444	Kudánpur Yaigatá Gaddichendá Drug	98 56 11 24 55 20	5° 07' 54.53 4° 70' 54.39 5° 00' 00.52	118974 50750 100012	22.533 9.612 18.942	" "
432	Yemsha, XXXV Kudánpur Bhesa Dargah	h.s.	5° 05' 49.39 4° 95' 00.35 4° 87' 08.72	113485 90372 74280	21.493 17.116 14.068	" "	445	Kudánpur Munpáli Kustapuram Pagoda	118 36 5 26 48 16	4° 92' 76.53 4° 63' 82.98 4° 73' 83.37	84655 43481 54744	16.033 8.235 10.368	" "
433	Yemsha, XXXV Kudánpur Banauli Hill Tomb	h.s.	4° 77' 42.10 4° 28' 15.19 4° 87' 08.72	55489 19121 74280	10.509 3.621 14.068	" "	446	Kudánpur Munpáli Souapett Fort	99 19 16 45 6 39	4° 90' 78.88 4° 82' 39.85 4° 73' 83.37	92873 66678 54744	17.590 12.628 10.368	" "
434	Kudánpur Munpáli Banauli Hill Tomb	h.s. " "	4° 93' 49.86 4° 7442.10 4° 7383.37	86097 55489 54744	16.306 10.509 10.368	" "	447	Yemsha, XXXV Kudánpur Nirmal Bastion	29 10 14 129 45 31	5° 00' 30.42 5° 20' 00.29 4° 87' 08.72	100703 158829 74280	19.073 30.081 14.068	" "
435	Yemsha, XXXV Kudánpur Banauli Barmá Ishwar	h.s.	4° 73' 42.08 4° 30' 08.45 4° 87' 08.72	54226 20410 74280	10.270 3.866 14.068	" "	448	Kudánpur Yaigatá Nirmal Bastion	45 44 32 67 35 47	4° 89' 21.63 5° 00' 30.42 5° 00' 00.52	78012 100703 100012	14.775 19.073 18.942	" "
436	Yemsha, XXXV Kudánpur Tungáná Barmá Ishwar	h.s.	4° 71' 34.19 4° 39' 32.22 4° 87' 08.72	51691 24718 74280	9.790 4.682 14.068	" "	449	Kudánpur Yaigatá Sonsádd Rock	31 24 56 53 28 29	4° 71' 88.20 4° 90' 08.18 5° 00' 00.52	52338 80690 100012	9.913 15.282 18.942	" "
437	Kudánpur Munpáli Nal Ishwar Pagoda	h.s. " "	4° 95' 43.03 4° 65' 48.5 4° 7383.37	90013 45655 54744	17.048 8.647 10.368	" "	450	Kudánpur Yaigatá Ratnápura Fort	16 56 27 17 29 55	4° 71' 20.58 4° 72' 57.01 5° 00' 00.52	51530 53174 100012	9.759 10.071 18.942	" "

* See note to page 83—4.

SECONDARY STATIONS, AND INTERSECTED POINTS.

No. of Triangle	Station	Corrected plane angle	Distance			Theodolite used	No. of Triangle	Station	Corrected plane angle	Distance			Theodolite used
			Log. feet	Feet	Miles					Log. feet	Feet	Miles	
451	Yairgatla Ramanapett Ratnapuram Fort	91 43 30 41 28 3	4.890875 4.712058 4.753834	77781 51530 56733	14.731 9.759 10.745	Inch C.T.I. "	Gadkol Ramanapett Chaipur Turret	21 52 21 115 16 35	4.665668 5.050785 4.927062	46309 112405 84540	8.771 21.289 16.011	Inch C.T.I. "	
452	Kudánpur Yairgatla Nallur Fort	15 52 16 22 18 42	4.645859 4.788320 5.000032	44245 61421 100012	8.380 11.633 18.942	"	Kudánpur Munpali Aurmur Pillar	24 49 7 45 29 23	4.387496 4.617674 4.738337	24406 41464 54744	4.622 7.853 10.368	"	
453	Kadánpur Munpali Komanpali Fort	83 49 54 35 11 17	4.794079 4.557221 4.738337	62241 36076 54744	11.788 6.833 10.368	"	Gadkol Ramanapett Ramanapett Fort	5 2 27 108 2 14	3.907107 4.941402 4.927062	8074 87378 84540	1.529 16.549 16.011	"	
454	Yairgatla Ramanapett Mallapuram Pagoda	116 42 44 37 22 19	5.064288 4.896482 4.753834	115955 78792 56733	21.961 14.923 10.745	"	Gadkol Ramanapett Govindpett Bastion	25 46 25 95 2 4	4.631431 4.991447 4.927062	42799 98050 84540	8.106 18.570 16.011	"	
455	Gadkol Ramanapett Balkondá Drug	18 23 41 135 31 56	4.783171 5.129500 4.927062	60698 134741 84540	11.496 25.519 10.011	"	Munpali Ramanapett Govindpett Bastion	14 35 36 11 9 30	4.631431 4.510833 4.868066	42799 32873 73802	8.106 6.226 13.978	"	
456	Munpali Ramanapett Balkondá Peak	48 51 5 53 20 28	4.754773 4.782266 4.868066	56856 60570 73802	10.768 11.472 13.978	"	Gadkol Ramanapett Thoriakondá Turret	30 57 57 87 32 7	4.694576 4.982766 4.927062	49497 90110 84540	9.374 18.203 16.011	"	
457	Munpali Gadkol Polliam Pagoda	80 50 54 41 13 27	5.092178 4.916631 5.025818	123645 82534 106125	23.418 15.631 20.099	"	Munpali Ramanapett Yailpur Turret	4 48 29 14 20 29	4.275486 4.740073 4.868066	18858 55728 73802	3.572 10.555 13.978	"	
458	Munpali Ramanapett Polliam Pagoda	28 28 11 88 10 55	4.595090 4.916631 4.868066	39363 82534 73802	7.455 15.631 13.978	"	Gadkol Ramanapett Motla Fort	10 27 9 70 49 30	4.190800 4.907325 4.927062	15517 80784 84540	2.939 15.300 16.011	"	
459	Munpali Gadkol Kambudrá Hill Pagoda	67 15 19 63 17 54	5.109902 5.096145 5.025818	128814 124780 106125	24.397 23.633 20.099	"	Munpali Gadkol Motla Fort	48 57 42 33 17 34	4.907325 4.769305 5.025818	80784 58790 106125	15.300 11.135 20.099	"	
460	Munpali Yairgatla Kambudrá Hill Pagoda	16 52 20 112 53 31	4.594527 5.096145 5.017520	39312 124780 104117	7.445 23.633 19.719	"	Munpali Ramanapett Jakrampali Pagoda	32 56 39 7 5 1	4.795205 4.150773 4.868066	62403 14151 73802	11.819 2.680 13.978	"	
461	Munpali Ramanapett Murthaud Fort	14 58 4 105 19 23	4.343900 4.916006 4.868066	22075 82432 73802	4.181 15.612 13.978	"	Gadkol Ramanapett Jakrampali Pagoda	40 50 25 76 47 33	4.795205 4.968017 4.927062	62403 92900 84540	11.819 17.595 16.011	"	
462	Munpali Yairgatla Murthaud Fort	16 46 52 43 22 7	4.539807 4.916006 5.017520	34558 82432 104117	6.564 15.612 19.719	"	Kudánpur Munpali Aulur Fort	14 43 32 11 16 37	4.501614 4.387718 4.738337	31741 24418 54744	6.011 4.625 10.368	"	
463	Munpali Ramanapett Chaipur Turret	35 8 38 31 24 1	4.665668 4.622372 4.868066	46309 41915 73802	8.771 7.939 13.978	"	Munpali Ramanapett Nadákudá Turret	5 58 35 7 55 27	4.504954 4.626871 4.868066	31986 42352 73802	6.058 8.021 13.978	"	

* See note to page 21.—4.

No. of triangle	Station	Corrected plane angle ° ' "	Distance			No. of triangle	Station	Corrected plane angle ° ' "	Distance			Theodolite used	
			Log. feet	Feet	Miles				Log. feet	Feet	Miles		
477	Múnpáli Gadkol Bíngal Mosque	h.s. " "	4.806759 4.859987 5.025818	64085 72441 106125	12.137 13.720 20.099	490	Mallánáguttá Lingampáli Wajápáli Fort	8. h.s.	44 4 7 86 0 40	4.456321 4.612958 4.497758	28597 41016 31460	5.416 7.768 5.958	Inch C.T.I. " "
478	Múnpáli Ramanapett Bíngal Mosque	h.s. " "	4.313640 4.859987 4.868666	20589 72441 73802	3.899 13.720 13.978	491	Mallánáguttá Lingampáli Mallúpett Fort	s. h.s.	44 51 59 37 48 33	4.349786 4.288800 4.497758	22376 19445 31460	4.238 3.683 5.958	" "
479	Múnpáli Gadkol Bichpáli Pagoda	h.s. " "	4.954970 4.728084 5.025818	90151 53467 106125	17.074 10.126 20.099	492	Mallánáguttá Lingampáli Tírmelpáli Great Bastion	s. h.s.	107 6 7 20 49 30	4.581153 4.151651 4.497758	38120 14179 31460	7.220 2.685 5.958	" "
480	Múnpáli Gadkol Mallánáguttá	h.s. " s.	4.884326 5.098232 5.025818	76617 125381 106125	14.511 23.746 20.099	493	Mallánáguttá Lingampáli Nagar Fort	s. h.s.	62 56 37 17 50 15	4.453067 3.989577 4.497758	28384 9763 31460	5.376 1.849 5.958	" "
481	Saiyid Yádullá Hill Gadkol Mallánáguttá	h.s. s.	4.884326 4.994085 5.176530	76617 98647 150152	14.511 18.683 28.438	494	Mallánáguttá Lingampáli Reddipett Fort	s. h.s.	169 2 49 6 34 15	4.893374 4.673155 4.497758	78230 47115 31460	14.816 8.923 5.958	" "
482	Saiyid Yádullá Hill Burgidá Lingampáli	h.s. " "	4.624487 4.853417 4.993725	42120 71354 98566	7.977 13.514 18.668	495	Mallánáguttá Lingampáli Uplaye Fort	s. h.s.	143 49 3 9 38 18	4.618676 4.071389 4.497758	41560 11787 31460	7.871 2.232 5.958	" "
483	Saiyid Yádullá Hill Gadkol Lingampáli	h.s. " "	5.014118 4.853417 5.176530	103304 71354 150152	19.565 13.514 28.438	496	Múnpáli Gadkol Dombardangatt Tree	h.s. " "	56 44 16 69 1 38	5.038866 5.086803 5.025818	109362 122124 106125	20.712 23.130 20.099	" "
484	Gadkol Mallánáguttá Donákal Fort	h.s. s.	4.574340 4.669521 4.884326	37527 46722 76617	7.107 8.849 14.511	497	Burgidá Lingampáli Gandáhrí Bastion	h.s. " "	33 43 9 90 47 40	4.452953 4.708523 4.624487	28376 51112 42120	5.374 9.680 7.977	" "
485	Mallánáguttá Lingampáli Donákal Fort	s. h.s.	4.764615 4.574340 4.497758	58159 37527 31460	11.015 7.107 5.958	498	Burgidá Lingampáli Kannákal Turret	h.s. " "	16 54 46 27 8 40	4.246034 4.441456 4.624487	17621 27635 42120	3.337 5.234 7.977	" "
486	Múnpáli Gadkol Daggí Hill Fort	h.s. " "	4.936649 4.975849 5.025818	86427 94591 106125	16.369 17.915 20.099	499	Mallánáguttá Lingampáli Kannákal Turret	s. h.s.	33 2 43 70 9 38	4.246034 4.482824 4.497758	17621 30397 31460	3.337 5.757 5.958	" "
487	Gadkol Mallánáguttá Kalbáral Turret	h.s. s.	4.416132 4.901246 4.884326	26069 79661 76617	4.937 15.087 14.511	500	Burgidá Lingampáli Daime Fort	h.s. " "	17 42 22 16 51 10	4.353776 4.332979 4.624487	22583 21527 42120	4.277 4.077 7.977	" "
488	Mallánáguttá Lingampáli Kalbáral Turret	s. h.s.	4.432463 4.416132 4.497758	27068 26069 31460	5.127 4.937 5.958	501	Mallánáguttá Lingampáli Daime Fort	s. h.s.	38 47 2 80 27 8	4.353776 4.550877 4.497758	22583 35553 31460	4.277 6.734 5.958	" "
489	Mallánáguttá Lingampáli Wutnúr Fort	s. h.s.	4.370788 4.586128 4.497758	23485 38559 31460	4.448 7.303 5.958	502	Burgidá Mallánáguttá Kámáreddipett Fort	h.s. s.	10 59 51 147 7 11	4.454868 4.909075 4.745736	28501 81110 55685	5.398 15.362 10.546	" "

* See note to page 21—4. † Base deduced by two sides and included angle.

SECONDARY STATIONS, AND INTERSECTED POINTS.

No. of triangle	Station	Corrected plane angle	Distance			No. of triangle	Station	Corrected plane angle	Distance			Theodolite used
			Log. feet	Foot	Miles				Log. feet	Foot	Miles	
503	Gadkol Mallánáguittá Rangampett Fort	° ' " 5 9 4 31 26 23	4°06'22.02	11540	2.186	503	Burgidá Mallánáguittá Kámáreddípett Idgah	° ' " 30 8 38 74 10 17	4°46'02.88	28859	5.466	Theodolite used
			4°48'26.48	67042	12.697				4°74'26.47	55290	10.472	
			4°48'43.26	76617	14.511				4°74'57.36	55685	10.546	
504	Burgidá Mallánáguittá Rangampett Fort	° ' " 6 53 47 37 41 41	4°06'22.02	11540	2.186	506	Burgidá Lingampáli Ránjampett Fort	° ' " 88 9 1 51 19 52	4°81'15.51	64796	12.272	Theodolite used
			4°80'18.19	64687	12.251				4°70'43.01	50617	9.587	
			4°74'57.36	55685	10.546				4°62'44.87	42120	7.977	

* See note to page 21-4. † Base deduced by two sides and included angle.

October 1876.

J. HERSCHEL.

GREAT ARC MERIDIONAL SERIES—SECTION 18° TO 24°.

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

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

Name of station with azimuths of surrounding points	Triangle giving distance	Name of station with azimuths of surrounding points	Triangle giving distance	Name of station with azimuths of surrounding points	Triangle giving distance
ADAMPUR h.s.	0 1 "	AHMADPUR, II	0 1 "	ALAMPUR, XIII,	0 1 "
Baktápur, XXXVIII	12 10 57	Kámkherá Fort	64 30 40	Jhupal Hill Mark	52 25 28
Tupselgaon Fortress	13 8 22	Sapawá Hill Mark	84 3 12	Narwargarh, XI	187 32 59.02
Shiválingápa, XXXVI	165 16 56	Saláia Hill Tree	89 6 50	Jámgarh Hill Mark	220 33 50
ADGAON h.s.		Ládpur Hill Mark	165 27 5	Bhorgarh Hill Mark	237 33 4
Kolgaon Fort	0 13 17	Bardhá	h.s.	Bámándeopahár Hill Mark	241 18 41
Kanjará Pettah	1 7 55	Kúa	175 43 55	Dhába Deo, XII	264 51 4.63
Umri Fort	1 39 52	Kámkhers, (IV)	"	Chúriá	h.s.
Patrad Fort	10 6 4	Sirái Hill Mark	184 41 23	Chicholi Hill Mark	280 5 22
Dongargaon Hill Pagoda	90 7 55	Púper	185 10 53.91	Jágdhar, XIV	297 17 46
Jaggádar Hill Mark	238 0 12	Gadiákápur Hill Pagoda	202 39 27	Núlgarh, XV	302 3 55.47
Utaigaon Fort	283 47 8	Udepur Hill Mark	221 18 39		346 17 36.59
Shivni, XXXII	283 57 33	Bhári	230 44 43		
Chotá Walki Pagoda	338 2 51	Gárgája, I	245 41 43		
Terbán, XXXI	351 37 0	Lohangi	249 51 43.47		
		Bhilsa Temple	302 25 57		
		Parsurá Hill Tree	304 56 59		
		Ander, III	308 34 21		
		Wúcher Hill Mark	313 27 15.74		
AHMADPUR, II	28 8 18		340 5 28	AMBAOTI s.	
Sauyer Hill Pagoda	28 49 17.73			Nimbá	s. 82 45 9
Gidgarh, IV				Talegaon	" 120 31 41
				Gawilgurh Range, Peak No. 2	" 157 35 1
				ANDER, III	
				Kattáo Hill Mark	17 32 37
				Ládi, V	35 16 42.48
					104 5

AZIMUTHS OF STATIONS, AND INTERSECTED POINTS.

Name of station with azimuths of surrounding points	No. of triangulation distance	Name of station with azimuths of surrounding points	No. of triangulation distance	Name of station with azimuths of surrounding points	No. of triangulation distance
ANDER, III Marmango Hill Mark	97	BACHAPALI, XLI Burgidá	428	BAKTAPUR, XXXVIII Shivalingápa, XXXVI	47
Raisen Hill Fort	96	Dánampáli Tower	343	Daigúr Tomb	304
Sembardá Hill Mark	94	Músnapétt Bastion	344	T'upsegaon Fortress	295
Gidgarh, IV	4	Tiriápuram	340	Adampur	293
Sauyer Hill Pagoda	91	Sankrámpétt Fort	342	Shakargáh Fort	308
Ahmadpur, II	3	Nizámpétt Fort	341	Yemaba, XXXV	48
Parsurá Hill Tree	93			Selgaon Fort	297
Gárgája, I	8			Boden	291
Rámpur, VII	6	BADALI, XX Badgaon, XXII	29	Potangal Fort	306
		Ashiti, XIX	28	Kotgir Idgah	800
ANJANGAON, h.s.		Yáholi	357	Madnúr Fort	310
Pilkher, XXIV	172	Ner, XVIII	28	Saiyid Yádullá Hill	419
Badgaon, XXII	173	Wirúr, XXI	31	Birkúr Palace	314
Bhátkuli Fort	184	Ikjhera, XXIII	30	Yanágapáli, XXXVII	47
Nimbá	178			Sultámpétt Tower	312
Alangaon Fort	183			Narsápur	289
Attorná Building	182	BADGAON, XXII Káranja Fort	190	Mainúr	302
Talegaon	174	Gawilgurh Raunge, Penk No. 2	171	Bichkundá Fort	318
Ashiti Fort	176	Damúri Fort	180	Bichkundá	816
Rámá	175	Bhátkuli Fort	185	Patlápur Mosque	319
Ikjhera, XXIII	172	Ashti, XIX	29	Kaulás Fort	332
		Talegaon	174	Burgápaí, XXXIX	49
ARNI, s.		Ashti Fort	177	Júkál Fort	822
Máhúr, XXVIII	222	Nimbá	179	Júkál Idgah	323
Sákri, XXVII	221	Alangaon Fort	183		
Shivni Hill Mark	221	Bádáli, XX	29		
		Anjangaon	29		
ASHRI, XIX		Ikjhera, XXIII	173	BAM, XXVI	
Badgaon, XXII	29	Donad	30	Máhúr, XXVIII	37
Nirndí Fort	364	Pilkher, XXIV	189	Terorá Fort	205
Sholápur Fort	359		33	Sákri, XXVII	36
Thugnaon	169	BAGDHA, h.s. Jágdhar, XIV	146	Shivni Hill Mark	209
Gawilgurh Mosque	26	Será Fort	153	Bori Fort	203
Dhár, XVII	165	Betál Fort	152	Mahagaon Fort	204
Bahram Shahíd Hill Mark	358	Laliápahár Hill Mark	147	Badgaon Fort	202
Takalkherá Base, N. End	27	Kherlá Hill Fort	150	Kopdi, XXV	35
Sálbáldi, XVI	27	Kandera Hill Mark	149	Ikjhera, XXIII	35
Ner, XVIII	26	Dhába Deo, XII	146		
Yáholi	357				
Jalká Hill Mark	365	BAGHDEO, h.s. Shálpur Tomb	139		
Bádáli, XX	28	Bámaoepahár Hill Mark	138	BARDHA, h.s.	
		Dhába Deo, XII	138	Kámkherá Fort	82
BACHAPALI, XLI				Salaia Hill Tree	86
Dúdála, XLIV	52			Sapawá Hill Mark	88
Dámargida, XLII	51			Ládpur Hill Mark	75
Kistnápúram Palace	335			Pápur	74
Burgápaí, XXXIX	50			Gárgája, I	73
Badá Kodagal Turret	333	BAKTAPUR, XXXVIII Chini Málegaon Temple	321	Gadlákákpúr Hill Pagoda	81
Petlam Hill Platform	334	Manganál, XL	55	Sirsí Hill Mark	78
Yanágapáli, XXXVII	50	Mungtal	405	Wúcher Hill Mark	88
Saiyid Yádullá Hill	428	Kauitá	384	Ahmadpur, II	73
		Bett Mugur Fort	296		
				BARKACH, s.	
				Katgaon	116
				Rámipur, VII	116
				Tek, X	117

Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance
BAURUL h.s.		BHIMBAT, VIII		BODEN s.	
Kurlá h.s. 59 19 58	393	Ládi, V 194 33 58·84	7	Baktápur, XXXVIII 60 26 14	291
Málegaon s. 80 30 34	398	Kattáo Hill Mark 210 2 23	105	Yemsha, XXXV 202 52 14	292
Kandáhar Mosque 90 49 13	416	Ránipur, VII 249 42 17·93	7	Narsápur h.s. 348 4 17	291
Mallekulí " 91 39 12	396	Tek, X 305 11 1·46	14		
Golágaon " 100 47 19	394	Morpáni, IX 323 2 10·11	10	BORDHA s.	
Ratnigiri h.s. 166 21 27	389			Jámgarh Hill Mark 6 18 38	135
Sirádon " 204 50 51	411	BICHKUNDA h.s.		Nílgarh No. 1 s. 173 59 46	134
Umrá Fort " 220 17 56	411	Burgápáli, XXXIX 1 22 36	316	Morpáni, IX 221 53 36	134
Hippargá Hill Platform 246 47 34	403	Patlápur Mosque 63 39 37	319		
Haldá Fort 248 51 10	409	Baktápur, XXXVIII 131 5 55	316	BURGAPALI, XXXIX	
Júni " 251 2 17	389	Bichkundá Fort 215 51 2	318	Dámargída, XLII 8 12 38·14	51
Ganganbed Pagoda 254 48 46	402	Narsápur h.s. 276 35 20	317	Manganál, XL 81 16 11·56	55
Kauitá " 307 39 18	390			Chini Málegaon Temple 130 22 9	320
Baurúl Fort 322 56 0	410	BIDER BASE-LINE, E. END, XLV		Baktápur, XXXVIII 152 34 3·03	49
		Bider base-line, W. End, XLIII 125 52 18·93	54	Mainúr h.s. 166 8 10	303
BAZARGAON h.s.		Dámargída, XLII 196 46 55·66	53	Bichkundá " 181 22 33	316
Garmsur Revenue Survey s. 37 13 3	378	Dúdála, XLIV 259 57 38·20	53	Kotgir Idgah " 201 3 51	300
Garmsur h.s. 47 12 24	380			Yanágapáli, XXXVII 236 36 22·51	49
Pilkápár " 182 10 49	379	BIDER BASE-LINE, W. END, XLIII		Narsápur " 249 33 13	290
Lává " 266 41 11	379	Manganál, XL 153 7 32·91	57	Petlam Hill Platform 295 58 2	334
		Dámargída, XLII 236 4 45·68	54	Báchápáli, XLI 304 1 5·28	50
BHAORASA, (V)		Bider base-line, E. End, XLV 305 50 31·50	54		
Púper h.s. 38 19 57	63	Malgi, XLVI 311 37 15·44	58	BURGIDA h.s.	
Kúa " 59 58 1	67			Báchápáli, XLI 69 46 20	428
Kámkhera, (IV) 62 47 22·94	1	BIDER s.		Saiyid Yádullá Hill 145 31 56	427
Belai Hill Mark 339 39 56	66	Manganál, XL 154 47 10	352	Gandáhrí Bastion 151 24 39	497
Udepur Hill Mark 349 38 41	65	Dámargída, XLII 224 21 30	351	Lingampáli h.s. 185 7 48	482
Gárgája, I 355 2 21·02	1	Shilápáli, XLVII 318 21 11	351	Kannákal Turret 202 2 34	498
				Daime Fort 202 50 10	500
BHARI s.		BITARGAON, XXX		Mallánácuttá s. 219 12 43	502
Lohángí h.s. 10 56 54	84	Jeroná Fort 4 40 37	245	Gadkol h.s. 225 30 24	427
Ahmadpur, II 65 45 43	69	Sirpalí Hill Mark 7 32 47	248	Rangampett Fort 226 6 30	504
Kámkhera, (IV) 159 53 36	70	Soná Fort 9 56 17	244	Rámáreddipett Fort 230 12 34	502
Púper " 173 38 1	69	Garápur Fort 38 56 17	243	Kámáreddipett Idgah 249 21 21	505
		Terbán, XXXI 42 29 49·59	40	Ráhjampett Fort 273 16 49	506
BHESA, XXXIII		Chatári Pettah 53 6 14	242		
Somtána, XXXIV 85 30 33·11	43	Bámangaon Building 65 10 2	231	CHAMBERGAON h.s.	
Bokar Hill Mark 110 44 27	252	Bámangaon Hill Pagoda 66 3 51	232	Sirádon h.s. 6 13 35	392
Chichúnd, West Spire 119 42 49	254	Dánkí Hill Pagoda 88 37 20	229	Ratnigiri " 107 15 26	414
Terbán, XXXI 123 22 43·02	42	Umarkhed Idgah 95 3 10	227	Nander Tomb 160 53 12	414
Sirpalí Hill Mark 164 44 28	249	Umarkhed Hill Pagoda 97 40 44	225	Nandgaon Pagoda 224 33 37	413
Pedápardí Hill Mark 192 41 26	250	Súkli, XXIX 115 14 20·35	39	Yiledgaon Temple 282 4 9	401
Shivni, XXXII 209 29 36·89	42	Daggútar Hill Mark 119 57 10	223	Júni " 282 25 47	391
Yárbid Tree 347 35 46	255	Jaggúdar Hill Mark 142 24 41	224	Shiválingápa, XXXVI 321 39 2	391
Yemsha, XXXV 359 53 15·72	44	Máhúr, XXVIII 176 46 8·41	39	Kápsi Turret 327 55 43	412
		Shivni, XXXII 321 2 0·11	41		
BHIMBAT, VIII		Kalári Fort 349 31 9	247	CHAURAPATAR h.s.	
Narwargarh, XI 1 40 52·77	11	Bisí Fort 354 45 33	246	Bahram Shahíd Hill Mark 46 28 59	166
Samaagarh, VI 137 55 56·70	9			Dhár, XVII 61 23 45	157
Manúábhár h.s. 152 15 7	100	BODEN s.		Derpáni h.s. 67 11 44	164
Bhimbat Tree 175 34 46	110	Radrúr Fort 5 47 13	299	Kamlá Hill Mark 73 16 24	162

AZIMUTHS OF STATIONS, AND INTERSECTED POINTS

Name of station with azimuths of surrounding points	Triangle distance	Name of station with azimuths of surrounding points	Triangle distance	Name of station with azimuths of surrounding points	Triangle distance	No. of triangles giving	
CHAURAPATAR h.s. Nilgarh, XV Jillar Jagdhar, XIV Atner, W. Turret	130 1 7 h.s. 143 13 45 210 59 25 205 51 12	DHABA DEO, XII Narwargarh, XI Bhorgarh Hill Mark Jangarh Hill Mark Bamandeopahar Hill Mark Shahpur Tomb Morpani, IX Béghdeo Tek, X Bagdha Jagdhar, XIV Kherla Hill Fort Lalispahar Hill Mark	156 159 156 160 142 142 143 360 361 362 360	115 47 32 24 133 37 7 141 51 7 150 3 31 173 35 58 177 7 12 70 h.s. 178 40 34 202 59 46 30 330 47 45 348 22 41 62 348 53 35 358 46 16	DUDALA, XLIV Dámargáda, XLIII Báchápáli, XLI Trilápuram ELLICHPUR s. Sháhgarh Fort Dahegaon ESAMBA h.s. Náchangson Garmsur Keljar Júnápáuí GADKOL h.s. Rangampett Fort Burgidá Mallánágtttá Lingampáli Dombardangatt Tree Kalbaral Turret Donakal Fort Deggí Hill Fort Saiyid Yáduállá Hill Bichpáli Pagoda Múnupáli Jaktimpáli Pagoda Thoriákoná Turret Govindpett Bastion Chaiapur Turret Balkoná Drug Motia Fort Ramanapett Fort Polliam Pagoda Bingal Mosque Ramanapett Yaírgatlá Rámbudrá Hill Pagoda	12 140 132 136 139 12 138 16 146 18 160 147 169 167 161 163 154 23 158 24 157 23 25 165 26 168 167 167 219 219 188 193 191 189 188 192 60 59 346 53 354	52 52 340 362 362 371 371 383 372 503 427 480 488 496 487 484 486 425 479 425 474 469 467 464 455 471 466 457 477 429 426 459 3 85 2 73 74 1 1 370 370
CHURIA h.s. Alampur, XIII Bhorgarh Hill Mark Chicholi Hill Mark	100 7 21 220 40 17 350 47 23	DHAR, XVII Gawilgurrh Mosque Dhar Kamlá Hill Mark Derpáuí Nilgarh No. 2 Nilgarh, XV Jillar Jagdhar, XIV Chaurápatar Sáibáuí, XVI Ner, XVIII Bahram Shahid Hill Mark Ashti, XIX	108 109 108 339 61 355 53 347 58 353 351 54 349 345 348 337 336 56 338	63 10 5 75 23 6 125 11 3 h.s. 181 32 11 s. 195 13 2 196 41 9 63 212 37 4 227 35 36 88 241 17 36 277 21 39 12 311 58 1 90 338 22 8 352 3 48 91	GAJAJA, I Ander, III Lohángí Ahmadpur, II Bardhá Páper Káinkhera, (IV) Bhaorása, (V)	163 163 164 17 144 19	21 58 3 17 46 42 22 70 0 37 27 108 10 49 130 10 3 131 12 6 82 175 3 16 69 39 28 8 102 22 55
DALTHOBAN h.s. Ládi, V Buri Fort Rámpur, VII	110 42 42 239 37 57 350 3 39	DHARA s. Kamlá Hill Mark Dhar, XVII Bahram Shahid Hill Mark	108 109 108	131 39 36 255 22 52 331 15 12	GARGAJA, I Ander, III Lohángí Ahmadpur, II Bardhá Páper Káinkhera, (IV) Bhaorása, (V)	163 163 164	21 58 3 17 46 42 22 70 0 37 27 108 10 49 130 10 3 131 12 6 82 175 3 16 69
DAMARGIDA, XLIII Dámargáda, S. Meridian Mark Shilápáli, XLVII Chikurti Math Bider base-line, E. End, XLV Malligá Malgi, XLVI Bider Minaret Bider Bider base-line, W. End, XLVIII Fatehpur Mosque Bápur Mosque Karámungi Tomb Sikurti Barigson Fort Manganál, XL Dámargáda, N. Meridian Mark Burgápáli, XXXIX Báchápáli, XLI Dúdála, XLIV	0 0 1 0 2 6 08 10 18 14 16 47 52 51 19 1 49 19 2 41 24 42 49 35 44 24 4 56 7 30 53 57 8 13 74 36 47 74 37 3 116 19 15 118 54 14 122 0 26 01 180 0 1 188 12 0 70 242 43 37 92 300 41 23 73	DHARA s. Kamlá Hill Mark Dhar, XVII Bahram Shahid Hill Mark	339 61 355 53 347 58 353 351 54 349 345 348 337 336 56 338	8 19 14 248 15 35	GARGAJA, I Ander, III Lohángí Ahmadpur, II Bardhá Páper Káinkhera, (IV) Bhaorása, (V)	163 163 164	21 58 3 17 46 42 22 70 0 37 27 108 10 49 130 10 3 131 12 6 82 175 3 16 69
DEHPANI h.s. Dhar, XVII Kamlá Hill Mark Chaurápatar	1 32 12 100 20 50 h.s. 247 5 36	DUDALA, XLIV Shilápáli, XLVII Malgi, XLVI Malligá Bider base-line, E. End, XLV Bider Minaret	163 163 164	50 19 22 28 78 53 32 42 78 55 7 80 2 25 63 86 11 31	GARGAJA, I Ander, III Lohángí Ahmadpur, II Bardhá Páper Káinkhera, (IV) Bhaorása, (V)	60 59 346 53 354	21 58 3 17 46 42 22 70 0 37 27 108 10 49 130 10 3 131 12 6 82 175 3 16 69
DHABA DEO, XII Nilgarh, XV Jillar Jagdhar, XIV Atner, W. Turret	130 1 7 h.s. 143 13 45 210 59 25 205 51 12	DUDALA, XLIV Shilápáli, XLVII Malgi, XLVI Malligá Bider base-line, E. End, XLV Bider Minaret	156 159 156 160	50 19 22 28 78 53 32 42 78 55 7 80 2 25 63 86 11 31	GARGAJA, I Ander, III Lohángí Ahmadpur, II Bardhá Páper Káinkhera, (IV) Bhaorása, (V)	60 59 346 53 354	21 58 3 17 46 42 22 70 0 37 27 108 10 49 130 10 3 131 12 6 82 175 3 16 69
CHURIA h.s. Alampur, XIII Bhorgarh Hill Mark Chicholi Hill Mark	100 7 21 220 40 17 350 47 23	DUDALA, XLIV Shilápáli, XLVII Malgi, XLVI Malligá Bider base-line, E. End, XLV Bider Minaret	142 142 143	50 19 22 28 78 53 32 42 78 55 7 80 2 25 63 86 11 31	GARGAJA, I Ander, III Lohángí Ahmadpur, II Bardhá Páper Káinkhera, (IV) Bhaorása, (V)	60 59 346 53 354	21 58 3 17 46 42 22 70 0 37 27 108 10 49 130 10 3 131 12 6 82 175 3 16 69
CHAURAPATAR h.s. Nilgarh, XV Jillar Jagdhar, XIV Atner, W. Turret	130 1 7 h.s. 143 13 45 210 59 25 205 51 12	DUDALA, XLIV Shilápáli, XLVII Malgi, XLVI Malligá Bider base-line, E. End, XLV Bider Minaret	156 159 156 160	50 19 22 28 78 53 32 42 78 55 7 80 2 25 63 86 11 31	GARGAJA, I Ander, III Lohángí Ahmadpur, II Bardhá Páper Káinkhera, (IV) Bhaorása, (V)	60 59 346 53 354	21 58 3 17 46 42 22 70 0 37 27 108 10 49 130 10 3 131 12 6 82 175 3 16 69

Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance
GARMSUR h.s. Kharáí Pilkápár Bazárgaon Láwá Júnápaní Keljhar Esambá	875 876 880 373 372 382 371	HOSHANGABAD ROCK s. Ránipur, VII Morpani, IX Nílgarh No. 1	125 126 125	JUNAPANI h.s. Láwá	373
GIDGABH, IV Samasgarh, VI Bhopál Palace Manuábhár Islámegar House Sapawá Hill Mark Salala Hill Tree Ahmadpur, II Sayer Hill Pagoda Ander, III Raisen Hill Fort Sembará Hill Mark Marmango Hill Mark Ládi, V Hardal Hill Mark Bhimbat Tree	8 101 99 103 89 87 4 91 4 96 94 97 5 106 111	HOSHANGABAD s. Hoshangabad Rock Gurádiá Ránipur, VII Morpani, IX Nílgarh No. 1	128 128 123 124 123	JUNI h.s. Shivalíngápa, XXXVI Gaddaga Turret Manjiram Turret Kauráí Baurúl Sirádon Chambergaoon Ratnágiri Málkotá Somtána, XXXIV Múdhál Turret Yemsha, XXXV Kandákurtí Sangam Pagoda Jarákotá Fort Gujári Turret Kurbur Saválí Hill Pagoda Ráhir Pagoda Kaisar Ali's Tomb	256 285 284 385 389 386 391 388 258 257 259 256 262 278 268 270 283 267 286
GOLAGAON s. Kurlá Lowá Building Shaudí Turret Ratnágiri Baurúl	394 417 418 395 394	HOSHANGABAD ROCK s. Hoshangabad Rock Gurádiá Ránipur, VII Morpani, IX Nílgarh No. 1	128 128 123 124 123	KAMKHERA, (IV) Ahmadpur, II Bhaorása, (V) Honársí Fort Udepur Hill Mark Gargája, I Púper Bhári	2 1 71 64 1 62 70
GURADIA s. Hoshangabad Fort Hoshangabad Temple Hoshangabad Idgah Hoshangabad Hoshangabad Rock Nílgarh No. 1	129 130 131 128 127 127	HOSHANGABAD s. Hoshangabad Rock Gurádiá Ránipur, VII Morpani, IX Nílgarh No. 1	146 146 148 151 18 149	KANDAKURTI s. Kaldurkí Fort Kondilwadí Fort Pípalgaon Fort Sangam Pagoda Lagson Patodá Bastion Belúr Fort	287 280 273 277 272 276 262
HONARSI FORT s. Púper Kua Kámkhera, (IV)	71 72 71	JULLAR h.s. Dháir, XVII Nílgarh, XV Chaurápatar	158 158 159	JUNI Nágtáná Hill Pagoda Somtána, XXXIV Bálapur Fort Itolí Hill Pagoda Yemsha, XXXV Naiagaon Fort Kosáli Fort Belúf Fort Nawápett Fort Ránjil Fort Nílá Pagoda	263 261 271 265 261 274 275 279 441 282 281
HOSHANGABAD ROCK s. Gurádiá Hoshangabad Idgah Hoshangabad Fort Hoshangabad Temple Hoshangabad	127 131 129 130 128	JUNAPANI h.s. Esambá Keljhar Garmsur Pípardará Rev. Survey Station	372 382 372 381	KAMKHERA, (IV) Ahmadpur, II Bhaorása, (V) Honársí Fort Udepur Hill Mark Gargája, I Púper Bhári	2 1 71 64 1 62 70

AZIMUTHS OF STATIONS, AND INTERSECTED POINTS.

Name of station with azimuths of surrounding points	No. of triangling distance	Name of station with azimuths of surrounding points	No. of triangling distance	Name of station with azimuths of surrounding points	No. of triangling distance
KARGAON h.s. Morpáni, IX Bavai Flag Ránpur, VII Barkach Súbahpur Palace Tek, X	114 120 114 116 118 115	KUARA s. Morpáni, IX Ránpur, VII Tek, X	112 113 112	LAK s. Saungá Fort Ambhá Hill Pagoda Ambhá Fort Arambí Fort Shivni Hill Pagoda Shivni Hill Mark Chikni Fort Máhur, XXVIII	218 213 215 217 216 211 220 210
KAVTA h.s. Rámatté Kandáhar Mosque Baurúl Fort Baurúl Sirádon Híppargá Hill Platform Ganganbed Pagoda Jáni Shiválingápa, XXXVI Temburni Turret Baktápur, XXXVIII	406 416 410 390 387 403 402 385 384 408 384	KUDANPUR h.s. Saiyid Yádullá Hill Nawápett Fort Banauli Hill Tomb Yemsha, XXXV Banauli Barmá Ishwar Tunganá Barmá Ishwar Nal Ishwar Pagoda Mahálingam Pagoda Umaida Pagoda Bhesa Dargah Gaddíchendá Drug Nirmal Bastion Kustapuram Pagoda Sonápett Fort Sonápett Fort Ratnápuram Fort Nallúr Fort Komanpáli Fort Yairgatá Aurmúr Pillar Múnipáli Aulúr Fort	421 442 433 421 435 436 437 440 439 431 443 447 445 449 446 450 452 453 424 465 422 475	LAWA h.s. Pípardará Rev. Survey Station Garmsur Bazárgan Pilkápar Júnáspáni	381 373 379 377 378
KELJHAR h.s. Esambá Garmsur Júnáspáni	888 382 382	LINGAMPALI h.s. Burgidá Gandáhrí Bastion Saiyid Yádullá Hill Wutnúr Fort Wajápalí Fort Kalbáral Turret Mallúpett Fort Donákal Fort Gadkol Tirmelpáli Great Bastion Nagar Fort Uplaye Fort Reddipett Fort Mallánácuttá Rahjámpett Fort Kannákal Turret Daime Fort	482 497 482 489 490 488 491 485 483 492 493 495 494 485 506 498 500	LONGAMPALI h.s. Burgidá Gandáhrí Bastion Saiyid Yádullá Hill Wutnúr Fort Wajápalí Fort Kalbáral Turret Mallúpett Fort Donákal Fort Gadkol Tirmelpáli Great Bastion Nagar Fort Uplaye Fort Reddipett Fort Mallánácuttá Rahjámpett Fort Kannákal Turret Daime Fort	482 497 482 489 490 488 491 485 483 492 493 495 494 485 506 498 500
KHARKI h.s. Nándgaon Málegaon Pilkápar Garmsur	374 374 376 375	KURLA h.s. Málegaon Mallekuhí Golágaon Ratnigiri Baurúl	398 396 394 393 393	LOHANGI h.s. Bhilsá Temple Ahmadpur, II Bhári Gárgája, I	90 84 84 85
KOPDI, XXV Bara Kini Hill Pagoda Pilkher, XXIV Suklí Fort Loni Injalá Hill Pagoda Ikjhera, XXIII Bám, XXVI Ambhá Hill Pagoda Sákrá Hill Mark Sákrí, XXVII	201 34 194 195 198 34 35 214 207 36	LADI, V Bhímbat, VIII Hardal Hill Mark Samasgarh, VI Bhopál Palace Mandábhár Gidgarh, IV Sembardá Hill Mark Marmango Hill Mark Ander, III Dalthoban Ránpur, VII	7 106 8 101 99 5 95 98 5 108 6	LONI h.s. Kopdi, XXV Pilkher, XXIV Ikjhera, XXIII Ner Fort Injalá Hill Pagoda	195 195 196 197 199
KVA h.s. Ahmadpur, II Bhaorasa, (V) Honársí Fort Púper Nateran Fort	68 67 72 67 77	LAK s. Sákrí, XXVII Sákrá Fort	210 212	MAHUR, XXVIII Sákrí, XXIX Sákrí, XXVII	88 37

Name of station with azimuths of surrounding points.	No. of Triangle ranging distance	Name of station with azimuths of surrounding points.	No. of Triangle ranging distance	Name of station with azimuths of surrounding points.	No. of Triangle ranging distance
MAHUR, XXVIII Bará Kíni Hill Pagoda Lak Sákrá Hill Mark Shivni Hill Mark Shivni Hill Pagoda Badgaon Fort Arni Bori Fort Terorá Fort Rám, XXVI Bítargaon, XXX	150 31 40 154 21 27 154 31 57 167 4 26 167 53 23 181 0 39 183 16 21 183 51 50 186 54 21 188 39 30 86 356 45 49 88	MALLANAGUTTA s. Daimé Fort Kannákal Turret Lingampáli Saiyid Yádullá Hill Wutnúr Fort Wajápáli Fort Mallúpett Fort Kalláral Turret Nagar Fort Múnpáli Tirmelpáli: Great Bastion Donákal Fort Gadkol Uplaye Fort Rámáreddípett Fort Reddipett Fort Rangampett Fort Kámáreddípett Idgah	49 4 29 54 48 48 87 51 31 112 45 50 125 21 1 131 55 38 132 43 30 143 2 13 150 48 8 172 37 44 194 57 38 202 30 0 230 6 39 231 40 34 252 7 33 256 54 20 261 33 2 325 4 27	MORPANT, IX Jámgarh Hill Mark Bordhá Narwarárh, XI Nílgarh No. 1 Bhímbat, VIII Hoshangabad Kock Hoshangabad Kuará Ránipur, VII Katgaon Tek, X Dhába Deo, XII	27 42 36 41 56 15 46 5 11 46 93 18 39 143 8 31 40 147 24 46 150 50 47 184 21 27 197 30 5 73 220 37 7 264 52 48 10 357 6 42 72
MAINUR h.s. Júkal Fort Júkal Idgah Baktápur, XXXVIII Madnúr Fort Shakargáh, Fort Shiválingápa, XXXVI Potangal Fort Sultánpett Tower Burgápáli, XXXIX	22 4 10 25 24 50 110 29 58 141 21 49 154 0 43 169 54 14 229 26 44 276 26 7 346 7 13	MALLEKULI s. Málegaon Ratnigiri Baurúl Kurá	38 40 47 226 43 24 271 34 11 322 27 21	MUNPALI h.s. Daggi Hill Fort Dombardángatt Tree Bichpáli Pagoda Saiyid Yádullá Hill Yemsha, XXXV Banauli Hill Tomb Nal Ishwar Pagoda Aulúr Fort Kudápur Kustapuram Pagoda Komanpáli Fort Sonápett Fort Aurnúr Pillar Báikondá Peak Chaipur Turret Yairgatiá Polliam Pagoda Murthaud Fort Ránbudrá Hill Pagoda Govindpett Bastion Yailpur Turret Ramanapett Motiá Fort Nadákhudá Turret Bimgal Mosque Jákrampáli Pagoda Gadkol Mallánágttá	5 43 34 11 51 9 13 13 54 40 58 25 117 3 21 121 41 23 136 48 37 149 22 4 160 38 41 187 26 57 195 49 58 205 45 20 206 8 4 213 53 5 227 35 32 230 59 14 234 15 59 247 46 6 247 51 34 248 8 34 257 55 41 262 44 10 266 9 11 268 42 45 278 53 17 295 40 49 315 6 53 352 36 54
MALGAON h.s. Wirúr, XXI Ner, XVIII Kharkí Nándgaon Náchangaon	37 47 3 100 34 3 232 39 53 288 43 3 353 33 28	MALLIGA h.s. Karámungi Tomb Dámargáda, XLII Dádála, XLIV Pámpád Turret Shilápáli, XLVII	172 57 29 199 0 41 258 59 7 262 26 51 333 11 0	MUNPALI h.s. Daggi Hill Fort Dombardángatt Tree Bichpáli Pagoda Saiyid Yádullá Hill Yemsha, XXXV Banauli Hill Tomb Nal Ishwar Pagoda Aulúr Fort Kudápur Kustapuram Pagoda Komanpáli Fort Sonápett Fort Aurnúr Pillar Báikondá Peak Chaipur Turret Yairgatiá Polliam Pagoda Murthaud Fort Ránbudrá Hill Pagoda Govindpett Bastion Yailpur Turret Ramanapett Motiá Fort Nadákhudá Turret Bimgal Mosque Jákrampáli Pagoda Gadkol Mallánágttá	5 43 34 11 51 9 13 13 54 40 58 25 117 3 21 121 41 23 136 48 37 149 22 4 160 38 41 187 26 57 195 49 58 205 45 20 206 8 4 213 53 5 227 35 32 230 59 14 234 15 59 247 46 6 247 51 34 248 8 34 257 55 41 262 44 10 266 9 11 268 42 45 278 53 17 295 40 49 315 6 53 352 36 54
MALGAON s. Mallekulí Baurúl Kurá	218 39 52 260 24 38 291 26 48	MANGANAL, XL Baktápur, XXXVIII Chini Málegaon Temple Burgápáli, XXXIX Dámargáda, XLII Barágaon Fort Bider base-line, W, End, XLIII Bider	216 23 36 64 220 14 35 261 10 6 30 301 55 0 28 304 43 53 333 4 53 63 334 44 18	MUNPALI h.s. Daggi Hill Fort Dombardángatt Tree Bichpáli Pagoda Saiyid Yádullá Hill Yemsha, XXXV Banauli Hill Tomb Nal Ishwar Pagoda Aulúr Fort Kudápur Kustapuram Pagoda Komanpáli Fort Sonápett Fort Aurnúr Pillar Báikondá Peak Chaipur Turret Yairgatiá Polliam Pagoda Murthaud Fort Ránbudrá Hill Pagoda Govindpett Bastion Yailpur Turret Ramanapett Motiá Fort Nadákhudá Turret Bimgal Mosque Jákrampáli Pagoda Gadkol Mallánágttá	5 43 34 11 51 9 13 13 54 40 58 25 117 3 21 121 41 23 136 48 37 149 22 4 160 38 41 187 26 57 195 49 58 205 45 20 206 8 4 213 53 5 227 35 32 230 59 14 234 15 59 247 46 6 247 51 34 248 8 34 257 55 41 262 44 10 266 9 11 268 42 45 278 53 17 295 40 49 315 6 53 352 36 54
MALGI, XLVI Bider Minaret Bider base-line, W, End, XLIII Fatehpur Mosque Bápur, Mosque Sikurti Dámargáda, XLII Chikurti Math Dúdála, XLIV Shilápáli, XLVII	111 39 20 131 38 51 92 152 18 46 173 0 27 181 9 10 199 1 33 44 216 17 59 258 48 34 11 333 7 2 11	MANUABHAR, h.s. Islámnagar House Gidgarh, IV Ládi, V Hardal Hill Mark Bhopál Palace Bhímbat, VIII	213 57 28 238 45 5 293 18 11 301 48 12 313 57 13 332 9 0	MUNPALI h.s. Daggi Hill Fort Dombardángatt Tree Bichpáli Pagoda Saiyid Yádullá Hill Yemsha, XXXV Banauli Hill Tomb Nal Ishwar Pagoda Aulúr Fort Kudápur Kustapuram Pagoda Komanpáli Fort Sonápett Fort Aurnúr Pillar Báikondá Peak Chaipur Turret Yairgatiá Polliam Pagoda Murthaud Fort Ránbudrá Hill Pagoda Govindpett Bastion Yailpur Turret Ramanapett Motiá Fort Nadákhudá Turret Bimgal Mosque Jákrampáli Pagoda Gadkol Mallánágttá	5 43 34 11 51 9 13 13 54 40 58 25 117 3 21 121 41 23 136 48 37 149 22 4 160 38 41 187 26 57 195 49 58 205 45 20 206 8 4 213 53 5 227 35 32 230 59 14 234 15 59 247 46 6 247 51 34 248 8 34 257 55 41 262 44 10 266 9 11 268 42 45 278 53 17 295 40 49 315 6 53 352 36 54
MALKOTA, s. Somtána, XXXIV Júni	262 21 45 296 54 42	MORPANT, IX Bhorgarh Hill Mark	16 20 32	MUNPALI h.s. Daggi Hill Fort Dombardángatt Tree Bichpáli Pagoda Saiyid Yádullá Hill Yemsha, XXXV Banauli Hill Tomb Nal Ishwar Pagoda Aulúr Fort Kudápur Kustapuram Pagoda Komanpáli Fort Sonápett Fort Aurnúr Pillar Báikondá Peak Chaipur Turret Yairgatiá Polliam Pagoda Murthaud Fort Ránbudrá Hill Pagoda Govindpett Bastion Yailpur Turret Ramanapett Motiá Fort Nadákhudá Turret Bimgal Mosque Jákrampáli Pagoda Gadkol Mallánágttá	5 43 34 11 51 9 13 13 54 40 58 25 117 3 21 121 41 23 136 48 37 149 22 4 160 38 41 187 26 57 195 49 58 205 45 20 206 8 4 213 53 5 227 35 32 230 59 14 234 15 59 247 46 6 247 51 34 248 8 34 257 55 41 262 44 10 266 9 11 268 42 45 278 53 17 295 40 49 315 6 53 352 36 54
MALLANAGUTTA s. Burgidá	39 14 44	MORPANT, IX Bhorgarh Hill Mark	16 20 32	MUNPALI h.s. Daggi Hill Fort Dombardángatt Tree Bichpáli Pagoda Saiyid Yádullá Hill Yemsha, XXXV Banauli Hill Tomb Nal Ishwar Pagoda Aulúr Fort Kudápur Kustapuram Pagoda Komanpáli Fort Sonápett Fort Aurnúr Pillar Báikondá Peak Chaipur Turret Yairgatiá Polliam Pagoda Murthaud Fort Ránbudrá Hill Pagoda Govindpett Bastion Yailpur Turret Ramanapett Motiá Fort Nadákhudá Turret Bimgal Mosque Jákrampáli Pagoda Gadkol Mallánágttá	5 43 34 11 51 9 13 13 54 40 58 25 117 3 21 121 41 23 136 48 37 149 22 4 160 38 41 187 26 57 195 49 58 205 45 20 206 8 4 213 53 5 227 35 32 230 59 14 234 15 59 247 46 6 247 51 34 248 8 34 257 55 41 262 44 10 266 9 11 268 42 45 278 53 17 295 40 49 315 6 53 352 36 54

Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance
NACHANGAON h.s.		NILGARH, XV		PUPER h.s.	
Nándgaon h.s. 189 15 12	369	Alampur, XIII 166 19 20.67	21	Gadlákákpur Hill Pagoda 3 43 31	80
Garmsur " 219 22 37	370	Narwargarh, XI 173 56 3.45	17	Nateran Fort 14 39 40	77
Esambá " 284 6 40	371	Dhába Deo, XII 216 58 0.09	17	Ahmadpur, II 22 42 48	62
		Jágdhar, XIV 257 54 48.26	18	Sirsi Hill Mark 28 2 6	79
		Jillar h.s. 286 8 53	158	Ládpur Hill Mark 59 7 25	76
NANDGAON h.s.		Chaurápatar " 309 57 0	156	Bardhá h.s. 66 42 34	74
Náchangaon h.s. 9 16 27	869	Sálbaldi, XVI 321 4 44.54	22	Kúa " 124 29 35	67
Málegaon " 108 45 12	869			Kámkhera, (IV) " 133 23 53	62
Kharkí " 210 14 3	374			Honársi Fort s. 187 2 6	71
Garmsur " 282 18 39	370			Bhaorása, (V) 218 15 12	63
		NILGARH No. 1 s.		Belai Hill Mark 275 30 2	66
		Guradíá s. 158 59 55	127	Gárgája, I 310 4 28	74
		Hoshangabad Rock " 172 14 54	125	Bhári s. 353 37 22	69
		Hoshangabad " 174 46 2	123		
NARSAPUR h.s.		Ránipur, VII 209 36 35	121		
Burgápáli, XXXIX 69 38 0	290	Tek, X 267 59 43	122	RAMA s.	
Tadkol Fortified Hill 88 22 38	331	Morpáni, IX 273 15 40	121	Anjangaon h.s. 328 20 39	175
Bichkundá h.s. 96 40 4	317	Bordhá s. 353 59 26	134	Talegaon s. 355 26 38	175
Bánswádí Bastion 101 47 8	328				
Bánswádí Fort 106 54 24	329				
Baktápur, XXXVIII 110 4 58	289				
Boreliam Hill Pagoda 112 17 15	327	NILGARH No. 2 s.			
Birkúr Palace 123 48 13	314	Dhár, XVII 15 14 56	154	RAMANAPETT h.s.	
Dasepett Fort 126 13 25	325	Jágdhar, XIV 259 37 14	155	Bíngal Mosque 4 37 51	478
Boden s. 168 5 28	291	Nilgarh, XV 325 6 21	154	Motía Fort 69 45 11	471
Yanágápáli, XXXVII 185 34 47	289			Nadáakúdá Turret 74 52 48	476
Konápuram Stone Fort 210 23 31	326			Jakrampáli Pagoda 75 43 14	473
Gaurárám Fort 254 36 38	330			Múnpáli h.s. 82 48 15	429
		NIMBA s.		Thorlákondá Turret 86 27 48	469
		Badgaon, XXII 6 39 5	179	Govindpett Bastion 93 57 45	467
		Damúri Fort 149 44 43	181	Yailpur Turret 97 8 44	470
NARWARGARH, XI		Talegaon s. 180 14 51	178	Ramanapett Fort 106 57 55	466
Alampur, XIII 7 33 31.86	19	Amráoti " 262 42 49	187	Chaipur Turret 114 12 16	463
Jhupal Hill Mark 23 5 44	144	Anjangaon h.s. 292 45 19	178	Bálkondá Drug 134 27 37	455
Bhimbat, VIII 181 40 26.53	11			Bálkondá Peak 136 8 43	456
Morpáni, IX 225 58 28.93	11			Ratnápuram Fort 146 23 26	451
Tek, X 239 10 46.72	15	PILKAPAR h.s.		Polliam Pagoda 170 59 10	458
Bámandeopahár Hill Mark 277 46 8	136	Bazárgaon h.s. 2 11 0	879	Yaírgatlá h.s. 187 51 29	430
Dhába Deo, XII 295 40 23.37	12	Garmsur Revenue Survey s. 19 27 40	378	Murthaud Fort 188 7 38	461
Nílgarh, XV 353 54 51.62	17	Garmsur h.s. 24 54 56	376	Mallápuram Pagoda 225 13 48	454
		Kharkí " 68 17 50	376	Gadkól " 358 55 41	429
		Láwá " 312 46 40	377		
NER, XVIII				RAMATTE h.s.	
Bádáli, XX 27 42 5.87	28			Mungíal h.s. 39 28 0	407
Ashti, XIX 70 9 0.89	26			Kauitá " 192 51 55	406
Dhár, XVII 132 6 20.76	25			Temburní Turret 214 49 27	408
Sálbaldi, XVI 179 45 24.16	25			Shiválingápa, XXXVI 264 49 33	406
Málegaon h.s. 280 26 15	366				
Wirúr, XXI 338 11 26.76	31				
		PILKHER, XXIV		RANIPUR, VII	
NILGARH, XV		Káranja Fort 92 52 30	190	Katgaon h.s. 8 42 2	114
Dhár, XVII 16 43 11.99	23	Umbaldá Fort 94 10 17	193	Morpáni, IX 17 33 58.14	10
Kamlá Hill Mark 31 37 25	161	Badgaon, XXII 177 59 49.86	33	Nílgarh No. 1 s. 29.43 26	121
Nílgarh No. 2 s. 145 6 29	154	Donad s. 181 13 43	188		
		Manbha Building 199 52 36	192		
		Anjangaon h.s. 202 25 43	172		
		Loni " 255 20 50	195		
		Ikjhera, XXIII 267 56 29.99	83		
		Suklí Fort 294 54 33	194		
		Kopdi, XXV 338 17 33.29	34		

AZIMUTHS OF STATIONS, AND INTERSECTED POINTS.

GREAT ARC MERIDIONAL SERIES—SECTION 18° TO 24°.

Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance
RANIPUR, VII Hoshangabad Rock	125	SALBALDI, XVI	22	SHIVNI, XXXII	42
Hoshangabad	123	Nilegarh, XV	22	Bhessa, XXXIII	254
Kuará	113	Jágdhar, XIV	25	Chichánd West Spire	250
Bhimbat, VIII	7	Ner, XVIII		Pedápará Hill Mark	248
Ládi, V	6			Sirpáli Hill Mark	41
Kattáo Hill Mark	104	SAMASGARH, VI	8	Terbán, XXXI	80
Andar, III	6	Gidgarh, IV	8	Kalári Fort	95
Dalthoban	109	Ládi, V	8	Jeróná Fort	97
Bári Fort	118	Bhimbat Tree	110	Bisí Fort	97
Súbahpur Palace	13	Bhimbat, VIII	9	Soná Fort	98
Tek, X				Garápúr Fort	103
Barkach	116			Adgaon	104
				h.s.	108
RATNIGIRI h.s.	393	SHILAPALI, XLVII	351	Chatári Pettah	108
Kurlá	395	Bider	60	Dánkí Hill Pagoda	126
Golágon	397	Malgi, XLVI	61	Bitargaon, XXX	141
Mallekuli	417	Malligá	346		141
Lowá Building	418	Dámargáda, XLIII	61		19
Shaudí Turret	414	Pámpad Turret	356		49
Nander Tomb	400	Dúcála, XLIV	60		12
Yiledgaon Temple	388				11
Juni	414	SHIVALINGAPA, XXXVI	305		52
Chambergao	414	Daiglúr Tomb	47		40
Sirádon	388	Baktápúr, XXXVIII	296		6
Baurúl	389	Bett Mugar Fort	405		25
		Mungial	406		25
SAKRI, XXVII	38	Rámatte	384		26
Súkli, XXIX	200	Kautá	285		12
Bará Kíni Hill Pagoda	36	Gaddagá Turret	284		12
Kopdi, XXV	212	Manjram Turret	386		11
Sakrá Fort	219	Sirádon	391		11
Digras	206	Chambergao	266		14
Sakrá Hill Mark	213	Somtána, XXXIV	269		404
Ambá Hill Pagoda	215	Juni	264		386
Amblá Fort	218	Ráhir Pagoda	264		387
Saungá Fort	217	Jarákotá Fort	266		
Arambí Fort	204	Múdhal Turret	283		
Mahágaon Fort	208	Itolí Hill Pagoda	286		
Shivní Hill Mark	36	Kurbur Saváli Hill Pagoda	45		
Bám, XXVI	210	Kaisar Alí's Tomb	419		
Lak	220	Yemsha, XXXV	302		
Chikni Fort	221	Sajyid Yádullá Hill	311		
Arni	37	Yanigápalí, XXXVII	318		
Máhúr, XXXVIII		Selgaon Fort	319		
		Potangal Fort	344		
		Sultánpett Tower	345		
		Adampur	349		
		Mainúr	352		
SALBALDI, XVI	27	Tupselgaon Fortress	354		
Ashtú, XIX	170	Madrúr Fort	354		
Gawilgurb Mosque	23	Shakargáh Fort	354		
Dhár, XVII			44		
			44		
			43		
			251		
			253		
			43		
			44		
			261		
			45		
			258		
			43		
			253		
			251		
			43		
			44		
			261		
			45		
			258		
			43		
			253		
			251		
			43		
			44		
			261		

Name of station with azimuths of surrounding points	° ' "	No. of triangle giving distance	Name of station with azimuths of surrounding points	° ' "	No. of triangle giving distance	Name of station with azimuths of surrounding points	° ' "	No. of triangle giving distance
SUKLI, XXIX Umarkhed Hill Pagoda Umarkhed Idgah Sákri, XXXVII Máhúr, XXVIII Bitargaon, XXX	5 35 22 7 45 19 180 27 50 31 237 37 58 98 295 9 19 59	226 227 88 88 89	TERBAN, XXXI Umarkhed Hill Pagoda Súkti, XXIX Chotá Walki Pagoda Utaigaon Fort Daggútar Hill Mark Bámangaon Hill Pagoda Dánki Hill Pagoda Bámangaon Building Jaggúdar Hill Mark Bitargaon, XXX Shivni, XXXII Bhesa, XXXIII	181 44 45 182 31 22 63 183 1 50 183 24 58 196 32 6 206 31 9 207 48 40 208 31 51 212 16 35 222 24 23 78 259 59 45 37 303 16 54 22	225 40 288 286 223 232 229 231 224 40 41 42	YARGATIA h.s. Kudápur Ratnápuram Fort Nallúr Fort Gaddichendá Drug Bhesa Dargah Sonágadd Rock Nirmal Bastion Mallápuram Pagoda Rámbudrá Hill Pagoda	82 5 33 99 35 28 104 24 15 107 0 53 112 38 0 135 34 2 149 41 20 251 9 14 298 10 17	424 450 452 444 431 449 448 454 460
TAKALKHERA BASE, N. END s. Ashti, XIX Thugaon Dahegaon Yáholi Jalká Hill Mark	13 31 35 s. 56 31 19 " 120 28 23 " 288 36 0 308 21 10	358 359 360 358 365	TEUGAON s. Nirnúl Fort Sholápur Fort Shágarh Fort Dahegaon Taktalkherá Base, N. End Ashti, XIX	28 37 53 47 41 52 131 12 2 s. 200 20 29 " 236 29 39 318 30 38	864 363 361 360 359 359	YANAGAPALI, XXXVII Narsápur Báchápáli, XLI Kistápuram Palace Tadkol Fortified Hill Boreliam Hill Pagoda Bánswádi Bastion Badá Kodapgal Turret Burgápáli, XXXIX Bánswádi Fort Kaulás Fort Dasepett Fort Júkal Idgah Baktápur, XXXVIII Birkúr Palace Daiglúr Tomb Shiválingápa, XXXVI Kotgir Idgah Radrúr Fort Kaldurki Fort Yemsha, XXXV Gauráram Fort Konápuram Stone Fort	h.s. 5 34 56 15 7 52 17 26 30 14 46 50 24 51 0 28 51 10 36 51 55 40 56 41 15 90 59 43 27 65 9 35 68 38 38 76 39 3 98 47 20 51 99 4 22 107 2 48 132 5 30 03 134 17 0 151 56 24 160 20 47 182 4 47 61 325 36 41 331 16 31	289 50 335 331 327 328 333 49 329 332 325 324 47 315 304 46 801 298 288 46 330 326
TALAGAON s. Nimbá Badgaon, XXII Bhátkulí Fort Damúri Fort Gawilgurrá Range, Peak No. 2 Rámtí Ashti Fort Amráoti Anjangaon Attorná Building	s. 0 14 51 4 48 36 14 35 11 82 45 24 167 2 43 s. 175 26 51 191 17 42 300 29 21 h.s. 312 34 0 324 0 32	178 174 184 180 171 175 176 186 174 182	TIRUPURAM s. Dúdála, XLIV Sankrámpett Fort Nizámpett Fort Báchápáli, XLI Dánampáli Tower Músápett Bastion	19 16 37 39 27 23 133 41 7 160 25 17 292 28 29 301 28 46	340 342 341 340 343	YEMSHA, XXXV Yanághápáli, XXXVII Rájúli Fort Radrúr Fort Koséli Fort Boden Belúli Fort Nílí Pagoda Kaldurki Fort Baktápur, XXXVIII Naiagaon Fort Kandákurtí Belúr Fort Sangam Pagoda Shiválingápa, XXXVI Kondilwádi Fort	2 5 6 07 13 1 33 18 27 45 22 46 7 22 53 57 24 13 11 40 5 58 45 30 5 45 49 31 17 47 51 49 59 38 26 67 49 22 68 55 45 73 1 49 64 73 59 59	46 282 298 275 292 279 281 287 48 274 281 276 277 45 280
TEK, X Dhába Deo, XII Narwargah, XI Morpáni, IX Nílgarh No. 1 Bhimbát, VIII Katgaon Babai Flag Kuárá Barkach Ráupur, VII Súbanpur Palace	23 4 10 48 59 22 24 46 84 57 44 80 s. 88 7 41 125 22 21 71 h.s. 133 3 19 138 49 3 s. 157 10 58 " 171 51 45 174 35 26 18 208 51 28	16 15 13 122 14 115 120 112 117 18 119	WIRUB, XXI Ikjhera, XXIII Bádáli, XX Ner, XVIII Málegaon Náchangaon	14 9 16 53 107 47 35 98 158 14 29 05 h.s. 217 42 17 " 292 12 19	32 31 31 366 367	YAHOLI s. Bádáli, XX Ashti, XIX Taktalkherá Base, N. End	13 23 17 79 35 28 s. 108 40 15	857 357 358
TERBAN, XXXI Bokar Hill Mark Nontána, XXXIV Umri Fort Patrad Fort Kanjerá Pettah Kolgaon Fort Dongargaon Hill Pagoda Adgaon Umarkhed Idgah	5 10 17 6 52 20 20 157 9 2 157 21 35 163 46 18 165 54 50 165 59 36 171 37 35 180 56 57	252 48 241 239 240 237 285 233 228	YARGATIA h.s. Gadkol Murthaud Fort Ramanapett Múnipáit	h.s. 2 31 14 " 7 41 41 " 7 51 58 " 51 3 48	426 462 480 424			

Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance	Name of station with azimuths of surrounding points	No. of triangle giving distance
YEMSHA, XXXV		YEMSHA, XXXV		YEMSHA, XXXV	
Pipalgaon Fort 83 56 3	273	Múdhál Turret 152 19 10	259	Nal Ishwar Pagoda 238 50 7	438
Lagaon Patodá Bastion 87 21 31	272	Itolí Hill Pagoda 166 6 26	264	Tungáná Barmá Ishwar 246 41 43	436
Gujári Turret 92 26 31	270	Bhesa Dargah 179 52 13	432	Banaulí Barmá Ishwar 257 17 21	435
Ráhir Pagoda 96 58 30	266	Bhesa, XXXIII 179 53 16.32	44	Kudánpur h.s. 266 25 46	421
Jarákotá Fort 98 50 16	268	Yárbid Tree 187 39 19	255	Banaulí Hill Tomb 275 38 19	433
Bálapur Fort 104 49 56	271	Mahálingam Pagoda 221 30 42	440	Múnpáli „ 296 58 11	422
Júni h.s. 109 39 7	256	Gaddichendá Drug 228 7 23	448	Nawápett Fort 337 5 2	441
Nágtánná Hill Pagoda 113 5 43	263	Umaidá Pagoda 234 13 16	439	Saiyid Yádullá Hill 352 27 58	420
Somtána, XXXIV 126 19 53.89	44	Nirmal Bastion 237 15 32	447		

November 1876.

J. HERSCHEL.

GREAT ARC MERIDIONAL SERIES—SECTION 18° TO 24°.

CO-ORDINATES AND DESCRIPTIONS OF ALL STATIONS AND POINTS.

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

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

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Adampur h.s. (Hyderabad, Deccan) On a hill to N. of a small stream which winds round the west and south sides of it and falls into the Mannada an affluent of the Manjerá river. The hill is distant about a mile to the N.N.E. of Golágaon village, and as much to the N.W. of Savali village.</p> <p style="text-align: center;">o ' "</p> <p>λ 18 39 59'18 L 77 39 45'37 No. 298</p>	<p>Ahmadpur, II. (Vide page 4—A.)</p> <p style="text-align: center;">o ' "</p> <p>λ 23 36 20'88 L 77 43 15'44 H 1713 h 5 No. 2</p>	<p>Alangaon Fort, (Amráoti) S.W. angle.</p> <p style="text-align: center;">o ' "</p> <p>λ 20 56 37'3 L 77 40 42'4 No. 188</p>
<p>Adampur Hill Tree. (Hyderabad, Deccan) About 300 feet S.W. of the hill station of that name.</p> <p>λ 18 40 2 L 77 39 47</p>	<p>Alamparba Peak, (Hyderabad, Deccan) Tree. The peak is distant 2 miles E. by N. of Bomandipali village, and 2½ miles S.W. by S. of Jalápur fort.</p> <p>λ 18 29 1 L 77 59 10</p>	<p>Amblá Fort, (Wán) S.E. Bastion.</p> <p>λ 20 10 14'8 L 77 50 18'2 No. 215</p>
<p>Adgaon h.s. (Hyderabad, Deccan) About 1½ miles S.S.W. of the town of that name, and the same distance E. of Dongargaon village.</p> <p>λ 19 28 47'12 L 77 41 33'51 Nos. 233, 234</p>	<p>Alampur, XIII. (Vide page 6—A.)</p> <p>λ 22 3 38'28 L 77 37 7'11 H 2488 h 3 No. 19</p>	<p>Amblá Hill Pagoda, (Wán) S.E. corner.</p> <p>λ 20 11 2'6 L 77 49 54'3 Nos. 218, 214</p>
		<p>Amráoti s. (Amráoti) On Kolhápur gate of fort, N. bastion.</p> <p>λ 20 55 59'45 L 77 46 52'64 Nos. 186, 187</p>

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Ander, III. (<i>Vide page 4—A.</i>)</p> <p>λ 23 24 22·87 L 77 56 55·92 H 1957 h 2 No. 8</p> <p>Anjangaon h.s. (<i>Amráoti</i>) On a hill distant about 3 miles to N. of village Anjangaon, and as much to E. of the town of Badnairá; the town of Amráoti lies about 5 miles to the N.N.W.</p> <p>λ 20 51 29·27 L 77 49 44·62 H 1560 Nos. 172, 178</p> <p>Arambí Fort, (<i>Wún</i>) S.E. angle.</p> <p>λ 20 9 10·7 L 77 52 32·6 No. 217</p> <p>Arni s. (<i>Wún</i>) On N.W. bastion of fort.</p> <p>λ 20 3 39·03 L 77 59 33·21 Nos. 221, 222</p> <p>Ashti, XIX. (<i>Vide page 7—A.</i>)</p> <p>λ 21 2 47·80 L 77 40 3·74 H 1090 h 14 Nos. 26, 27</p> <p>Ashti Fort, (<i>Amráoti</i>) Highest bastion, south side.</p> <p>λ 21 3 14·5 L 77 41 7·1 Nos. 176, 177</p> <p>Atner, W. Turret. (<i>Betúl</i>)</p> <p>λ 21 37 24·8 L 77 57 23·1 No. 160</p> <p>Attorná Building. (<i>Amráoti</i>) High building in village.</p> <p>λ 20 56 48 L 77 42 31 No. 182</p> <p>Aulúr Fort, (<i>Hyderabad, Deccan</i>) On height; S.W. angle.</p> <p>λ 18 48 16·3 L 78 14 13·7 No. 475</p>	<p>Aurmúr Pillar, (<i>Hyderabad, Deccan</i>) On hill; the smaller and northern of two pillars.</p> <p>λ 18 47 22·8 L 78 18 54·0 No. 465</p> <p>Auxiliary Station α, (<i>Hyderabad, Deccan</i>) Or Bider Fort, counterscarp of ditch. This is the only position available for the minor triangulation of the Bider base-line. The ditch of the fort has been excavated in the iron-stone rock, leaving a ridge 14 feet thick at the edge of the hill. The village of Mamankherí is N. 30° W., $\frac{1}{2}$ mile; Hamelápur N. 39° E., 1 mile; Mírganj N. 56° E., $\frac{1}{2}$ mile; Agrar N. 81° E., $\frac{1}{2}$ mile; Waldodí N. 118° E., $\frac{1}{2}$ mile.</p> <p>λ 17 55 29·76 L 77 34 21·94</p> <p>Auxiliary Station β, (<i>Hyderabad, Deccan</i>) Or Malkápur Hill. The village of Malkápur is situated between two isolated hills of trap formation, capped with iron-stone. There are fakírs' tombs on both these hills; one of these tombs offered no obstruction, but the other occupied the only available ground at top, and therefore the station has been placed on the northern face of the hill.</p> <p>λ 17 53 37·38 L 77 36 31·24</p> <p>Auxiliary Station γ, (<i>Hyderabad, Deccan</i>) Or Malená. This station is at the foot of the Malená hill, connected with that on which Malgi H.S. is fixed, and it is of the same geological character.</p> <p>λ 17 53 23·85 L 77 38 17·82</p> <p>Babai Flag. (<i>Hoshangabad</i>)</p> <p>λ 22 42 1·2 L 77 58 28·0 No. 120</p> <p>Báchápáli, XLI. (<i>Vide page 11—A.</i>)</p> <p>λ 18 9 35·30 L 77 55 19·38 H 1608 h 1 No. 50</p> <p>Badá Kodappal Turret, (<i>Hyderabad, Deccan</i>) N.E. angle.</p> <p>λ 18 17 18·3 L 77 48 1·2 No. 333</p>	<p>Bádáli, XX. (<i>Vide page 7—A.</i>)</p> <p>λ 20 54 23·23 L 77 50 47·46 H 1564 h 4 No. 28</p> <p>Badgaon, XXII. (<i>Vide page 7—A.</i>)</p> <p>λ 20 44 23·06 L 77 38 58·97 H 1128 h 13 No. 29</p> <p>Badgaon Fort, (<i>Wún</i>) S.E. angle.</p> <p>λ 20 14 43·5 L 77 59 10·8 No. 202</p> <p>Badnúr House No. 1, (<i>Betúl</i>) Commanding Officer's.</p> <p>λ 21 54 6 L 77 56 34</p> <p>Badnúr House No. 2, (<i>Betúl</i>) Magistrate's.</p> <p>λ 21 54 28 L 77 56 40</p> <p>Bagdhá h.s. (<i>Betúl</i>) About 1 mile E.N.E. of the ruined village of that name, and 2 miles N.N.E. of Battáná. The station is marked in the usual manner.</p> <p>λ 21 54 10·13 L 78 4 12·32 No. 146</p> <p>Bághdeo h.s. (<i>Betúl</i>) On hill about a mile W. of Kotná village and N. of the Máchna river. The town of Sháhpur lies about $1\frac{1}{2}$ miles to the S.W. by S.</p> <p>λ 22 12 47·02 L 77 57 20·15 No. 138</p> <p>Bahram Sháhí Hill Mark. (<i>Betúl</i>) About 2½ miles to N.W. of Bahram, and $1\frac{1}{2}$ miles due E. of Muktágirí.</p> <p>λ 21 24 0·27 L 77 38 10·40 H 3200 Nos. 165, 166</p> <p>Baktápur, XXXVIII. (<i>Vide page 10—A.</i>)</p> <p>λ 18 29 38·00 L 77 37 24·81 H 1566 h 4 Nos. 47, 48</p>

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Bálapur Fort, (Hyderabad, Deccan) S.W. angle. λ 18 53 14.5 L 77 54 14.8 No. 271	Bánswádí Bastion. (Hyderabad, Deccan) Square bastion on highest hill in petta, at N. part of works. λ 18 22 44.9 L 77 55 24.7 No. 328	Baurúl Fort, (Hyderabad, Deccan) S.W. turret. λ 18 50 58.1 L 77 22 6.6 No. 410
Báلكondá Drug, (Hyderabad, Deccan) S.W. bastion. λ 18 52 19.0 L 78 22 12.8 No. 455	Bánswádí Fort. (Hyderabad, Deccan) S.E. angle of inner fort. λ 18 23 20.1 L 77 54 42.4 No. 329	Baurúl h.s. (Hyderabad, Deccan) 2 miles N.W. of village so called, and 2½ miles E. by N. of Chin-holí village on the Mannada river. λ 18 51 56.82 L 77 21 19.95 Nos. 389, 390
Báلكondá Peak. (Hyderabad, Deccan) Circular bastion on peak. λ 18 52 4.0 L 78 22 53.8 No. 456	Bápur Mosque. (Hyderabad, Deccan) About 1½ miles to S.S.W. of Karámungí, and S. of the Manjerá river. λ 18 2 1.4 L 77 37 43.4 No. 345	Bausar Hill Tree. (Hyderabad, Deccan) Near northern edge of town so called which is distant about a mile from the Godávári river. λ 18 52 50 L 77 59 50
Bám, XXVI. (<i>See page 8—A.</i>) λ 20 14 49.85 L 78 2 45.35 H 1328 h 5 No. 35	Barágaon Fort. (Hyderabad, Deccan) About 8 miles N.N.W. of Karámungí and close to the source of a stream which falls into the Manjerá between the villages of Kosá- núr and Konápur. λ 18 7 48.5 L 77 33 57.5 No. 336	Bazárgaon h.s. (Nágpur) Also a station of the Revenue Survey. Close to village of that name on main road from Amráoti to Nágpur. λ 21 8 58.66 L 78 48 18.73 Nos. 379, 380
Bámándeopahár Hill Mark. (Betúl) On ridge which forms the watershed between the Máchna river and the Suk nádi, and about 3½ miles nearly due west of the point where the road from Betúl to Hoshangabad strikes the former. λ 22 11 56.28 L 77 53 25.98 Nos. 136, 137	Bará Kíni Hill Pagoda. (Wán) About 1½ miles N.E. of Warí village, and the same distance nearly due W. of Kíni village. λ 20 17 57.2 L 77 41 50.0 Nos. 200, 201	Belai Hill Mark. (Gwalior Territories) On hill rising from the village so called and stretching away towards the N.W. λ 23 52 59.21 L 78 9 12.43 No. 66
Bámangaon Building. (Básim) High square building in village. λ 19 30 33.0 L 77 50 47.3 No. 231	Bardhá h.s. (Gwalior Territories) About 1½ miles N.E. by E. of the village so called and situated near the southern end of a long isolated hill which trends north and south. λ 23 50 49.36 L 77 42 4.97 Nos. 73, 74	Belúli Fort, (Hyderabad, Deccan) S.W. angle. λ 18 47 48.8 L 77 59 15.5 No. 279
Bámangaon Hill Pagoda, (Wán) W. of village. λ 19 30 25.2 L 77 50 6.3 No. 232	Bárá Fort, (Gwalior Territories) W. turret of mahal. λ 23 2 21.9 L 78 7 23.4 No. 109	Belúr Fort, (Hyderabad, Deccan) Tree at S.W. angle. λ 18 49 11.6 L 77 54 59.1 No. 276
Banaulí Barmá Ishwar, (Hyderabad, Deccan) Pagoda; about 1 mile N. of Banaulí and near bend of river. λ 18 52 16.7 L 78 4 28.4 No. 435	Barkach s. (Hoshangabad) 300 feet E. of Barkach on the N. bank of the Nerbudda river. λ 22 48 55.59 L 78 6 18.98 Nos. 116, 117	Bett Mngur Fort. (Hyderabad, Deccan) Turret at S.E. angle of fort on height, with white parapet. λ 18 42 32.9 L 77 34 46.3 No. 296
Banaulí Hill Tomb. (Hyderabad, Deccan) Near town of that name about ½ mile S. of the Godávári. λ 18 51 13.6 L 78 4 19.2 Nos. 433, 434	Basodá Mausoleum. (Gwalior Territories) λ 23 51 3.8 L 77 58 18.5	Betúl Fort, (Betúl) S.W. angle. λ 21 51 13.1 L 77 58 15.0 No. 152

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Betúl House, (Betúl) Magistrate's.</p> <p>λ 21 51 55 L 77 57 37</p> <p>Bhaisdahí Flag. (Betúl).</p> <p>λ 21 38 43 L 77 40 30</p> <p>Bhaorása, (V). (Vide page 3—A.)</p> <p>λ 24 8 3'73 L 78 3 7'91 H 1387 h 11 No. 1</p> <p>Bhári s. (Gwalior Territories) At village of that name (also called Barári) situated on right bank of the Betwá river about ¼ mile N.E. of the point where the Sahodrá nadi joins it.</p> <p>λ 23 40 29'70 L 77 53 14'44 Nos. 69, 70</p> <p>Bhátkuli Fort, (Amráoti) N.E. angle.</p> <p>λ 20 54 16'6 L 77 38 52'1 Nos. 184, 185</p> <p>Bhesa, XXXIII. (Vide page 9—A.)</p> <p>λ 19 6 27'82 L 78 0 59'15 H 1553 h 4 No. 42</p> <p>Bhesa Dargah, (Hyderabad, Deccan) Centre; this shrine is a few feet N.W. of the principal station of the same name.</p> <p>λ 19 6 28'2 L 78 0 58'9 Nos. 431, 432</p> <p>Bhilsá Temple. (Gwalior Territories) Near westernmost edge of Bhilsá town.</p> <p>λ 23 31 35'0 L 77 50 38'8 No. 80</p> <p>Bhimbat, VIII. (Vide page 5—A.)</p> <p>λ 22 50 2'06 L 77 39 42'71 H 2120 h 4 Nos. 7, 9</p>	<p>Bhimbat Tree, (Bhopál) On rock.</p> <p>λ 22 56 12'8 L 77 39 11'8 Nos. 110, 111</p> <p>Bhírpur h.s. (Tonk)</p> <p>λ 24 5 32'84 L 77 59 5'25 See Synoptical Vol. of the Calcutta Longitudinal Series.</p> <p>Bhopál Palace, (Bhopál) Spire.</p> <p>λ 23 15 34'3 L 77 25 55'8 Nos. 101, 102</p> <p>Bhorgarh Hill Mark. (Betúl) On range which forms the watershed between the Máchna river and the Suk nadi. It is distant 3¼ miles N.W. by N. of Kátáwári village situated about ¼ mile S.E. of the junction of the Jhirpá nadi with the Máchna river.</p> <p>λ 22 11 33'26 L 77 50 30'23 H 2930 Nos. 140, 141</p> <p>Bichkundá Fort. (Hyderabad, Deccan) N.E. angle of inner fort.</p> <p>λ 18 23 57'7 L 77 45 0'2 No. 318</p> <p>Bichkundá h.s. (Hyderabad, Deccan) About ¼ mile S.W. of the fort so called, and about 3¼ miles N. by E. of Kaulás.</p> <p>λ 18 23 34'06 L 77 44 42'27 Nos. 316, 317</p> <p>Bichpáli Pagoda. (Hyderabad, Deccan) High turret on fortified hill.</p> <p>λ 18 35 9'6 L 78 14 54'8 No. 479</p> <p>Bider base-line, East End, XLV. (Vide page 12—A.)</p> <p>λ 17 53 33'04 L 77 39 27'36 H 1957 h 4 No. 53</p> <p>Bider base-line, West End, XLIII. (Vide page 11—A.)</p> <p>λ 17 57 34'52 L 77 33 38'31 H 1980 h 2 Nos. 54, 57</p>	<p>Bider Minaret, (Hyderabad, Deccan) Of Idgah.</p> <p>λ 17 54 50'6 L 77 34 21'1 H 2345 Nos. 353, 354</p> <p>Bider s. (Hyderabad, Deccan) About ¼ mile N. of the town of Bider.</p> <p>λ 17 55 10'01 L 77 34 13'20 Nos. 351, 352</p> <p>Bíngal Mosque, (Hyderabad, Deccan) On hill.</p> <p>λ 18 41 54'2 L 78 29 26'7 Nos. 477, 478</p> <p>Bírkúr Palace, (Hyderabad, Deccan) High white building.</p> <p>λ 18 27 46'8 L 77 50 25'0 Nos. 314, 315</p> <p>Bísí Fort, (Hyderabad, Deccan) S.W. angle.</p> <p>λ 19 23 12'0 L 78 0 43'0 No. 246</p> <p>Bítargaon, XXX. (Vide page 9—A.)</p> <p>λ 19 34 25'97 L 77 59 37'83 H 1949 h 6 No. 39</p> <p>Boden s. (Hyderabad, Deccan) On bastion, E. of southern gateway of fort.</p> <p>λ 18 39 32'74 L 77 55 42'17 Nos. 291, 292</p> <p>Bokar Hill Mark. (Hyderabad, Deccan) Or Abu Bakar Hill Mark.</p> <p>λ 19 12 57'79 L 77 42 52'55 Nos. 252, 253</p> <p>Bordhá s. (Betúl) At Bordhá village situated on the E. bank of the Súktawa nadi.</p> <p>λ 22 22 28'85 L 77 49 16'36 Nos. 134, 135</p>

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Boreliam Hill Pagoda, (Hyderabad, Deccan) Pointed. λ 18 23 16.6 L 77 56 7.3 No. 327	Chatárá Pettah, (Básim) N.E. angle. λ 19 28 1.1 L 77 50 37.6 No. 242	Chotá Walkí Pagoda. (Hyderabad, Deccan) White, pointed pagoda E. of village. λ 19 23 50.0 L 77 43 39.7 No. 238
Boreta Mark. (Betúl) ¼ mile S. of the Tapti river, and ¼ mile S. by W. from Pipria village, and the same distance W. by S. from Maliadhána village. λ 21 48 7 L 77 39 51	Chaurápatar h.s. (Betúl) Or Lálkherá: 4½ miles W. a little S. of Aner. λ 21 37 6.60 L 77 52 53.98 H 2610 Nos. 156, 157	Chúriá h.s. (Betúl) About 2½ miles N.N.W. of Chicholí on the road from Betúl to Harda. λ 22 2 45.75 L 77 42 23.30 No. 142
Bori Fort, (Wán) S.W. angle. λ 20 13 44.4 L 78 0 25.7 No. 203	Chicholí Hill Mark. (Betúl) λ 22 0 56.94 L 77 42 42.22 No. 143	Daggí Hill Fort, (Hyderabad, Deccan) Tree. λ 18 28 12.5 L 78 15 24.0 No. 486
Burgápáli, XXXIX. (Vide page 10—A.) λ 18 16 33.50 L 77 44 31.69 H 1738 h 4 No. 49	Chicholí Tiled Building. (Betúl) λ 22 0 52 L 77 42 44	Daggútar Hill Mark. (Básim) λ 19 39 33.88 L 77 50 13.33 No. 223
Burgidá h.s. (Hyderabad, Deccan) On the middle one of three flat-topped heights about 4 miles S.E. of Lingam- pett, and immediately S. of the hamlet of Burgidá. A platform 9 feet high, having a mark-stone at top and another at bottom, marks the station. λ 18 16 5.22 L 78 13 43.86 H 2223 No. 427	Chichúnd, West Spire. (Hyderabad, Deccan) λ 19 8 15.5 L 77 57 40.5 No. 254	Dahegaon s. (Ellichpur) On mound E. of the Patel's house; marked as usual with a stone having a circle and centre engraved. λ 21 10 27.59 L 77 38 45.24 No. 360
Butí Hill Tree. (Hyderabad, Deccan) About 4 miles N.E. of Kau- dáhar, and 4½ miles S.S.W. of Laut fort. λ 18 54 25 L 77 17 50	Chikní Fort, (Wán) N.W. angle. λ 20 4 43.5 L 77 56 10.3 No. 220	Daiglúr Tomb. (Hyderabad, Deccan) λ 18 32 50.3 L 77 37 40.8 Nos. 304, 305
Chaipur Turret. (Hyderabad, Deccan) Remarkable, high turret in village. λ 18 48 25.8 L 78 22 24.3 Nos. 463, 464	Chikurtí Math. (Hyderabad, Deccan) W. of village. λ 17 56 7.8 L 77 41 10.0 No. 355	Daime Fort, (Hyderabad, Deccan) Highest bastion. λ 18 19 21.9 L 78 15 10.6 Nos. 500, 501
Chambergaon h.s. (Hyderabad, Deccan) About 6 miles N.E. of Laut fort, and ½ mile E. by N. of Kanjal village. λ 19 1 49.56 L 77 24 22.33 Nos. 391, 392	Chilargí Fort Gate. (Hyderabad, Deccan) λ 17 59 36 L 77 39 58	Dalthoban h.s. (Bhopál) λ 23 1 29.14 L 78 5 46.08 No. 108
Chándur Building. (Betúl) About 1½ miles N.W. of Nílgarh Principal Station, and ½ mile S.W. of Menda. λ 21 46 31 L 77 40 41	Chiní Málegaon Temple. (Hyderabad, Deccan) On a height. λ 18 24 31.6 L 77 34 42.2 Nos. 320, 321	Dámargída, XLII. (Vide page 11—A.) λ 18 3 17.35 L 77 42 31.59 H 1946 h 7 Nos. 51, 56
	Chittálá Fort, (Hyderabad, Deccan) S.W. angle. λ 18 15 30 L 78 17 26	

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Dámargáda, N. Meridional Mark. (Hyderabad, Deccan) o i n λ 18 4 41'26 L 77 42 31'59 No. 338	Dhár, XVII. (Vide pages 6—A.) o i n λ 21 28 35'34 L 77 36 13'92 H 3660 h 5 Nos. 23, 24	Donglí Hill. (Hyderabad, Deccan) o i n λ 18 31 3 L 77 44 56
Dámargáda, S. Meridional Mark. (Hyderabad, Deccan) λ 18 2 7'52 L 77 42 31'59 No. 339	Dhár s. (Betúl) West of the Principal Station of that name. λ 21 28 25'81 L 77 35 34'87 Nos. 167, 168	Dúdála, XLIV. (Vide page 12—A.) λ 17 56 10'76 L 77 55 1'81 H 1926 h 3 Nos. 52, 59
Damúrí Fort, (Amráoti) N.E. angle. λ 20 59 18'0 L 77 37 46'9 Nos. 180, 181	Dhár Village. (Betúl) Flag. λ 21 28 16 L 77 35 59	Ellichpur s. (Betúl) On inner fort, S.W. angle, facing great gateway of Nawáb's palace. λ 21 15 16'60 L 77 33 12'41 No. 362
Dánampáli Tower, (Hyderabad, Deccan) Single. λ 18 2 30'6 L 77 59 45'0 No. 343	Digras s. (Wán) On S.E. bastion of fort. λ 20 6 6'31 L 77 45 28'99 No. 219	Esambhá h.s. (Wardha) About 1½ miles E.N.E. of Sonalgaon Powar village, and 2½ miles W.N.W. of G-ji village. The road from Náchangaon to Hinganghát passes about 1½ miles S. of the station. λ 20 38 2'22 L 78 45 14'03 H 929 No. 371
Dánkí Hill Pagoda. (Básim) λ 19 34 16'3 L 77 52 38'4 Nos. 229, 230	Dombardángatt Tree. (Hyderabad, Deccan) λ 18 24 1 L 78 12 42 No. 496	Fatehpur Mosque. (Hyderabad, Deccan) λ 17 59 1'5 L 77 35 37'8 Nos. 349, 350
Danura Hill Tree. (Hyderabad, Deccan) λ 19 1 9 L 77 43 21	Donad s. (Amráoti) About ¼ mile W. of village so called, and a mile N. of Taurkher; marked by an earthen platform carrying a stone in the centre of its upper surface which is placed in the normal of another stone imbedded in the ground. λ 20 32 56'36 L 77 39 41'03 H 1280 Nos. 188, 189	Gaddagá Turret, (Hyderabad, Deccan) White, highest in village. λ 18 48 40'0 L 77 29 58'8 No. 285
Dasepett Fort, (Hyderabad, Deccan) S.W. angle. λ 18 24 40'4 L 77 55 39'4 No. 325	Donákal Fort, (Hyderabad, Deccan) High round turret or bastion, near town. λ 18 28 56'6 L 78 22 18'7 Nos. 484, 485	Gaddíchendá Drug, (Hyderabad, Deccan) S.W. angle. λ 19 0 18'9 L 78 11 19'0 Nos. 443, 444
Derpání h.s. (Betúl) About 1 mile due E. of village so called, and the same distance W.N.W. of Chiklájori village. λ 21 30 33'64 L 77 36 17'31 Nos. 163, 164	Dongargaon Hill Pagoda, (Hyderabad, Deccan) Spire. λ 19 28 47'3 L 77 40 20'5 No. 235	Gadkol h.s. (Hyderabad, Deccan) On the S.W. extremity of an extensive range of mountains E. of Bimgal; Gadkol village is about 2 miles to the N.W., and Kundápuram the same distance to the S.W. The station is on the highest part of the mountain, on a low mound between two very deep pits, about 80 feet N.W. of a great tree; it is marked by a large stone having a circle engraved thereon. λ 18 31 19'73 L 78 30 0'45 H 2209 Nos. 425, 426
Derpání Village. (Betúl) λ 21 30 22 L 77 35 31	Dongargaon Hill Tree. (Hyderabad, Deccan) λ 19 12 26 L 77 30 58	
Dhába Deo, XII. (Vide page 6—A.) λ 22 5 19'80 L 77 57 31'25 H 2700 h 2 Nos. 12, 16		

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Gadlákákpur Hill Pagoda. (<i>Gwalior Territories</i>) About $\frac{1}{2}$ mile S. of Kátpur village, and the same distance W. of Gadlá village. λ 23 44 14.9 L 77 50 48.2 Nos. 80, 81	Gawilgurh Mosque. (<i>Ellichpur</i>) Centre of mosque in hill fort. λ 21 22 18.2 L 77 22 59.1 H 3510 Nos. 169, 170	Girar Mosque. (<i>Wardha</i>) On hill dedicated to Pír Shaikh Faríd, and a celebrated place of pilgrimage with the Muhammadana. " " " λ 20 39 31.7 L 79 8 49.7
Gandáhrí Bastion. (<i>Hyderabad, Deccan</i>) Square bastion at S.W. angle of fort. λ 18 23 30.1 L 78 9 29.8 No. 497	Gawilgurh Range, Peak No. 1. (<i>Ellichpur</i>) $2\frac{1}{2}$ miles S.W. of Girgúti village. The Gawilgurh is an outlying portion of the Great Sápura chain, and forms the southern watershed of the Tapi river from its source to the point where the Púrna joins it. λ 21 17 44 L 77 14 6	Golágaon s. (<i>Hyderabad, Deccan</i>) About $1\frac{1}{2}$ miles E. of village so called, and $2\frac{1}{2}$ miles N.W. of Kandáhar. λ 18 53 39.24 L 77 11 53.94 Nos. 394, 395
Ganganbed Pagoda. (<i>Hyderabad, Deccan</i>) λ 18 54 43.3 L 77 32 5.6 No. 402	Gawilgurh Range, Peak No. 2. (<i>Betúl</i>) Tree on bare top of remarkable hill about $2\frac{1}{2}$ miles W.N.W. of Muktagírí, and 2 miles E.S.E. of Banúr village. The peak is locally called Chakrá. λ 21 24 57 L 77 34 7 No. 171	Govindpett Bastion. (<i>Hyderabad, Deccan</i>) Centre of tiled building on circular stone bastion. λ 18 45 46.9 L 78 22 19.6 Nos. 467, 468
Gangárol Village. (<i>Hyderabad, Deccan</i>) Near foot of hill. λ 18 55 22 L 77 32 52	Gawilgurh Range, Peak No. 3. (<i>Betúl</i>) λ 21 35 23 L 77 49 35 H 2780	Gujárá Turret. (<i>Hyderabad, Deccan</i>) High turret on N. bank of river at E. and N. bend. λ 18 52 10.2 L 77 45 7.8 No. 270
Garápur Fort, (<i>Hyderabad, Deccan</i>) S.E. angle. λ 19 26 2.7 L 77 52 29.3 No. 243	Gawilgurh Range, Peak No. 4. (<i>Betúl</i>) λ 21 35 19 L 77 55 14 H 2650	Gurádía s. (<i>Hoshangabad</i>) About 1 mile N.W. of Gúaría (on the right bank of the Nerbudda river), and $\frac{1}{2}$ mile S.E. of Khápá village. λ 22 45 10.34 L 77 42 9.76 Nos. 127, 128
Gárgája, I. (<i>Vide page 3—A.</i>) λ 23 43 48.18 L 78 5 25.15 H 1709 h 6 No. 1	Gawilgurh Range, Peak No. 5. (<i>Betúl</i>) Also called Masod hill; it is distant about $1\frac{1}{2}$ miles to the S.W. by W. of Dongarpurá village, and $2\frac{1}{2}$ miles N.E. of Étává village. λ 21 34 14 L 78 9 11 H 3120	Haldá Fort, (<i>Hyderabad, Deccan</i>) N.W. angle. λ 18 53 21.1 L 77 25 9.0 No. 409
Garlá Tiled Building. (<i>Gwalior Territories</i>) λ 23 44 20 L 77 51 29	Gawilgurh Range, Peak No. 6. (<i>Betúl</i>) Also called Uttam-Ságar hill; it is distant $1\frac{1}{2}$ miles S.E. of Dongarpurá village, and $2\frac{1}{2}$ miles W. by S. of Karaspaní village. λ 21 33 56 L 78 11 57 No. 173	Hardal Hill Mark. (<i>Bhopál</i>) λ 23 6 38.78 L 77 42 19.51 Nos. 106, 107
Garmsur h.s. (<i>Wardha</i>) About 3 miles W.S.W. of the village of that name, and $2\frac{1}{2}$ miles S. by E. of Umbríheri village. λ 21 1 1.39 L 78 39 9.95 H 1976 No. 370	Gidgarh, IV. (<i>Vide page 4—A.</i>) λ 23 23 7.14 L 77 35 22.37 H 1886 h 5 No. 4	Hátídub Village. (<i>Hoshangabad</i>) About 6 miles N.W. by W. of Morpáni Principal Station. λ 22 32 12 L 77 50 24 H 2190
Garmsur Rev. Survey Station. (<i>Wardha</i>) About $2\frac{1}{2}$ miles E.S.E. of Garmsur h.s. λ 21 0 4.00 L 78 41 6.39 No. 378	Gaurárám Fort. (<i>Hyderabad, Deccan</i>) Tiled building in fort. λ 18 22 42.7 L 78 2 38.3 No. 330	Hingáni Hill Tree. (<i>Hyderabad, Deccan</i>) λ 18 43 5 L 77 44 47

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Hippargá Hill Platform. (Hyderabad, Deccan) λ 18 55 38.3 L 77 30 23.3 Nos. 403, 404	Injalá Hill Pagoda. (Wán) λ 20 28 41.4 L 77 54 24.8 Nos. 198, 199	Jarákotá Fort, (Hyderabad, Deccan) N.E. angle. λ 18 53 40.3 L 77 46 32.1 Nos. 268, 269
Honársí Fort s. (Tonk) λ 24 1 33.97 L 77 52 28.37 Nos. 71, 72	Islámnagar House, (Bhopál): Upper roomed; urn on arched roof. λ 23 21 22.5 L 77 27 35.3 No. 103	Jaulágarhí Palm Tree. (Hyderabad, Deccan) λ 18 21 36 L 77 52 41
Hoshangabad Fort, (Hoshangabad) Flag at S.W. angle. λ 22 45 42.3 L 77 45 5.0 No. 129	Itolí Hill Pagoda. (Hyderabad, Deccan) Small white pagoda on white rocks. λ 18 59 39.0 L 77 58 54.4 Nos. 264, 265	Jeroná Fort, (Hyderabad, Deccan) N.W. angle. λ 19 23 25.0 L 77 58 40.8 No. 245
Hoshangabad Idgah. (Hoshangabad) λ 22 45 16.5 L 77 45 3.3 No. 131	Jágdhar, XIV. (Vide page 6.—A.) λ 21 49 39.40 L 78 0 58.40 H 27.02 h 6 Nos. 18, 20	Jhawal Hill Mark. (Betúl) Nearly 1½ miles W. by S. of Jhawal eastern village, and about 1 mile S. by E. of Jhawal western village. λ 22 0 12.41 L 77 32 20.26 H 26.90 Nos. 144, 145
Hoshangabad Rock s. (Hoshangabad) Nearly 1½ miles S.E. from southern outskirts of the town of Hoshangabad. λ 22 43 54.22 L 77 46 23.02 Nos. 125, 126	Jaggúdar Hill Mark. (Básim) 8½ miles nearly due S. of Narlí village, and 4½ miles N. by W. of Manalí village. λ 19 37 50.14 L 77 56 51.93 No. 224	Jillar h.s. (Betúl) Nearly 1 mile S.W. by S. of Máchí village. λ 21 44 24.02 L 77 47 4.00 Nos. 158, 159
Hoshangabad s. (Hoshangabad) About 1½ miles towards the N.N.E. of Hoshangabad Rock s. λ 22 45 4.13 L 77 46 55.95 H 103.0 Nos. 123, 124	Jakrampáli Pagoda. (Hyderabad, Deccan) Northern of two pagodas to the S.E. of Múnpáli h.s. λ 18 42 44.8 L 78 19 14.8 Nos. 473, 474	Júkal Fort, (Hyderabad, Deccan) Gateway, east turret. λ 18 21 39.2 L 77 38 45.6 No. 322
Hoshangabad Temple. (Hoshangabad) λ 22 45 41.4 L 77 45 29.9 No. 130	Jalálpur Hill Tree. (Hyderabad, Deccan) λ 18 40 42 L 77 43 20	Júkal Idgah. (Hyderabad, Deccan) Centre urn of Idgah on hill. λ 18 21 19.5 L 77 38 7.3 Nos. 323, 324
Ikjhera, XXIII. (Vide page 7.—A.) λ 20 29 5.13 L 78 2 9.98 H 142.5 h 4 Nos. 30, 32	Jalká Hill Mark. (Amráoti) λ 20 57 57.99 L 77 56 18.13 No. 365	Júnápání h.s. (Akola) About 1½ miles E. of Tarná village, and 1 mile S.W. of Pukasur village. λ 20 55 16.61 L 79 9 31.76 H 131.1 No. 372
Indúr Drug, (Hyderabad, Deccan) Tree. λ 18 39 50 L 78 7 18	Jámgarh Hill Mark. (Betúl) 2½ miles W. by N. of Handípání village, and about the same distance S.E. by S. of Chilerí-púrá village. The head waters of one of the main branches of the Súktawa nadi take their rise not far from the hill. λ 22 16 0.65 L 77 48 30.23 H 285.0 Nos. 132, 133	Jání h.s. (Hyderabad, Deccan) About 1½ miles N.N.E. of the fort of that name, and 2½ miles S.S.E. of Tallágon fort. λ 18 58 20.34 L 77 40 56.48 Nos. 256, 257

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Kaisar Ali's Tomb. (Hyderabad, Deccan) Western tomb, south of fort. λ 18 46 45.7 L 77 42 8.5 No. 286	Kandáhar Mosque. (Hyderabad, Deccan) λ 18 52 2.3 L 77 14 27.6 No. 416	Katgaon h.s. (Hoshangabad) Or Makarwání, h.s. λ 22 36 28.20 L 78 2 29.91 Nos. 114, 115
Kalári Fort, (Hyderabad, Deccan) S.W. angle. λ 19 22 47.6 L 78 1 54.0 No. 247	Kandákurtí s. (Hyderabad, Deccan) On S.W. angle of fort. λ 18 48 42.47 L 77 55 56.80 Nos. 261, 262	Katol Flag. (Betúl) About a mile W. of road from Ellichpur to Betúl, and 1½ miles N.N.W. of Gudgaon. λ 21 38 12 L 77 42 41
Kalbáral Turret, (Hyderabad, Deccan) N.E. angle. λ 18 26 39.4 L 78 17 6.6 Nos. 487, 488	Kandarden Hill Bush. (Hyderabad, Deccan) λ 18 21 39 L 77 47 24	Kattáo Hill Mark. (Bhopál) Towards the northern edge of a hill, distant 1½ miles N. by W. of Kasiá village, and nearly 1½ miles N.E. of Moholí village. λ 23 9 20.32 L 77 51 47.35 H 2040 Nos. 104, 105
Kaldurki Fort, (Hyderabad, Deccan) Flag on N.E. angle. λ 18 44 19.0 L 77 53 18.4 Nos. 287, 288	Kanderá Hill Mark. (Betúl) λ 21 56 18.55 L 78 2 34.86 No. 149	Kauitá h.s. (Hyderabad, Deccan) On platform, nearly a mile E. a little N. of the village of that name, and ¼ mile S. a little W. of Dhanúr.á. λ 18 48 41.48 L 77 25 45.72 Nos. 384, 385
Kámáreddípett Idgah, (Hyderabad, Deccan) N. minaret. λ 18 19 18.3 L 78 22 41.0 No. 505	Kanjerá Pettah. (Hyderabad, Deccan) S.W. bastion of Pettah wall. λ 19 23 34.1 L 77 41 27.0 No. 240	Kaulás Fort. (Hyderabad, Deccan) Highest bastion of hill fort. λ 18 19 28.7 L 77 44 36.8 No. 332
Kámkhera, (IV). (Vide page 3—A.) λ 23 59 44.93 L 77 45 34.03 H 1780 h 10 No. 1	Kannákál Turret, (Hyderabad, Deccan) Round, at N.W. corner. λ 18 20 19.2 L 78 15 31.5 Nos. 498, 499	Keljhar h.s. (Wardha) Also a station of the Revenue Survey. About 2 miles S.S.E. of the large village of that name on the road from Wardha to Nágpur. λ 20 49 24.28 L 78 51 2.20 H 1132 Nos. 382, 383
Kámkhera Fort, (Gwalior Territories) N.W. angle. λ 23 35 11.4 L 77 40 37.4 No. 82	Kápsi Turret, (Hyderabad, Deccan) Highest, N.W. angle. λ 19 0 5.3 L 77 25 31.0 No. 412	Khapri Chor. (Betúl) About 1½ miles nearly due E. of Araumbar village, and the same distance S. by W. of Dhár village. λ 21 26 54 L 77 35 47
Kámkhera W. Mark. (Tonk) On S.E. edge of a flat-topped hill, and distant about a mile nearly due E. of Kenerá village. λ 23 58 41 L 77 43 51	Karámungí Tomb. (Hyderabad, Deccan) λ 18 2 1.4 L 77 37 43.3 No. 348	Kharkí h.s. (Ellichpur) About 4 miles S.W. of Katol on the left bank of the Jám nadi, and 1½ miles W.N.W. of Parsurí village. λ 21 15 1.80 L 78 34 15.53 H 1886 Nos. 374, 375
Kamlá Hill Mark. (Ellichpur) About 1½ miles N.W. of the village of that name, and 1½ miles due W. of Bothá village. λ 21 31 15.72 L 77 32 10.72 H 3680 Nos. 161, 162	Káranja Fort, (Amráoti) S.W. angle. λ 20 28 43.1 L 77 31 38.4 Nos. 190, 191	Kherlá Hill Fort, (Betúl) N. E. angle. λ 21 55 42.1 L 77 59 32.8 Nos. 150, 151
Karondá House, (Gwalior Territories) Highest, in village. λ 23 45 15.5 L 78 3 28.5		

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Kistnápura Palace. (Hyderabad, Deccan) Or conspicuous building on N.W. bastion of fort. λ 18 9 23.6 L 77 51 13.7 No. 335	Kúa h.s. (Tonk) Situated about 1 mile S.W. of village so called. It is marked by a circular platform with usual markstone in centre which is in the normal of a markstone sunk in the ground. λ 23 58 32.41 L 77 45 14.32 Nos. 67, 68	Lagaon Patodá, Bastion. (Hyderabad, Deccan) λ 18 51 5.2 L 77 50 52.1 No. 272
Kolgaon Fort, (Hyderabad, Deccan) S.E. angle. λ 19 24 11.8 L 77 41 32.4 No. 237	Kuárá s. (Bhopál) Close to, and S.W. of, the village of that name. λ 22 54 38.56 L 77 58 15.52 Nos. 112, 113	Lak s. (Wún) On S.E. angle of fort. λ 20 5 4.01 L 77 50 56.93 Nos. 210, 211
Komalkotá Fort, (Hyderabad, Deccan) S.W. angle. λ 18 57 44 L 78 34 4	Kudánpur h.s. (Hyderabad, Deccan) On a detached hill, so named after a respectable village which lies close to the foot of the hill on the N., about midway between Banauli and Bálkondá. The hill is called Kundápura by the Hindús. The station is on the summit of the hill a few feet W. of a tree, and is marked by a stone having a centre and circle engraved upon it. λ 18 52 17.63 L 78 13 53.10 H 1533 No. 421	Lalápahár Hill Mark. (Betúl) About 2½ miles N.E. by N. of Badnúr, and 2 miles W. by N. of Kherlá fort. λ 21 56 5.97 L 77 57 43.99 Nos. 147, 148
Komanpáli Fort, (Hyderabad, Deccan) S.W. angle. λ 18 53 39.2 L 78 19 58.9 No. 453	Kurbur Saváli Hill Pagoda. (Hyderabad, Deccan) λ 18 49 2.5 L 77 45 11.7 No. 283	Láwá h.s. (Nágpur) Nearly 1½ miles S. by W. of village so called on main road from Nágpur to Amráoti, and nearly 2 miles E. by S. of Drudanná village on the same road. λ 21 9 40.21 L 79 1 11.98 H 1311 No. 373
Konápura Stone Fort, (Hyderabad, Deccan) N.W. angle. λ 18 24 25.2 L 78 1 8.6 No. 326	Kurlá h.s. (Hyderabad, Deccan) A little more than one mile N.E. of the village so called, and the same distance S. of Nálgáon village. λ 18 46 2.77 L 77 10 53.63 No. 393	Lingampáli h.s. (Hyderabad, Deccan) Nearly 1½ miles S.S.E. of village so called, and the same distance due E. of Jonágaon village. λ 18 23 1.14 L 78 14 22.97 Nos. 482, 483
Kondilwádí Fort, (Hyderabad, Deccan) N.E. angle. λ 18 48 9.6 L 77 48 40.4 No. 280	Kustapuram Pagoda. (Hyderabad, Deccan) λ 18 57 37.8 L 78 18 56.4 No. 445	Lohángí h.s. (Gwalior Territories) On terrace S. of hill pagoda distant ¼ mile due E. of Bhilsá. λ 23 31 35.41 L 77 51 22.34 Nos. 84, 85
Kopdi, XXV. (Vide page 8—A.) λ 20 20 37.19 L 77 42 50.38 H 1437 k 6 No. 34	Ládi, V. (Vide page 4—A.) λ 23 8 44.13 L 77 44 58.05 H 1875 h 3 No. 5	Loní h.s. (Amráoti) Nearly 1 mile W. by S. of village so called, and 1½ miles due E. of Bálágaon. λ 20 31 44.28 L 77 53 23.52 Nos. 195, 196
Kosáli Fort, (Hyderabad, Deccan) N.E. angle. λ 18 49 10.6 L 77 59 58.5 No. 275	Ládpur Hill Mark. (Gwalior Territories) About ¼ mile N.N.E. of village so called, and nearly 1½ miles due E. of Sakatpur village. λ 23 48 10.44 L 77 39 55.29 Nos. 75, 76	Lowá Building. (Hyderabad, Deccan) λ 18 56 31 L 77 9 52 No. 417
Kotgir Idgah, (Hyderabad, Deccan) Centre, on hill. λ 18 34 8.8 L 77 51 37.9 Nos. 800, 801	Madnúr Fort, (Hyderabad, Deccan) Staff on N.W. angle. λ 18 30 0.5 L 77 39 59.0 Nos. 810, 811	
Kothápili Hill Tree. (Hyderabad, Deccan) λ 18 32 13 L 77 51 12		

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Mahádeo Range, Peak No. 1. <i>(Hoshangabad)</i> The Mahádeo is the name given to the eastern portion of the great Sátputra chain which forms the southern watershed of the Nerbuda river. About 1½ miles N.E. of Jamnia village. λ 22 7 57 L 77 13 23 H 3150	Mahádeo Range, Peak No. 10. <i>(Chhindwára)</i> Also called Bel Kandhar hill; it is distant 2 miles S.W. of Koudrí village. λ 22 28 32 L 78 18 27 H 3790	Mainúr h.s. <i>(Hyderabad, Deccan)</i> About ¼ mile S. by W. of village so called, and the same distance N.W. of Shakápur. λ 18 28 10'04 L 77 41 31'53 Nos. 302, 303
Mahádeo Range, Peak No. 2. <i>(Hoshangabad)</i> Nearly 1½ miles N.E. of Búdímái village, and about 1½ miles N. by E. of Gúlarghát. λ 22 22 57 L 77 35 54 H 2130	Mahádeo Range, Peak No. 11. <i>(Chhindwára)</i> About 1½ miles E.S.E. of Baruth village. λ 22 23 22 L 78 21 18	Málá Date Tree. <i>(Gwalior Territories)</i> W. of village. λ 23 41 19 L 78 1 1
Mahádeo Range, Peak No. 3. <i>(Betúl)</i> About ¼ mile S. of Silpití village, and 1½ miles N. of Batná village. λ 22 26 56 L 77 45 34 H 2040	Mahádeo Range, Peak No. 12. <i>(Chhindwára)</i> Also called Dhokgarh hill. λ 22 26 56 L 78 24 58 H 4460	Málegaon h.s. <i>(Wardha)</i> About 2½ miles S.E. of village so called, and 1 mile due S. of Ranworí village. λ 21 5 28'71 L 78 20 53'37 H 1615 No. 366
Mahádeo Range, Peak No. 4. <i>(Hoshangabad)</i> About 3¼ miles N.W. of Punjí village, and 3 miles N.N.E. of Butná village. λ 22 20 42 L 78 1 47	Mahádeo Range, Peak No. 13. <i>(Chhindwára)</i> Also called Búrí Mái; it is 1½ miles E. by S. of Chanor village, and 1 mile W. by S. of Piráwári. λ 22 18 28 L 78 25 37 H 3600	Málegaon s. <i>(Hyderabad, Deccan)</i> On N.E. angle of fort. λ 18 49 0'62 L 77 2 58'77 Nos. 398, 399
Mahádeo Range, Peak No. 5. <i>(Hoshangabad)</i> λ 22 37 21 L 78 7 9 H 1780	Mahádeo Range, Peak No. 14. <i>(Chhindwára)</i> About 400 yards N. of Gob village, and ¼ mile S. of Janundougá village. The Narial pass is about 1½ miles E. by N. λ 22 15 55 L 78 27 55	Malgi, XLVI. <i>(Vide page 12—A.)</i> λ 17 53 7'75 L 77 38 51'82 H 2212 h 1 No. 58
Mahádeo Range, Peak No. 6. <i>(Chhindwára)</i> Also called Parsákot hill; it is distant ¼ mile S.W. of Jámkodrá village, and 1½ miles N.W. of Belond village. λ 22 1 45 L 78 9 0	Mahádeo Range, Peak No. 15. <i>(Chhindwára)</i> Also called Chater hill. A very conspicuous hill 1½ miles N.E. of Patpání village. λ 22 39 44 L 78 37 3 H 2920	Málkotá s. <i>(Hyderabad, Deccan)</i> On N.E. angle of fort. λ 19 3 32'55 L 77 30 10'57 No. 258
Mahádeo Range, Peak No. 7. <i>(Hoshangabad)</i> λ 22 30 30 L 78 12 15 H 3120	Mahágaon Fort, <i>(Wún)</i> N.E. angle. λ 20 13 4'1 L 77 57 30'0 No. 204.	Mallánáguttá s. <i>(Hyderabad, Deccan)</i> On pagoda. λ 18 23 12'87 L 78 19 49'45 Nos. 480, 481
Mahádeo Range, Peak No. 8. <i>(Chhindwára)</i> About 1½ miles W. by S. of the hill called Kilendeo. λ 22 13 50 L 78 15 46 H 3570	Mahálingam Pagoda, <i>(Hyderabad, Deccan)</i> Under Banyan tree at head of Godávári river, and about ¼ mile N. of the black rocks. λ 18 56 27'0 L 78 5 35'2 No. 440	Mallápuram Hill Tree. <i>(Hyderabad, Deccan)</i> λ 18 28 39 L 77 52 4
Mahádeo Range, Peak No. 9. <i>(Hoshangabad)</i> λ 22 37 29 L 78 16 43 H 1640	Máhúr, XXVIII. <i>(Vide page 8—A.)</i> λ 19 49 47'15 L 77 58 42'87 H 1969 h 8 No. 87	Mallápuram Pagoda, <i>(Hyderabad, Deccan)</i> On hill. λ 18 58 46'7 L 78 44 1'9 No. 454

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Mallekulí s. (Hyderabad, Deccan) On N.W. angle of fort.</p> <p>λ 18 52 21·78 L 77 5 47·87 Nos. 396, 397</p>	<p>Masjidpur h.s. (Tonk)</p> <p>λ 24 0 36·97 L 77 58 42·59</p> <p>See Synoptical Volume of the Calcutta Longitudinal Series.</p>	<p>Murthaud Fort, (Hyderabad, Deccan) S.W. angle.</p> <p>λ 18 48 54·3 L 78 30 16·5 Nos. 461, 462</p>
<p>Malligá h.s. (Hyderabad, Deccan) On the most conspicuous hill of a range seemingly connected with the Bider heights, about 6 miles E. of Bider, and 1 mile S.E. of Malligá village. The station is marked on the gravel rock, a stone with ⊙ inscribed thereon being laid over it and surmounted by a small tree supported in position by a pile of stones.</p> <p>λ 17 53 8·27 L 77 38 52·17 H 2208 Nos. 346, 347</p>	<p>Menda Tree. (Betúl) About 1½ miles N. by W. of Nílgarh Principal Station.</p> <p>λ 21 46 45 L 77 41 18</p>	<p>Músápétt Bastion. (Hyderabad, Deccan)</p> <p>λ 18 2 7·1 L 77 59 44·2 No. 344</p>
<p>Mallúpett Fort, (Hyderabad, Deccan) Round bastion, at S.W. angle.</p> <p>λ 18 25 23·7 L 78 17 21·1 No. 491</p>	<p>Morpáni, IX. (Vide page 5—A.)</p> <p>λ 22 29 39·48 L 77 56 12·23 H 1949 h 0 No. 10</p>	<p>Mustápur Hill Tree. (Hyderabad, Deccan)</p> <p>λ 18 49 21 L 77 37 41</p>
<p>Manbhá Building, (Amráoti) High, open.</p> <p>λ 20 30 35·6 L 77 40 25·5 No. 192</p>	<p>Motíá Fort, (Hyderabad, Deccan) Brick-built turret, S.W. angle.</p> <p>λ 18 44 24·4 L 78 27 12·5 Nos. 471, 472</p>	<p>Náchangaon h.s. (Wardhá) Nearly 1½ miles N.E. of Náchangaon, and about 1½ miles S.W. of Kauthá village.</p> <p>λ 20 43 11·24 L 78 23 33·92 H 1227 Nos. 367, 368</p>
<p>Manganál, XL. (Vide page 11—A.)</p> <p>λ 18 13 41·38 L 77 25 5·45 H 2220 h 4 No. 55</p>	<p>Múdhál Turret. (Hyderabad, Deccan) Flag on very high turret in town.</p> <p>λ 18 58 30·8 L 77 57 10·2 Nos. 259, 260</p>	<p>Nadákúdá Turret, (Hyderabad, Deccan) Round.</p> <p>λ 18 43 54·9 L 78 24 22·7 No. 476</p>
<p>Manjíram Turret, (Hyderabad, Deccan) Highest in village.</p> <p>λ 18 50 42·3 L 77 29 5·3 No. 284</p>	<p>Mungíál h.s. (Hyderabad, Deccan) About 2 miles N.E. of village so called, and 2½ miles N.N.W. of Kundral.</p> <p>λ 18 39 30·71 L 77 20 54·82 No. 405</p>	<p>Nagar Fort, (Hyderabad, Deccan) Centre of round turret at N. angle.</p> <p>λ 18 24 37·4 L 78 19 0·0 No. 493</p>
<p>Manúábhár h.s. (Bhopál) On southern summit of a hill, about ¼ mile N.E. of Singárchori on the road from Duráhá to Bhopál, and nearly ½ mile N.W. of Naiápur village.</p> <p>λ 23 16 57·75 L 77 24 22·15 Nos. 99, 100</p>	<p>Múnpáli h.s. (Hyderabad, Deccan) So called from a considerable village of that name lying 3 miles N. of the hill; the small village of Lachmápur is about a mile N.E. from the hill. The station is not on the highest part of the hill, and is marked by a circle and centre cut on a rock and surmounted by the stump of a tree supported in position by a pyramid of stones.</p> <p>λ 18 43 45·61 L 78 17 2·06 H 1706? Nos. 422, 423</p>	<p>Nágtánná Hill Pagoda. (Hyderabad, Deccan)</p> <p>λ 18 59 30·0 L 77 41 20·5 No. 263</p>
<p>Marmango Hill Mark. (Bhopál) About 2 miles S.W. of Pemat and Mangsia villages, and the same distance N.E. of Amodá village.</p> <p>λ 23 12 42·98 L 77 46 49·54 Nos. 97, 98</p>	<p>Mupkallágutá Pile, (Hyderabad, Deccan) Of stones.</p> <p>λ 18 54 33 L 78 23 25</p>	<p>Naiagaon Fort, (Hyderabad, Deccan) S.W. angle of fort N. of the Godávári.</p> <p>λ 18 49 31·7 L 77 58 41·1 No. 274</p>
	<p>Murádpur Temple, (Gwalior Territories) White, in village.</p> <p>λ 23 52 3·6 L 78 5 21·0</p> <p>See Synoptical Vol. of the Calcutta Longitudinal Series.</p>	<p>Nal Ishwar Pagoda. (Hyderabad, Deccan)</p> <p>λ 18 54 35·9 L 78 6 20·3 Nos. 437, 438</p>
		<p>Nallúr Fort, (Hyderabad, Deccan) Flag on highest square bastion.</p> <p>λ 18 56 23·8 L 78 23 38·3 No. 452</p>

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Nander Tomb. (Hyderabad, Deccan)</p> <p>λ 19 8 51'2 L 77 21 48'6 Nos. 414, 415</p>	<p>Ner, XVIII. (Vide page 7—A.)</p> <p>λ 21 9 16'05 L 77 59 6'25 H 1424 h 20 No. 25</p>	<p>Nirmal Bastion. (Hyderabad, Deccan) Centre of grand bastion on hill.</p> <p>λ 19 5 43'4 L 78 24 14'2 Nos. 447, 448</p>
<p>Nándgaon h.s. (Wardha) About 2½ miles S. by E. of Lingá vil- lage (near head of Karak nadi), and 2½ miles N.W. of Panjúrú village.</p> <p>λ 21 3 30'26 L 78 27 5'50 H 1760 No. 369</p>	<p>Ner Fort, (Amráoti) N.E. bastion.</p> <p>λ 20 29 15'6 L 77 54 32'6 No. 197</p>	<p>Nirmúl Fort. (Amráoti) Tree in fort.</p> <p>λ 21 3 39'8 L 77 35 38'6 No. 364</p>
<p>Nándgaon Pagoda, (Hyderabad, Deccan) W. of village.</p> <p>λ 19 3 43'4 L 77 26 20'2 No. 413</p>	<p>Níálkul Dáwal. (Hyderabad, Deccan)</p> <p>λ 17 49 47 L 77 42 19</p>	<p>Nizámpett Fort. (Hyderabad, Deccan) Square platform in centre of fort, highest point.</p> <p>λ 18 5 23'6 L 77 55 24'0 No. 341</p>
<p>Narsápur h.s. (Hyderabad, Deccan) On a high hill about 6 miles S.E. of Bánswádi, and nearly 2 miles N.W. of Mu- dailí: it is named after a small village situated on the table-land about a mile W. of the foot of the hill. A circle cut on stone marks the station.</p> <p>λ 18 21 54'87 L 77 59 36'24 Nos. 289, 290</p>	<p>Nílá Pagoda. (Hyderabad, Deccan)</p> <p>λ 18 46 33'2 L 77 56 36'7 No. 281</p>	<p>Pabáí Bar Tree, (Gwalior Territories) Large, in village.</p> <p>λ 23 45 13 L 77 59 19</p>
<p>Narwargarh, XI. (Vide page 5—A.)</p> <p>λ 22 13 50'24 L 77 38 34'23 H 2570 h 0 Nos. 11, 15</p>	<p>Nílgarh, XV. (Vide page 6—A.)</p> <p>λ 21 45 50'12 L 77 41 46'00 H 2533 h 3 Nos. 17, 21</p>	<p>Pámpád Turret, (Hyderabad, Deccan) In valley.</p> <p>λ 17 54 20'7 L 77 48 24'5 No. 356</p>
<p>Nateran Fort, (Gwalior Territories) Gateway.</p> <p>λ 23 45 34'6 L 77 48 58'6 No. 77</p>	<p>Nílgarh No. 1 s. (Hoshangabad) Within ¼ mile of the Betúl district boundary and distant 3½ miles from Táko village, and about 8½ miles N. of Chirápáni in the Betúl district.</p> <p>λ 22 30 4'42 L 77 48 24'79 H 2170 Nos. 121, 122</p>	<p>Pánboshí Pagoda. (Hyderabad, Deccan)</p> <p>λ 18 55 6 L 77 13 40</p>
<p>Nawápett Fort, (Hyderabad, Deccan) S.W. angle of ruined turret.</p> <p>λ 18 46 20'9 L 78 3 19'2 Nos. 441, 442</p>	<p>Nílgarh No. 2 s. (Betúl) N. of Principal Station of the same name.</p> <p>λ 21 46 19'71 L 77 41 23'91 Nos. 154, 155</p>	<p>Pandorní Hill Tree. (Hyderabad, Deccan)</p> <p>λ 18 43 56 L 77 21 20</p>
<p>Nekhan Fort. (Tonk)</p> <p>λ 24 0 28 L 77 42 26</p>	<p>Nimbá s. (Amráoti) On N.E. bastion of fort.</p> <p>λ 20 55 12'34 L 77 40 19'46 Nos. 178, 179</p>	<p>Parsurá Hill Tree. (Gwalior Territories)</p> <p>λ 23 28 36'3 L 77 53 46'5 No. 93</p>
		<p>Patlápur Mosque, (Hyderabad, Deccan) On height.</p> <p>λ 18 22 44'5 L 77 42 57'5 No. 319</p>
		<p>Patrad Fort, (Hyderabad, Deccan) N.E. angle.</p> <p>λ 19 23 40'4 L 77 40 35'9 No. 239</p>

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Pedápardí Hill Mark. (Hyderabad, Deccan) About 2½ miles E. by S. of Belgaon village, and 3 miles due W. of Uná Borí village.</p> <p>λ 19 15 56.65 L 78 3 14.04 Nos. 250, 251</p>	<p>Púper h.s. (Gwalior Territories) On summit of an isolated hill about 2 miles in length at the N.E. foot of which lies the village of Púper from which the station is distant about ¼ mile nearly S.</p> <p>λ 23 54 34.12 L 77 51 31.95 Nos. 62, 63</p>	<p>Ramanapett h.s. (Hyderabad, Deccan) On a low hill in pargana Bím-gal, about 2 miles S.E. of village Ramanapett, and 4 miles N. of Bím-gal. The station is marked by a ⊙ cut on rock, to the level of which a platform was built. The mark-stone is surmounted by the stump of a tree supported in position by a pile of stones.</p> <p>λ 18 45 17.69 L 78 29 43.99 H 1502 Nos. 429, 430</p>
<p>Petlam Hill Platform, (Hyderabad, Deccan) Of tomb.</p> <p>λ 18 12 54.2 L 77 52 22.4 No. 334</p>	<p>Radrúr Fort. (Hyderabad, Deccan) Also called Radráram. Flag on the great square bastion in fort.</p> <p>λ 18 34 58.2 L 77 55 13.0 Nos. 298, 299</p>	<p>Rámáreddípét Fort, (Hyderabad, Deccan) S.E. angle.</p> <p>λ 18 24 39.5 L 78 24 31.2 No. 502</p>
<p>Pilkápár h.s. (Nággpur) About 1½ miles W.S.W. of village so called, and rather more than a mile to N.W. of Badlá village.</p> <p>λ 21 20 27.48 L 78 48 46.72 H 1788 Nos. 376, 377</p>	<p>Ráhir Pagoda. (Hyderabad, Deccan) On S. bank of river.</p> <p>λ 18 53 39.3 L 77 42 41.9 Nos. 266, 267</p>	<p>Rámátte h.s. (Hyderabad, Deccan) Nearly 2 miles N. of Mukaid fort, and about ¼ mile S.W. of Wádí village.</p> <p>λ 18 43 45.25 L 77 24 34.67 Nos. 406, 407</p>
<p>Pilkher, XXIV. (Vide page 8—A.)</p> <p>λ 20 28 20.70 L 77 39 34.75 H 1356 h 11 No. 33</p>	<p>Ráhhjampett Fort, (Hyderabad, Deccan) W. gateway.</p> <p>λ 18 15 36.3 L 78 22 28.3 No. 506</p>	<p>Rámbudrá Hill Pagoda. (Hyderabad, Deccan)</p> <p>λ 18 51 30.7 L 78 37 5.7 Nos. 459, 460</p>
<p>Pipalgaon Fort, (Hyderabad, Deccan) Tree at N.E. angle.</p> <p>λ 18 50 10.5 L 77 47 38.1 No. 273</p>	<p>Raisen Hill Fort, (Gwalior Territories) Cupola on N. face.</p> <p>λ 23 19 36.0 L 77 49 12.6 No. 96</p>	<p>Rangampett Fort, (Hyderabad, Deccan) High circular bastion in centre.</p> <p>λ 18 23 29.7 L 78 21 48.0 Nos. 503, 504</p>
<p>Pípardará Rev. Survey Station. (Nággpur) About 2 miles due E. of village so called, and 1½ miles due W. of Sallídaba on the Grand Trunk Road.</p> <p>λ 20 58 13.05 L 78 58 5.79 No. 381</p>	<p>Rákur Peak. (Hyderabad, Deccan) About 2½ miles N.E. of Kotá-ghír.</p> <p>λ 18 35 48 L 77 53 7</p>	<p>Ránípur, VII. (Vide page 6—A.)</p> <p>λ 22 59 4.50 L 78 6 13.46 H 1880 h I No. 6</p>
<p>Polliam Pagoda, (Hyderabad, Deccan) Southern.</p> <p>λ 18 51 43.1 L 78 28 39.8 Nos. 457, 458</p>	<p>Rámá s. (Amráoti) At S.W. angle of fort.</p> <p>λ 21 6 44.69 L 77 39 44.32 No. 175</p>	<p>Ránjil Fort, (Hyderabad, Deccan) Gateway of N.E. tower.</p> <p>λ 18 45 29.9 L 77 59 33.0 No. 282</p>
<p>Potangal Fort. (Hyderabad, Deccan) S.W. angle of inner fort.</p> <p>λ 18 33 48.9 L 77 48 26.9 Nos. 306, 307</p>	<p>Rámáká Tanná Tree. (Betúl) S. of village, about 2 miles N.W. by W. of Níl-garh Principal Station.</p> <p>λ 21 46 41 L 77 40 6</p>	<p>Ratnalí Hill Tree. (Hyderabad, Deccan)</p> <p>λ 18 53 1 L 77 52 49</p>
	<p>Ramanapett Fort, (Hyderabad, Deccan) High tiled building on turret, N.E. angle.</p> <p>λ 18 45 41.0 L 78 28 23.6 No. 466</p>	<p>Ratnápúram Fort, (Hyderabad, Deccan) S.W. angle.</p> <p>λ 18 55 59.7 L 78 22 15.4 Nos. 450, 451</p>

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Ratnigiri h.s. (Hyderabad, Deccan) At pagoda so called 1½ miles E.N.E. of Janapur, and rather more than ½ mile S.W. of Darelá village.</p> <p>λ 19 3 36.04 L 77 18 21.47 No. 388</p>	<p>Sálbaldi, XVI. (Vide page 6—A.)</p> <p>λ 21 25 48.35 L 77 59 1.75 H 3090 h 4 No. 22</p>	<p>Sembardá Hill Mark. (Bhopál) About 2 miles N. by E. of hamlet of that name, and the same distance due E. of Pempurá village.</p> <p>λ 23 21 34.79 L 77 38 12.60 Nos. 94, 95</p>
<p>Reddipett Fort, (Hyderabad, Deccan) White turret, S.W. angle.</p> <p>λ 18 24 58.5 L 78 27 46.1 No. 494</p>	<p>Samasgarh, VI. (Vide page 4—A.)</p> <p>λ 23 6 15.67 L 77 23 51.98 H 2069 h 5 No. 8</p>	<p>Será Fort, (Betúl) S.E. angle.</p> <p>λ 21 48 35.3 L 77 56 9.1 No. 153</p>
<p>Referring Lamp s. (Betúl)</p> <p>λ 21 46 44.88 L 77 41 47.64</p>	<p>Sangam Pagoda, (Hyderabad, Deccan) S. of village.</p> <p>λ 18 49 9.4 L 77 54 31.9 Nos. 277, 278</p>	<p>Sháhgarh Fort, (Ellichpur) N.W. turret flag.</p> <p>λ 21 11 6.9 L 77 30 49.3 No. 361</p>
<p>Saiwái Tree, (Gwalior Territories) On hill.</p> <p>λ 23 52 34 L 78 7 3</p>	<p>Sankrámpett Fort, (Hyderabad, Deccan) Mark on N.W. bastion.</p> <p>λ 18 2 48.4 L 77 57 11.2 No. 342</p>	<p>Sháhpur Tomb. (Betúl)</p> <p>λ 22 11 35.0 L 77 56 46.1 No. 139</p>
<p>Saiyid Yádullá Hill. (Hyderabad, Deccan)</p> <p>λ 18 29 30.63 L 78 4 4.20 Nos. 419, 420</p>	<p>Sapáwá Hill Mark. (Bhopál) On summit of a hill and distant about 1½ miles due E. of village of that name, and a mile due W. of Vineká village.</p> <p>λ 23 35 18.78 L 77 32 32.44 Nos. 88, 89</p>	<p>Shakargáh Fort. (Hyderabad, Deccan) N.E. angle of inner fort.</p> <p>λ 18 31 52.0 L 77 39 38.1 Nos. 308, 309</p>
<p>Sákrá Fort, (Wán) S.E. angle.</p> <p>λ 20 12 52.5 L 77 45 17.6 No. 212</p>	<p>Saulígarh Fort. (Hoshangabad) About 2 miles S.E. by E. of Dariáoganj; the road from Harda to Chicholí passes about a mile to S.</p> <p>λ 22 12 28 L 77 31 52</p>	<p>Shaudí Turret, (Hyderabad, Deccan) Square.</p> <p>λ 19 3 5.2 L 77 10 55.9 No. 418</p>
<p>Sákrá Hill Mark. (Wán) About 2½ miles due E. of fort and village of that name, and 2 miles S.S.E. of Sindí village.</p> <p>λ 20 12 36.34 L 77 47 11.88 Nos. 206, 207</p>	<p>Saugá Fort, (Wán) S.W. angle.</p> <p>λ 20 6 42.8 L 77 50 7.5 No. 218</p>	<p>Shilápáli, XLVII. (Vide page 12—A.)</p> <p>λ 17 46 13.61 L 77 42 30.94 H 2201 h 11 Nos. 60, 61</p>
<p>Sákri, XXVII. (Vide page 8—A.)</p> <p>λ 20 0 14.11 L 77 44 34.50 H 1810 h 5 No. 36</p>	<p>Sauyer Hill Pagoda. (Bhopál)</p> <p>λ 23 29 5.5 L 77 39 3.0 Nos. 91, 92</p>	<p>Shiválingápa, XXXVI. (Vide page 10—A.)</p> <p>λ 18 44 56.23 L 77 38 23.46 H 1574 h 5 No. 45</p>
<p>Salaia Hill Tree. (Gwalior Territories)</p> <p>λ 23 36 15.4 L 77 37 2.9 Nos. 86, 87</p>	<p>Selgaon Fort. (Hyderabad, Deccan) Tiled building in fort.</p> <p>λ 18 36 46.8 L 77 46 5.5 No. 297</p>	<p>Shivni, XXXII. (Vide page 9—A.)</p> <p>λ 19 21 58.94 L 78 10 14.23 H 2132 h 4 No. 41</p>

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Shivni Hill Mark. <i>(Wán)</i> About 1½ miles E. by N. of Arambí fort, and 2 miles S.S.W. of Shivni village. λ 20 9 17.88 L 77 53 58.31 Nos. 208, 209	Sonágadd Rock. <i>(Hyderabad, Deccan)</i> Fortified rock, N.W. bastion. It is also called Yetti Shám-gaddá. λ 19 0 45.2 L 78 24 42.9 No. 449	Tadkol Fortified Hill, <i>(Hyderabad, Deccan)</i> Gateway, or highest part of the work. λ 18 21 47.3 L 77 55 0.0 No. 381
Shivni Hill Pagoda. <i>(Wán)</i> About ½ mile S.W. of the village so called. λ 20 10 3.2 L 77 54 6.5 No. 216	Sonápétt Fort, <i>(Hyderabad, Deccan)</i> S.W. angle. λ 18 57 34.7 L 78 24 2.6 No. 446	Takalkherá Base, N. End s. <i>(Amráoti)</i> About 3½ miles N. by W. of village so called, and nearly 1 mile E. by S. of Jagarnáthpur. λ 21 8 53.17 L 77 41 37.37 No. 358
Sholápur Fort, <i>(Ellichpur)</i> S.E. angle. λ 21 4 58.7 L 77 35 47.4 No. 363	Station A. <i>(Hyderabad, Deccan)</i> On the Bider base-line 2.934 miles from the West-End; and is situated on a gentle swell of land, about ¼ mile N. of the small village of Sholápur. The station is marked by a dot on a silver stud let into a slip of brass imbedded in stone. λ 17 56 5.27 L 77 35 47.38 H 1938	Talegaon s. <i>(Amráoti)</i> In old mud fort. λ 20 59 36.38 L 77 40 20.67 H 1070 No. 174
Sikurtí s. <i>(Hyderabad, Deccan)</i> About 4 miles N. by E. of Karámungi, and ¼ mile nearly N. of Kúr-ságuttá village. λ 18 4 54.26 L 77 39 6.68 No. 337	Station B. <i>(Hyderabad, Deccan)</i> On the Bider base-line and 1.744 miles from the East-End, and is situated on a swell in the fields N.W. of Malgi village. This station is marked precisely after the method adopted for station A. λ 17 54 25.01 L 77 38 12.28 H 1937	Tanná Village Flag. <i>(Betúl)</i> λ 21 30 21 L 77 33 13
Sirádon h.s. <i>(Hyderabad, Deccan)</i> About 1½ miles due E. of village so called, and 2 miles W. of Umrá village. λ 18 57 4.31 L 77 23 49.62 Nos. 386, 387	Súbahpur Palace. <i>(Hoshangabad)</i> λ 22 46 20.4 L 78 18 24.4 Nos. 118, 119	Tek, X. <i>(Vide page 5—A.)</i> λ 22 30 43.49 L 78 9 7.44 H 2728 h 3 Nos. 13, 14
Sirpalí Hill Mark. <i>(Hyderabad, Deccan)</i> About 3½ miles N. of Chotá Parudí, and 3½ miles N.W. of Belgaon village. λ 19 18 46.86 L 77 57 26.77 Nos. 248, 249	Súkli, XXIX. <i>(Vide page 8—A.)</i> λ 19 41 13.04 L 77 44 24.72 H 1785 h 3 No. 38	Temburní Turret. <i>(Hyderabad, Deccan)</i> λ 18 47 12.7 L 77 27 6.2 No. 408
Sirsí Hill Mark. <i>(Gwalior Territories)</i> Nearly 2 miles S.E. of the village so called, and 2½ miles W. by S. of Nateran. λ 23 45 2.96 L 77 46 1.57 Nos. 78, 79	Sultánpett Tower, <i>(Hyderabad, Deccan)</i> S.W. angle of wall. λ 18 27 57.4 L 77 43 28.9 Nos. 312, 313	Terbán, XXXI. <i>(Vide page 9—A.)</i> λ 19 17 30.44 L 77 43 18.54 H 1732 h 5 No. 40
Somtána, XXXIV. <i>(Vide page 9—A.)</i> λ 19 5 0.52 L 77 41 43.47 H 1714 h 3 No. 43	Suklí Fort, <i>(Amráoti)</i> S.W. angle. λ 20 27 52.8 L 77 40 38.6 No. 194	Terorá Fort, <i>(Wán)</i> S. W. angle. λ 20 11 20.0 L 78 1 28.7 No. 205
Soná Fort, <i>(Hyderabad, Deccan)</i> S.E. angle. λ 19 23 40.3 L 77 57 38.6 No. 244	Thaddí Patodá. <i>(Hyderabad, Deccan)</i> λ 18 51 9 L 77 51 0	

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
Thorlakondá Turret. (Hyderabad, Deccan) λ 18 44 47'2 L 78 21 9'9 No. 469	Umarkhed Idgah, (Básim) In village; S. minaret. λ 19 35 45'7 L 77 43 37'7 Nos. 227, 228	Vindhyáchal Range, Peak No. 4. (Bhopál) About ¼ mile W. by S. of Jahánpur on the road from Chichlí to Hoshangabad: the Nerbudá flows within a mile of the peak. λ 22 48 42 L 77 48 25 H 1800
Thugaon s. (Amrdóti) On S.W. angle of fort; marked with a stone having a ⊙ engraved. λ 21 6 1'67 L 77 37 1'12 No. 359	Umbaldá Fort, (Amrdóti) S.W. angle. λ 20 28 26'0 L 77 38 18'1 No. 193	Vindhyáchal Range, Peak No. 5. (Bhopál) About 2 miles W. by N. of Rámpurá, and the same distance N.E. of Nanganpur. λ 22 55 2 L 77 52 11 H 2070
Tirlápuram s. (Hyderabad, Deccan) On highest turret. λ 18 3 20'50 L 77 57 38'83 No. 340	Umrá Fort, (Hyderabad, Deccan) S.W. angle. λ 18 56 51'9 L 77 25 43'0 No. 411	Vindhyáchal Range, Peak No. 6. (Bhopál) About a mile N.W. of Húrál village, and 1½ miles N. by E. of Murárl village. λ 22 57 10 L 77 57 23 H 1950
Tirmelpáli Great Bastion, (Hyderabad, Deccan) Square; on a low hill E. of Tirmelpáli. λ 18 25 28'7 L 78 20 27'5 No. 492	Umrí Fort, (Hyderabad, Deccan) N.W. angle. λ 19 21 55'4 L 77 41 20'9 No. 241	Vindhyáchal Range, Peak No. 7. (Bhopál) About ¼ mile S. of the village of Dunráde, and 2 miles due E. of that of Píparpáni. λ 23 7 13 L 78 12 0 H 1790
Tungáná Barmá Ishwar. (Hyderabad, Deccan) λ 18 53 9'1 L 78 4 57'5 No. 436	Uplaye Fort, (Hyderabad, Deccan) S.W. angle of high, square bastion in village E. of Nagar. λ 18 24 25'3 L 78 21 25'5 No. 495	Wajápále Fort, (Hyderabad, Deccan) Centre of tiled building over E. face. λ 18 27 44'5 L 78 14 32'4 No. 490
Tupselgaon Fortress. (Hyderabad, Deccan) Tiled building on a bastion of the fortress. λ 18 38 13'9 L 77 39 19'6 Nos. 294, 295	Utaigaon Fort, (Básim) N.W. angle. λ 19 28 13'2 L 77 43 59'0 No. 236	Wírúr, XXI. (Vide page 7—A.) λ 20 49 20'17 L 78 7 35'17 H 1193 h 14 No. 81
Udepur Hill Mark. (Gwalior Territories) On summit of hill and distant ½ mile due S. of the large village of that name. λ 23 53 26'20 L 78 6 2'31 Nos. 64, 65	Utpillí Hill, (Hyderabad, Deccan) Palm tree. λ 18 37 46 L 77 58 45	Wúcher Hill Mark. (Bhopál) About ¼ mile S.W. of village so called, and 1½ miles E. a little S. of Eran village. λ 23 30 18'79 L 77 45 37'64 No. 83
Umaidá Pagoda, (Hyderabad, Deccan) On S. bank of river. λ 18 56 42'6 L 78 8 33'9 No. 439	Vindhyáchal Range, Peak No. 1. (Bhopál) Nearly 2 miles E. of Salkampur, and about 1½ miles N. of Lálkáchár. λ 22 44 17 L 77 32 55 H 2190	Wutnúr Fort, (Hyderabad, Deccan) Round bastion at S.W. angle. λ 18 26 54'0 L 78 14 22'7 No. 489
Umarkhed Hill Pagoda. (Básim) λ 19 36 25'7 L 77 43 55'0 Nos. 225, 226	Vindhyáchal Range, Peak No. 2. (Bhopál) Nearly 2 miles S.E. by E. of Rattanpur village. λ 22 46 19 L 77 34 28	Vindhyáchal Range, Peak No. 3. (Bhopál) About 1½ miles S.E. by E. of Pátní village, and the same distance S.W. by S. of Karanjlí. λ 22 46 39 L 77 36 38

Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.	Name of station, district, description, co-ordinates &c.
<p>Yáholí s. (<i>Amráoti</i>) About 2 miles S. by E. of village so called, and the same distance N. by W. of Maholí village.</p> <p>λ 21 5 7.48 L 77 53 30.65 No. 357</p> <p>Yailpur Turret, (<i>Hyderabad, Deccan</i>) Of mud bastion; S.W. angle.</p> <p>λ 18 45 40.9 L 78 26 29.2 No. 470</p>	<p>Yairgatlá h.s. (<i>Hyderabad, Deccan</i>) On a well known hill nearly a mile W. of the village so called, in the Bálkondá par- gana. The station is marked by a ⊙ cut on a rock and surmounted by the stump of a tree which is kept in position by a pyramid of stones.</p> <p>λ 18 54 34.83 L 78 31 4.79 H 1420 No. 424</p> <p>Yanágápáli, XXXVII. (<i>Vide page 10—A.</i>)</p> <p>λ 18 26 18.96 L 78 0 3.27 H 2028 h 3 No. 46</p>	<p>Yárbid Tree, (<i>Hyderabad, Deccan</i>) On turret.</p> <p>λ 19 0 43.2 L 78 2 18.9 No. 255</p> <p>Yemsha, XXXV. (<i>Vide page 10—A.</i>)</p> <p>λ 18 51 32.22 L 78 1 1.00 H 1354 h 4 No. 44</p> <p>Yiledgaon Temple, (<i>Hyderabad, Deccan</i>) On hill; spire.</p> <p>λ 18 59 6.1 L 77 37 43.6 Nos. 400, 401</p>

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

An Account of the Measurement of two Sections of the Meridional Arc of India, bounded by the parallels of $18^{\circ} 3' 5''$; $24^{\circ} 7' 11''$; and $29^{\circ} 30' 18''$. By 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.

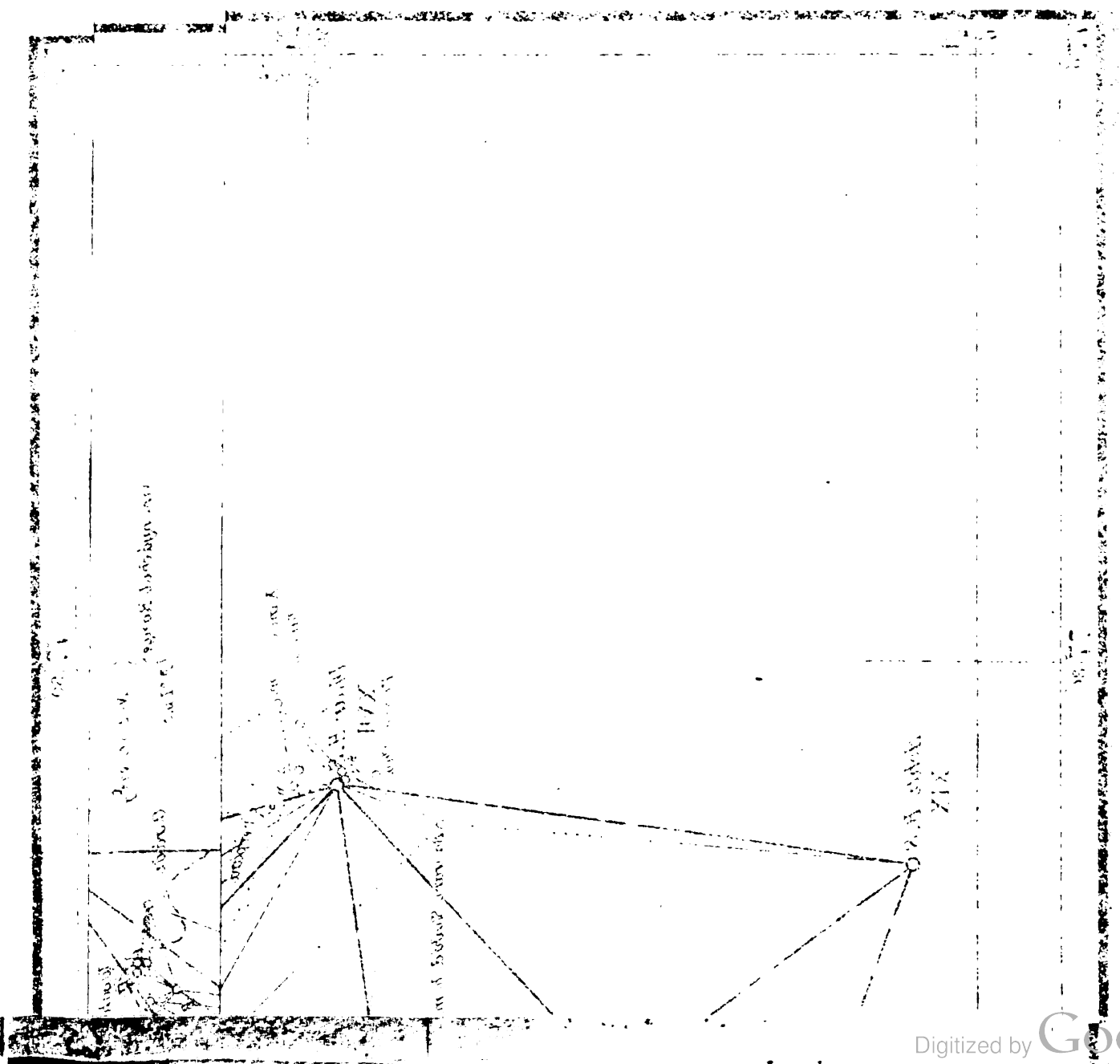
- Volume I. The Standards of Measure and the Base-Lines, also an Introductory Account of the early Operations of the Survey, during the period 1800-1830. By Colonel J. T. Walker, R.E., F.R.S., &c., &c., Superintendent of the Survey. Dehra Dún, 1870.
- Do. II. History and General Description of the Principal 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, Gurhágárh and Jogí-Tíla Meridional Series, and the Sutlej Series of the North-West Quadrilateral. By Colonel J. T. Walker, R.E., F.R.S., &c., &c., Superintendent of the Survey, and his Assistants. Dehra Dún, 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 Gurhágárh Meridional Series, or Series *F.* of the North-West Quadrilateral. By Colonel J. T. Walker, R.E., F.R.S., &c., &c., Superintendent of the Survey, and his Assistants. Dehra Dún, 1875.
- Do. V. The Rahún Meridional Series, or Series *E.* of the North-West Quadrilateral. By Colonel J. T. Walker, R.E., F.R.S., &c., &c., Superintendent of the Survey, and his Assistants. Dehra Dún, 1875.
- Do. VI. The Jogí-Tíla Meridional Series, or Series *G.* and the Sutlej Series, or Series *H.* of the North-West Quadrilateral. By Colonel J. T. Walker, R.E., F.R.S., &c., &c., Superintendent of the Survey, and his Assistants. Dehra Dún, 1875.

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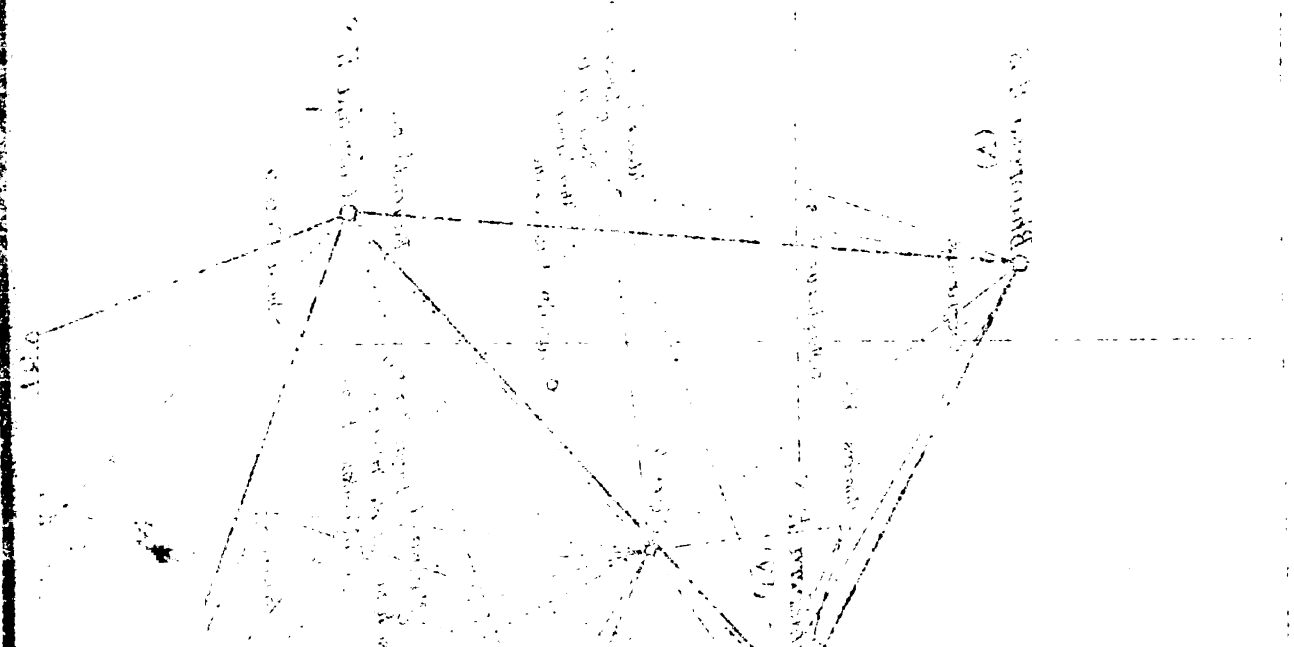
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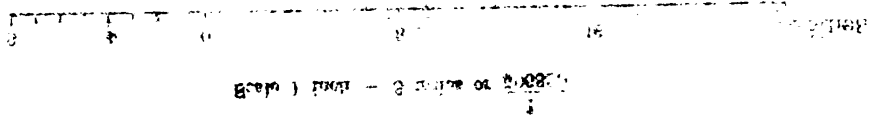
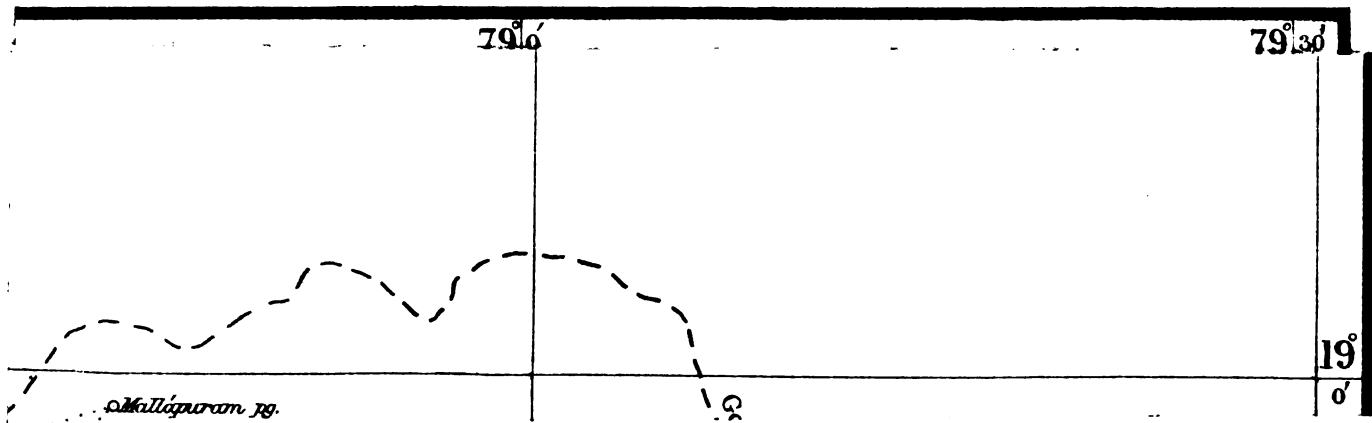
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TO THE OFFICE OF THE DISTRICT ENGINEER, MADRAS, 1917

Submitted by the District Engineer, Madras, 1917

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