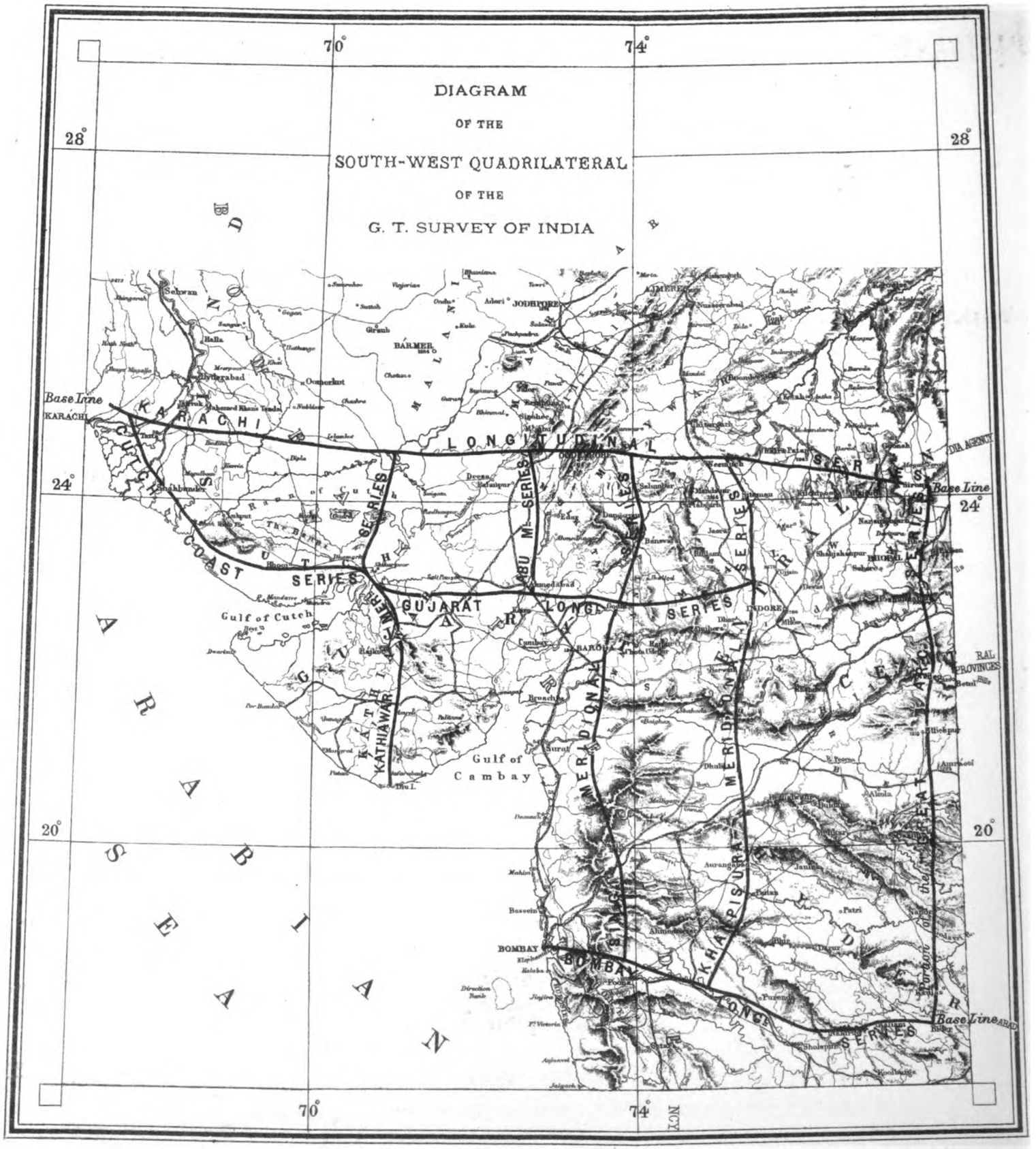

Photozincographed at the Office of the Trigonometrical Branch, Survey of India, Dehra Dún, January 1893.

SYNOPSIS OF THE RESULTS OF THE OPERATIONS OF

THE GREAT TRIGONOMETRICAL SURVEY OF INDIA

VOLUME XXXII.

DESCRIPTIONS AND CO-ORDINATES

OF THE

PRINCIPAL AND SECONDARY STATIONS AND OTHER FIXED POINTS OF

THE SINGI MERIDIONAL SERIES

OR SERIES H

OF THE

SOUTH-WEST QUADRILATERAL.

PREPARED IN THE OFFICE OF THE TRIGONOMETRICAL BRANCH, SURVEY OF INDIA,
COLONEL G. STRAHAN, R.E., DEPUTY SURVEYOR GENERAL, IN CHARGE.

PUBLISHED UNDER THE ORDERS OF
COLONEL H. R. THUILLIER, R.E., SURVEYOR GENERAL OF INDIA.

Dehra Dun:
PRINTED AT THE OFFICE OF THE TRIGONOMETRICAL BRANCH, SURVEY OF INDIA.
B. V. HUGHES.

1893.

Price Two Rupees.

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ERRATA, ADDENDA ET CORRIGENDA.

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26—*H.*	in triangle No. 212 and *passim*	*for*	Janjira s.	*read*	Arnála s.
48—*H.*	in description of Dungar h.s.	*after*	iron	*insert*	nail

55—*H.* The position of Láchharas Hill Mark (helio.) is not reliable as it was determined from an ill-conditioned triangle.

April, 1893.

J. ECCLES,

In charge of Computing Office.

REFERENCES.

The abbreviations employed in the text are as follows:—

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

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

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

April, 1893.

J. ECCLES,
In charge of Computing Office.

PREFACE.

The Singi Meridional Series, the details of which are given in this volume, is situated approximately on the meridian of 73° 30′. Nearly two-thirds of the series, between latitudes 19° and 22° 45′, forms part of the western boundary, and the remainder an internal chain, of the South-West Quadrilateral, or that section of the triangulation of India which lies between the parallels of 18° and 25° and between the meridian of 78° and the Arabian Sea. The general principles of the simultaneous reduction, and the procedure followed in carrying it out, are explained in Volume II of the *Account of the Operations, &c.*; and full details of the whole of the principal triangulation appertaining to the Quadrilateral will be found in Volume XIV of the *Account of the Operations, &c.*

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

For the several Series forming the North-West Quadrilateral,

I. Great Indus Series.
II. Great Arc, Section 24° to 30°.
III. Karáchi Longitudinal Series.
IV. Gurhágarh Meridional Series.
V. Rahún Meridional Series.
VI. Jogí-Tíla and Sutlej Series.
VII. North-West Himalaya Series.
VII A. Jodhpore and Eastern Sind Meridional Series.

For those forming the South-East Quadrilateral,

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

} Already published.

For those forming the North-East Quadrilateral,

XIV. Budhon Meridional Series.
XV. Rangír Meridional Series.
XVI. Amua and Karára Meridional Series.
XVII. Gurwáni and Gora Meridional Series.
XVIII. Huríláong and Chendwár Meridional Series.
XIX. North Párasnáth and North Malúncha Meridional Series.
XX. Calcutta and Brahmaputra Meridional Series.
XXI. East Calcutta Longitudinal and Eastern Frontier Series, Section 23° to 26°.
XXII. *Assam Valley Triangulation, E. of Meridian 92°.

} Already published.

For the following Series of the Southern Trigon, *viz.*,

XXIII. South Konkan Coast Series.
XXIV. Mangalore Meridional Series.
XXV. South-East Coast Series.
XXVI. Bombay Longitudinal Series.
XXVII. Madras Longitudinal Series.
XXVIII. Madras Meridional and Coast Series.
XXIX. Great Arc, Section 8° to 18°. (*In press*).

And for the following Series of the South-West Quadrilateral:—

XXX. Abu Meridional and Gujarát Longitudinal Series.
XXXI. Khánpisura Meridional Series.

} Already published.

The present is the 33rd Synoptical Volume in order of publication, and the third of those appertaining to the South-West Quadrilateral; it gives the results both of the principal triangulation executed exclusively with theodolites having azimuthal circles of 15 and 18 inches in diameter, read by three micrometer microscopes, and of the secondary triangulation in which besides these instruments a 12 and a 14-inch theodolites read by verniers were used.

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-West Quadrilateral. All secondary triangulation emanating from one side of the principal Series and closing on another side thereof, or on a contiguous Series, have also been made consistent throughout.

As regards the general arrangement of this volume, it may be pointed out that the Introduction to the Series was originally prepared for Volume XIV 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 this volume. The Introduction gives a historical and descriptive sketch of the progress of the whole operations in the field—both principal and secondary—from year to year, mentions the Officers by whom they were conducted, the theodolites with which principal angles were measured, and indicates the work done by each of the Assistants. The adjustment of the secondary triangulation was taken in hand in the year 1892, and completed in the same year when the printing of the volume was resumed.

The data given in this volume are the following:—

First (page $1_{H.}$), an alphabetical list of the names of the principal stations, showing the numbers assigned to them.

Second (page $3_{H.}$), a numerical list giving the names corresponding to the numbers.

Third (page $5_{H.}$), descriptions of the structure and positions of the principal stations.

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* This is an offshoot of the Assam Longitudinal Series, and falls entirely outside of the limits of the North-East Quadrilateral. The volume is issued in a preliminary form, and therefore only a limited number of copies are available to meet any immediate demand for data: the final publication will be hereafter made on the completion of the triangulation in Burma, into the general reduction of which this Series will enter.

Fourth (page 13—$_{H.}$), the angles and sides of the principal triangles.

Fifth (page 18—$_{H.}$), 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 31—$_{H.}$), the azimuths of surrounding stations and points at principal, principal-auxiliary and secondary stations, the latter arranged in alphabetical order.

Seventh (page 41—$_{H.}$), the co-ordinates and descriptions of all stations and points arranged in alphabetical order.

It has not been considered necessary to publish the whole of the details of the secondary triangulation; the sides and angles of 261 triangles, which were selected as most likely to be of future use, and the azimuths of all these sides, have been given; but for a number of other points the co-ordinates only have been given. With the aid of Tables Nos. XXVI, XXVII, XXVIII, XXIX and XXX of the *Auxiliary Tables to facilitate the calculations of the Survey of India*, Dehra Dún, 1887, surveyors, working on a system of rectangular co-ordinates, can readily transform the spheroidal co-ordinates here given to suit their requirements.

The heights above mean sea level of the stations depend on the final trigonometrically determined values of Tana and Lakarwás stations of the Karáchi Longitudinal Series of the North-West Quadrilateral and on those of Párner and Singi stations of the Bombay Longitudinal Series of the Southern Trigon, and are further controlled by lines of spirit-levelling. All particulars regarding the heights will be found detailed on page 41—$_{H.}$ as well as in the footnotes to the subsequent pages.

The longitudes depend on an astronomically determined value of the longitude of the Madras Observatory, deduced about the year 1815. The longitude of the Madras Observatory has however been re-determined by the Electro-Telegraphic method, from observations made at Greenwich, Mokattam (in Egypt), Suez, Aden, Bombay and at certain stations of the triangulation in India.

This value of the longitude of the Madras Observatory is equivalent to 80° 14′ 51″ E.; and as the originally adopted value, on which the longitudes of the whole of the stations of this Survey are based, is 80° 17′ 21″ E.—see page 135 of Volume II of the *Account of the Operations, &c.*—the following precept may be accepted with considerable confidence:—

All the values of longitude in this volume require a constant correction, probably of −2′ 30″.

The orthography of Indian names in the present volume is in accordance with the provincial lists of spellings constructed under the immediate orders of the Government of India. The newly authorised spellings were adopted for all names and other words contained in these lists; but for words for which there was no specific authority, the spellings have been framed in accordance with the methods followed in the preparation of the published lists, reference being made in the present instance more particularly to the Gazetted Lists for the Bombay Presidency, and Rajputana. As a general rule the pronunciations of the vowels are as follows:—*a* has a variable sound as in w*o*m*a*n, r*u*r*a*l, p*a*ltry; *á* as in t*a*rtan; *i* as in b*i*t; *í* as in r*a*v*i*ne; *u* as in b*u*ll; *ú* as in r*u*ral; *o* as in n*o*te; *e* as *a* in s*a*y; *au* as *ou* in cl*ou*d; *ai* as *i* in r*i*de. Final vowels and those in well-known terminals are unaccented. When the popular spelling of a name has been accepted by Government, its correct orthography is generally given in parenthesis where the name occurs for the first time.

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

The general arrangement of the volume is in accordance with that adopted in previous Synoptical Volumes. The data which it contains have been prepared chiefly under the superintendence of Mr. J. Eccles, M.A., Deputy Superintendent, the Officer in charge of the Computing Office. The Introduction to the Series was written by Captain S. G. Burrard, Deputy Superintendent. The volume like its predecessors has been printed at the Trigonometrical Branch Office at Dehra; Mr. Peychers has rendered valuable service in the examination of the press proofs generally, and more particularly in regard to the preparation and final revision of the letter press and numerical details which require the utmost care, and in this respect from his natural aptitude and experience his assistance has been most valuable.

DEHRA DUN,
March, 1893.

G. STRAHAN, COLONEL, R.E.,
Dy. Surveyor General,
In charge Trigonometrical Surveys.

SINGI MERIDIONAL SERIES.

SINGI MERIDIONAL SERIES.

INTRODUCTION.

The Singi Meridional Series of the South-West Quadrilateral is the great chain of principal triangles that follows the meridian of 73° 30′ from the parallel of 19° to that of 24½°. It traverses the British districts of Ahmednagar (Ahmadnagar), Thána, Násik, and Surat, and several of the Native States subject to the Rewa Kántha (Revákántha) and Meywar (Mewár) Political Agencies: it consists of one tetragon, two quadrilaterals, two compound figures, and eighteen single triangles, and extends over a meridional distance of 390 miles.

Its side of origin is Lakarwás (XXXII)—Tána (XXIX) of the Karáchi Longitudinal Series, and it closes on the side Singi (XXX)—Párner (XXVI) of the Bombay Longitudinal Series: from this it will be seen that in the simultaneous reduction of the South-West Quadrilateral, the Series under review had to be fitted in between a finally fixed side of the North-West Quadrilateral and one similarly determined of the Southern Trigon: on the completion of this reduction it was found that the errors which had actually been dispersed between the two fixed terminals were as follows:—

In	Latitude of Singi (XXX)	— 0″·435
„	Longitude of „	+ 0·065
„	Azimuth Singi (XXX)—Párner (XXVI)...	— 6·719
In side	Logarithm of feet	+ 0·000,00274
	giving a ratio of about 0·40 inches per mile.	

The great compound figure, covering a length of 150 miles, that forms the southern portion of this triangulation, was originally termed the North Konkan Coast Series: when its extension to the northward in 1860 was undertaken, it was re-named after the station of Singi of the Bombay Longitudinal Series: the "Singi Series" however only included the present chain of triangles as far north as the parallel of 23°, where it is cut by the Guzerat

(Gujarát) Longitudinal Series at right angles, and the northern portion that lies between the Karáchi and Guzerat Longitudinal Series was for years known as the Oodeypore (Udepur) Meridional Series. But when the simultaneous reduction of the South-West Quadrilateral was undertaken in 1884, the Oodeypore and Singi were merged into one great Meridional Series, and called after the latter.

In the latter part of 1827, Captain J. Jopp, the Deputy Surveyor General of Bombay, who was then employed in compiling maps of different portions of that Presidency, proposed to the Surveyor General, Colonel J. A. Hodgson, to carry a Trigonometrical Survey over such portions of Bombay territories as had not yet been triangulated; his object being to correct and unite the independent detailed surveys of portions of the country which were already in his hands, as well as any others which might be subsequently made. This proposal having been, after certain explanations, assented to and recommended by the Surveyor General, met with the sanction of the Government of India; and on the 15th March 1828, Lieutenant R. Shortrede, of the 14th Bombay European Regiment, an Officer of considerable talent and mathematical knowledge, who had already been employed in the Deccan (Dakshin) Survey, was appointed to superintend the execution.

Immediately on hearing of the newly proposed survey of Bombay, Captain Everest asked the Government of India to place it under his orders; his request was however refused owing to the objections of the Local Government. The latter had for some time previous felt the want of a good map of their Presidency and had started the new survey for the sole purpose of supplying one: their unwillingness to surrender the control of it can thus be easily understood: Everest had the reputation of subordinating the requirements of geography to those of geodesy, and the revenue officials of Bombay felt that if once they handed over the management of their survey to him the geographical wants of their province would be sacrificed to science and their establishment carried off to measure some distant "arc of meridian". Having failed to obtain the control of the Bombay Survey, Everest next urged that at any rate it should be made to emanate from a side of his own triangulation, a series of which had been carried westward from the Great Arc along the parallel of Bombay to within 150 miles of Poona (Puna); and he pointed out that unless this was done much confusion must ensue when the future junction was effected. The Bombay Surveyors again objected, and Shortrede was directed to make his triangulation depend on a base-line of his own which he was to measure with a steel chain by Cary that had never been compared against any recognised standard of length.

Lieutenant Shortrede selected a site for his base on the Kárla plain about 40 miles east of Bombay, and occupied himself during the rains of 1828 in preparing the requisite apparatus: in the month of November he proceeded to the spot, and, with the assistance of Captains Jopp and Grafton, commenced the measurement on the 12th of December, 1828, and finished it on the 16th of January, 1829. The base was 4·065 miles in length, and had the defect of a break in the measurement, caused by the river Indráyani, whose abrupt banks and uneven rocky bed prevented the measurement from being carried directly across:

Shortrede determined the length of this portion by measuring a small supplementary base along one bank of the river perpendicular to the main alignment and by then observing the horizontal angle at the outer extremity of this auxiliary line between the ramrods of his two guns one of which he had stuck in the ground on either side of the river. The remainder of the season after the completion of the Kárla Base-line and the next three years were occupied in extending a network of triangles over the whole country from Latitude 18° to 21°, and from Longitude 73° to 75°.

After the Government of India had refused to sanction the transfer of the Bombay survey to the control of Captain Everest, the latter had laid the case before the Court of Directors themselves, and in 1831 the Governor General received orders from England to unite all the Trigonometrical Surveys in India under one head. Everest's first act on taking over his new charge was to call for a report on Shortrede's Base-line. On discovering what had been done he immediately wrote to Shortrede pointing out the absurdity of having a break in the middle of a base and suggested the advisability of at once selecting a new site and making an entirely new measurement; this letter was not received by Shortrede till three months after it had been written; he had been proud of his performances and was extremely hurt: he answered that he considered his base as accurate as any of the G. T. Survey, and that as far as the "break" was concerned he had Colonel Lambton's G. T. Base-line at Bangalore (Běngalúr) as a precedent. Six months afterwards he learnt from Colonel Everest for the first time, that the base-line at Bangalore which he had so faithfully imitated had been commenced on an open, unbroken plain, and that the break in its length was solely caused by the action of the natives, who, in the course of the measurement, had set to work and deliberately excavated a series of large tanks in the actual alignment: to his intense mortification he discovered too from the sarcastic letter of his chief that Lambton himself had rejected this very Bangalore measurement shortly after its execution on account of the break in its continuity.

Shortrede's triangulation supplied ample food for another prolonged and bitter controversy between the two Surveyors. Everest could hardly allude to it with temper: a suggestion made by the Surveyor General to incorporate it with the G. T. Survey he received with horror and dismissed with scorn. Every detail of the work was found fault with, and numberless changes were introduced: but in these days the postal arrangements were so defective that three months would often elapse between the despatch of a letter from Bengal and its arrival at Bombay, and as may be expected under such conditions of correspondence no great improvements were possible. In October, 1831, Everest wrote to Shortrede that it was useless to continue work until they had had a personal interview, and pressed him to come round to Calcutta where one of the great Base-lines was about to be measured. Shortrede, conscious now of his deficiencies, was only too anxious to go. Unfortunately it was necessary for him, although he was under the orders of the Superintendent of the G. T. Survey, to ask permission of the Government of Bombay; fearing that an application by letter would be answered and refused by some irresponsible Under-Secretary, he asked and obtained a personal interview with Lord Clare, the Governor: the reasons he advanced in favor of his

proposed journey were numerous and weighty; his experience he said of trigonometrical work had hitherto been confined to petty triangulation executed for military purposes in which no great accuracy was necessary, whilst of the methods in vogue with the G. T. Survey which had taken 30 years to develope he was entirely ignorant: he wished now to learn the innermost details of scientific surveying from the only man in India who could teach him: if too he were to go at once, he would be able to assist at the measurement of the Calcutta Base-line and become acquainted with the use of the compensation bars: and what was more important still he would be able to take his chain with him and compare it with Everest's standard. Lord Clare replied that such grounds appeared quite insufficient to warrant the Bombay Government in sending one of their officers to another Presidency, and that until he received a direct order from Lord William Bentinck he should refuse his consent. In 1834 when Shortrede resigned his appointment, all his work was discarded, and, except as a guide in the selection of stations for the later triangulation, it has never been made any use of.

In November, 1841, when the Bombay Longitudinal Series was approaching completion, Colonel Everest decided to run a Meridional Series northwards from Bombay towards Surat: the triangulation party employed in this Presidency was under Lieutenant W. S. Jacob of the Bombay Engineers, and to him the execution of the new project was to be entrusted. By the aid of charts of Shortrede's triangulation, the angles of which were regarded as true to within ten seconds of arc, Jacob was enabled at Bider, where the great Base-line was being measured, to select an approximate series for the North Konkan without going into the field. His design was submitted to Everest for approval in January, 1842, and received final sanction in the following summer. Arrangements were accordingly made to break ground after the recess season, but towards the close of the hot weather Lieutenant Jacob's health entirely gave way: since 1834 when he was first appointed to the Survey in succession to Lieutenant Shortrede, he had been almost continuously employed in peculiarly pestilential tracts of country and had now become a perfect wreck from malaria: he proceeded to England on medical certificate, and his connection with the Survey Department terminated: he was succeeded on December 14th, 1842, by Lieutenant Harry Rivers of the Bombay Engineers, an officer of great mathematical ability who had been appointed to the Trigonometrical Survey only three months previously.

Season 1842-43.

PERSONNEL.

Lieutenant H. Rivers, Bombay Engineers, 2nd Assistant, G. T. Survey.
Mr. J. Fraser, Sub-Assistant, 1st Class.
„ T. Sanger, „ „
„ J. DaCosta, „ 2nd „

Shortly before Christmas Rivers took the field: from Karanja-Singi* as his side of origin he commenced carrying a narrow series of single triangles due northwards along the Coast and having observed a set of circumpolar star observations to δ Ursæ Minoris and 51 Cephei for azimuth at Kalsubai reached Párnera in February without difficulty or interruption. Smoke now began to rise from all the neighbouring jungles, and several days passed without a heliotrope being visible. Finding that the smoke became daily

* Owing to the complexity of the figure at the southern end of the Singi Meridional Series, it was considered desirable to reject the observations on the ray Karanja-Kámandrug, so that the Series now terminates on the single side Singi-Párner of the Bombay Longitudinal Series.

denser and that the haze and fog from the sea seemed to be gradually increasing, Rivers quitted Párnera after a halt of three weeks without finishing his observations. As the season was now well advanced he thought it better to waste no more time in the low lands on the coast, but to proceed to the stations on the line of the ghâts which he hoped were at too high an altitude to be affected by the atmospheric density of the plains: he therefore entered the hills, and commenced observing from mountain tops: but the work even now was most unsatisfactory for not only was the heliotrope at Surat completely obscured by the smoke and haze on the plains, but even the few hill stations, that were mutually visible, were so foggy and indistinct, that all the observations taken were of but little value. At his last Hill Station of Raura all the heliotropes were visible except the one at Párnera, which lay very low and in the thickest part of the smoke. It was useless to continue working under such circumstances, as the smoke and haze were known to gradually increase without intermission till the commencement of the rainy season, and so towards the end of March Rivers set out for Poona: the movements of the party were greatly hampered by the large percentage of sick: two out of the three sub-assistants, the hospital-assistant, and 20 men were all down with fever at Párnera, and at Raura Rivers himself succumbed. During the recess season the observations taken in the latter half of February and in March were found to yield such poor results that the stations of Raura and Rupgarh had to be cut out from the principal series and incorporated as secondary points.

In November, 1843, Lieutenant Rivers was deputed to take up the triangulation of the South Konkan Coast Series, and consequently no observations were taken during the winter of 1843-44 upon the Series under review. Mr. DaCosta was, however, despatched in December to Surat and instructed to carry on the approximate work northward: it is fatal, we have now learnt, to enter the jungles of this neighbourhood before the end of February, and every party that has ever attempted to work here in the winter months has failed. Mr. DaCosta and his men were no more successful than others, and they had not been in the Surat districts three weeks before they were all without exception severely attacked by fever. Mr. DaCosta strove hard to carry out the work that had been entrusted to him, and it was long before he would retreat from the jungles, but he eventually became so crippled with illness that he had to move into Surat: by March he had sufficiently recovered to take the field again, and the jungles had now become fairly healthy, but the season of haze and smoke had re-commenced and nothing in the way of approximate work was feasible. Lieut. Rivers himself had reached Poona from the Southern Konkan on March 5th, and left it for Surat on March 14th; his intentions were to visit the unfinished stations of the former season and to complete the observations of those few angles, that had only been partially observed: he seems to have thought that the haze and smoke of the preceding year had been of abnormal density and were not likely to be met with again to such an extent. He had no sooner arrived at Párnera than he found out his mistake: the density of the atmosphere was just the same as when he was here before; he remained now three weeks but never succeeded once in obtaining a glimpse of a single heliotrope: on April 9th he set out for Mahábaleshvar, where he had established his recess quarters.

Season 1844-45.

PERSONNEL.

Lieutenant H. Rivers, Bombay Engineers, 2nd Assistant, G. T. Survey.
Mr. J. Fraser, Sub-Assistant, 1st Class.
„ T. Sanger, „ „
„ J. DaCosta, „ 2nd „

In October, 1844, Messrs. Fraser and Sanger were again despatched to Párner in the hopes that with their greatly increased experience of the country they would now succeed in carrying the approximate series northward through the Gáikwár's dominions: fresh obstacles however arose, which had not been foreseen. The inhabitants threw every impediment in the way of the surveyors: the *patels* (headmen) of the villages refused to supply them with food or forage: the owners of the land forbade the erection of signals, and the guards of the forts, which were generally situated on natural prominences, refused admittance to any one connected with the Survey party: in many instances bodies of signalmen were beaten and otherwise maltreated. The British Resident at the Court of the Gáikwár was appealed to in vain for assistance; he apparently possessed no influence and was unwilling to move in the matter. His Highness himself was convinced that the two Englishmen were not traversing his dominions for the sole purpose of looking through a small telescope, and his inability to discover their ulterior designs greatly irritated him. His repeated refusals to help them, are clear evidence that he approved if he did not encourge the malevolence of his subjects: when at last at the request of the Bombay Government he did put forth his authority, all vexatious hindrances ceased and the progress of the survey was nowhere impeded. A month's work however had been lost.

Rivers left Poona at the same time as his assistants and proceeded to Mirya a principal station of the South Konkan Coast Series, where he took a complete set of astronomical observations for the direct determination of azimuth: he then set out for Párnera, which he reached on November 7th. The atmosphere was now clear and all the heliotropes were visible, but it was the malarious season: Mr. Fraser's party had been attacked with fever almost as soon as they had arrived, and the percentage of their sick had steadily increased week by week. Though Mr. Fraser himself had been among the first to succumb, and was labouring under severe illness for the greater part of the time, he succeeded before Christmas in selecting two good quadrilaterals to the northward. By the first of January to such an extent had the ravages of the disease spread that not a single man of his detachment remained unscathed. Lieutenant Rivers's contingent fared no better; within six weeks of their arrival nine-tenths of their number were in hospital, and before the year 1845 had fairly commenced the whole party were crippled. Rivers completed the observations of the two angles at Párnera, and then proceeded southwards to the Gambírgarh and Kalsubai stations at which five angles had to be remeasured owing to the poor results of the former season having been rejected: so much was he delayed by illness and hampered by the number of sick that the measurement of these six angles was all he succeeded in doing throughout November and December. What was worse he had but slight prospects of improving upon this rate of progress in the future: the fever as yet had shewn no signs of abating, the natives he had newly enrolled to replace those disabled by sickness had almost to a man succumbed to the disease, and several deaths had occurred in his party. Every day too brought the smoky season nearer, and he had learnt full well by this time that any work

to be done must be done before then. In this dilemma Rivers took a step on his own responsibility, that was severely censured afterwards by Sir Andrew Waugh: he decided that no triangulation to the north of Surat could possibly be carried out, and so determined to abandon all idea of it and to make no further attempt: in its stead he commenced widening his short chain of single triangles that stood completed between Singi and Párnera by adding on another similar chain along its eastern flank: his work thus lost the character of a meridional series and assumed that of a network. During January he observed at Párner and Hewargaon; during February he completed the observations at Hewargaon and at Kalsubai, Sinnar, and Bhorgarh, and during March at Ankai and Sáler: at the last-named station observations were taken to Polaris for the direct determination of azimuth. Pilwa was completed and Tarbhán was reached before the end of the season, but the work at the latter could not be completed: the haze had set in and hills but 15 miles distant were invisible: the heliotrope at Dopári was obscured and nothing was seen of the huge fire that was lighted there nightly which, it was hoped, would serve as a signal. Upon the return of the party to their recess quarters in Poona, Mr. Fraser was for some days the only man sufficiently free from fever to be able to attend office, whilst the condition of the signalmen and menials seems to have been lamentable. Towards the end of the recess season Lieutenant Rivers asked to be allowed to again attack the Singi Series, but permission was refused. Sir Andrew Waugh was unwilling to expose his assistant for two consecutive years to such a pestilential climate as that of the Surat districts, and insisted on giving him a turn in some more healthy tract. Rivers and his party were accordingly directed to discontinue work on the Singi meridian and to take up instead the triangulation of the neighbouring series, known as the Khánpisura Meridional.

In October, 1845, when marching from Poona to the scene of his new work, he visited Singi *en route*, and observed there the angles between Párner and Hewargaon and between Hewargaon and Kalsubai, both of which had been omitted in the previous season, when the doubling of the original Singi chain was undertaken: he was occupied by this four days and then left for Khánpisura. Towards the end of February, 1846, Rivers took advantage of an opportunity that occurred to visit Dopári where three angles had to be observed: the measurement of these formed the last occasion that he was employed on the Singi Meridional Series. The great compound figure, the largest by far in the whole triangulation of India, now stood completed with the exception of the one angle at Tarbhán between Dopári and Pilwa.

The instrument employed by Lieutenant Rivers on the Singi Meridional Series was the same 15-inch Theodolite by Dollond* that was used in the observations of the Bombay Longitudinal and South Konkan Coast Series. It was constructed on a design and under the direction of Captain Kater, and possessed, like all Dollond's instruments, a very fine telescope: but the horizontal circle was one of the first that had ever been engine-divided and

* For a full description of the instrument and its performances see Appendix No. 2 of Volume II of the *Account of the Operations of the Great Trigonometrical Survey of India.*

proved of an inferior order, giving angles differing to the extent of 13″ on different parts of the limb. The microscopes too were not adjustable for "run", and corrections varying with the temperature had therefore to be applied to the recorded readings of the angles. The method of changing zero pursued by Lieutenant Rivers gave readings at every 20° of the limb instead of at every 10° according to the recognised system in force in the G. T. Survey, a deviation from established practice which resulted in a much larger triangular error than that which obtained with the same instrument on the Bombay Longitudinal Series.

The triangulation of the Singi Meridional Series, after Lieutenant Rivers gave it up in 1845, remained in abeyance for upwards of 15 years when work was resumed on it by Lieutenant (now Major-General) C. T. Haig of the Bombay Engineers, the present Deputy Surveyor General in charge of Trigonometrical Surveys.

Lieutenant Haig first arrived in India in July, 1856, and served with the Bombay Sappers and Miners in the Persian War of 1856-57, and with the Rajputana (Rájputána) Field Force during the mutiny as Staff Officer of Engineers. He was appointed a Second Assistant in the Great Trigonometrical Survey in September, 1859, and joined the Bombay Triangulation Party at Rájkot a few weeks later. This Party had been employed for some years under Captain Nasmyth of the Bombay Engineers on the Káthiáwár (Káthiávád) triangulation, their recess quarters being at Rájkot. On arrival there Lieutenant Haig found orders awaiting him to join the Okhámandal Field Force with which Captain Nasmyth was also serving, and for the next two months both officers were employed as military engineers at the siege of Dwárka. On the fall of that place in December, 1859, they rejoined the Bombay Survey Party in Káthiáwár, where they remained for the rest of the winter. On March 10th, 1860, Captain Nasmyth proceeded on furlough and Lieutenant Haig assumed charge of the Party: work was continued in Káthiáwár till April 25th, when the field season was brought to a close: the Party marched to their recess quarters at Rájkot, where they remained during the summer under Mr. DaCosta, whilst Lieutenant Haig joined Major J. T. Walker's Party at Murree (Marri). The programme of work laid down for the Bombay Party during the field season of 1860-61 was to take up the Guzerat Longitudinal Series at the side Wardhari–Ghoráráo, carry it eastward until it met the Khánpisura Meridional Series, and then to return and work southwards from a side of this new work down the meridian of 73½° to meet Rivers's portion of the so-called North Konkan Series*.

Season 1860-61.

PERSONNEL.

Lieutenant C. T. Haig, Bombay Engineers, 2nd Assistant.
Mr. J. DaCosta, Civil 2nd Assistant.
„ J. Mc Gill, Senior Sub-Assistant.
„ G. A. Anding, 3rd Class Sub-Assistant.

The head-quarters of the Party quitted Rájkot on November 15th, 1860, and reached Wardhari on the 30th. Mr. Mc Gill had taken the field about a month previously to lay out the approximate work: the stations of Játhrábhor, Kágarol and Rencha, which are situated at the junction of the Singi and Guzerat Series had been selected several years previously. Up to the end of December, 1860, Mr. DaCosta was employed on the Káthiáwár triangulation: he then left for the Deccan to take up the approximate

* The Instrument to be used was the Theodolite known in this Department as Troughton and Simms' 18-inch No. 2. For a description of it, see Appendix No. 2 of Volume II of the *Account of the Operations of the Great Trigonometrical Survey of India.*

work of the Mangalore (Mangalúr) Meridional Series, on which he remained employed till the close of the field season. At the beginning of the season the progress of the Party met with some serious checks: in the approximate chart furnished to Lieutenant Haig the ray between Játhrábhor and Ghoráráo was laid down, but after several days had been spent in felling trees it was found to be impracticable. Another delay was caused by a mistake of the mason; instead of repairing the old Rencha station, he built a new station at another village also called Rencha, and the signalman shewed his heliotrope to Ghoráráo from this latter. Lieutenant Haig himself too went to this new station and did not find out his mistake until he had put up his instrument.

On arriving at Bhor Lieutenant Haig found the ray Bhor–Patángri impossible owing to a large hill intervening: having observed all the other rays he went to Patángri and selected a new station there: whilst the pillar was being built he visited Játhrábhor and Kágarol; and then went back to Ghoráráo and observed there the correct ray to Rencha: Kágarol, Patángri, and Bhor were then revisited and on January 20th, 1861, the Kágarol Hexagon at the junction of the two Principal Series was finished.

In the meanwhile Mr. McGill had been carrying the approximate series southwards on the Singi meridian: his progress was excellent until he reached Kesarwa, when he and all his Party were prostrated with jungle fever: he had to retire to Broach (Bharúch) and was unable to resume his work during the field season. Mr. McGill's absence necessitated a change of programme, as he was the only officer available for the approximate work: he had trusted to be able to select all the stations of the Singi Series and to also get well on with the approximate work of the Guzerat Longitudinal Series to the east of the Singi meridian before Lieutenant Haig had finished the observations of the Kágarol Hexagon*, and this he would have done, if all had gone right. As it was, Lieutenant Haig found no approximate work ready for him on the Guzerat Longitudinal Series; his first idea now was to select his stations himself, as well as observe the angles, and this he began doing: but his progress proved so slow, that towards the end of January he gave it up and returned to Bhor with the object of observing at the stations of the new Meridional Series already selected: the observations at Kandálwa, Páwágarh, and Masábár were taken without difficulty, and Karáli was reached on February 6th: the atmosphere now became hazy and dense, and smoke began to rise from the jungles. The ray Karáli–Kesarwa had to be rejected, as after it had been observed on three pairs of zeros the heliotrope at Kesarwa became invisible. The Sidpur ray from Karáli was very difficult of observation, and detained the Party a week. At Sidpur itself, which is situated in the Rájpipla state in the very heart of the smoky area, there was a further delay of ten days owing to the difficulty of observing the Bábásiráj heliotrope, and the station of Kesarwa was not reached till February 28th: it was here that Mr. McGill had been taken ill and consequently no approximate work existed beyond.

The stations of Bábásiráj, Kesarwa and Páthal had been selected in 1845 by Lieutenant Rivers and had been intended by him to form with Dopári a huge quadrilateral. As

* The Kágarol Hexagon appertained originally to the Guzerat Longitudinal Series, but it was found convenient afterwards to include it in the Singi Meridional Series.

however the rays Dopári–Kesarwa, Dopári–Bábásiráj and Páthal–Bábásiráj were all over fifty miles in length, Lieutenant Haig did not attempt to observe them and abandoned his predecessor's quadrilateral as impracticable. The selection of smaller figures proved a difficult matter owing to the intervention of high hills, on which no points could be discovered that gave suitable triangles: the stations of Ságbára and Álamwári were the best that could be found in spite of the invisibility of the latter from Páthal. By the time that all the stations had been decided on, the smoky season had commenced in good earnest and progress was naturally slow. At Ságbára the Páthal ray alone occupied fifteen days and Álamwári was not reached till April 5th. Three weeks later however all the angles at Páthal and Álamwári as well as those that had been omitted by Lieutenant Rivers at Dopári and Tarbhán* had been observed, and the connection with the old work of 1845 thus stood thoroughly completed. The Singi Series had at last been carried through the difficult and fever-stricken tracts of the Rájpipla state that had so baffled the efforts of the earlier surveyors. Lieutenant Haig's party had by no means got off scot free: at Kesarwa no less than 60 per cent of his men were on the sick-list, and by the close of the season there was hardly a native in the party who had not at one time or another been a sufferer. The jungles in this tract seem absolutely fatal to enter before the middle of February, and Mr. McGill made a great mistake in trying to penetrate them in December: there is a local proverb in these parts to the effect that the Dáng jungles should be feared like a musket ball, a proverb that testifies as much to the martial ardour of the people as it does to the unhealthiness of the forests.

Season 1861-62.

PERSONNEL.

Lieutenant C. T. Haig, Bombay Engineers, 1st Assistant.
Mr. J. DaCosta, Civil 2nd Assistant.
" J. McGill, Junior Civil 2nd Assistant.
" G. A. Anding, 3rd Class Sub-Assistant.

The Bombay Party under Lieutenant Haig passed the recess season of 1861 at Poona and in October following again took the field. The first stations visited were Játhrábhor and Patángri of the Singi Meridional Series, and an attempt was made to prolong the Guzerat Longitudinal Series eastwards from the side that joined them. The plan however was found impracticable and the side Patángri–Bhor had to be substituted. At starting Lieutenant Haig himself took up the approximate work of the Guzerat Longitudinal Series and carried it eastwards to the meridian of $74\frac{1}{2}°$: he here left it in charge of Mr. McGill and returned to Patángri to observe δ Ursæ Minoris for azimuth. Shortly after Christmas he commenced the final observations of the angles of the Guzerat Longitudinal Series, and these occupied the Head Quarters of the Party up to the end of February.

Mr. DaCosta in the meantime had selected the stations of the Guzerat Coast Minor Series between Surat and Cambay (Khambhat) as well as of a branch series to Baroda (Vadodra), and had taken up by the first week in January the approximate work of the Oodeypur Meridional Series: (this latter series as has been mentioned before lost its designation of Oodeypur in 1884 and now constitutes the northern section of the Singi Meridional Series). In selecting his stations Mr. DaCosta worked northwards from the side Játhrábhor–Patángri of the Kágarol Hexagon, laying out only a single series of triangles.

* The side that was common to both Rivers' and Haig's work was Tarbhán–Dopári: at Tarbhán the angle Pilwa–Tarbhán–Dopári seems never to have been observed: Haig observed the northern angle Páthal–Tarbhán–Dopári, whilst Rivers observed the whole angle Pilwa–Tarbhán–Páthal: the southern angle Pilwa–Tarbhán–Dopári was deduced from the other two.

By the end of February Mr. McGill had completed his approximate work on the Guzerat Longitudinal Series and was ordered by Lieutenant Haig to assist in selecting stations for the Series on the Oodeypur meridian: he was however not to work with Mr. DaCosta but to start from a side of the Karáchi Longitudinal Series and proceed southwards: the two surveyors were directed to keep each other thoroughly acquainted with their movements, so that they might have no difficulty in effecting a junction between their two approximate series whenever they should happen to meet. Unfortunately the country through which this series runs is inhabited by semi-barbarous races: the thieves, who form a large and recognised portion of the inhabitants of every village, assault a man for the sake of the clothes he has on his back; and if he attempts to escape bring him down with a shower of arrows utterly regardless of his life: on this account communication was attended with great risk and consequently Messrs. DaCosta and McGill were each in ignorance of the other's progress until they actually met: the bend in the Series in latitude 23° 45′ is due to their inability to work in conjunction.

Mr. McGill intended to have commenced on the side Lakarwás–Bonkalore, with which Sísa and Salúmbar were to have formed a quadrilateral, but the Rája of Salúmbar, a very refractory chief, would not permit a station to be built on his hill, although directed to do so by the Political Agent: Mr. McGill had therefore to start the approximate series from the radial side Tána–Lakarwás of the Tána Hexagon.

Having completed the Guzerat Longitudinal Series, Lieutenant Haig marched northwards to Lakarwás, which he reached by the 10th of March: he was here delayed a few days by fog but after this no further interruption occurred, and he completed the final observations of the Oodeypur Meridional Series on April 25th: he had thus visited 15 stations and observed 34 angles in six weeks. A chain of single triangles now connected the Karáchi and Guzerat Longitudinal Series and the triangulation of the Singi Meridional Series stood fully completed. The head-quarters of the Party reached Poona on the 7th of May, 1862.

In consequence of the great deficiency of observations on certain rays, and of the weak character of the heights in general, the re-measurement of all the vertical angles of Rivers's section of the Singi Series was found necessary. Mr. H. E. T. Keelan, Surveyor 3rd Grade, who was then engaged in revising the heights on the Khánpisura Meridional Series, was accordingly directed to re-take the vertical observations on all rays of the Singi Series south of the side Tarbhán–Dopári. Mr. Keelan completed the revision of the Khánpisura heights on December 9th, 1884, at Jalálabad; he was then occupied some weeks in observing the vertical angles on the ray Ágargaon–Párner of the Bombay Longitudinal Series, and on January 8th, 1885, at Párner he commenced observing the Singi vertical angles: much difficulty was at times experienced in obtaining good vision of the heliotropes owing to the dense haze that set in early in February, but in spite of this Dopári was reached on April 13th. The revision of heights was completed at Bhorgarh on May 13th.

Secondary Triangulation.

On the Southern Section of the Series between the side Tarbhán–Dopári and the Bombay Longitudinal Series some hundred secondary points exist, chiefly pagodas and forts. Several of them were stations of Shortrede's Bombay network, but the angles were all re-observed by Rivers. Between the side Tarbhán–Dopári and the Guzerat Longitudinal Series only 20 secondary points were fixed by Lieutenant Haig during the progress of the principal work in 1860-61. In the following year however Mr. DaCosta visited the stations of Páwágarh and Masábár, and managed from them by means of two triangles only to lay down the position of the Baroda Clock Tower.

A few secondary triangles were formed with sides of the Kágarol Hexagon as bases and some 10 points thus fixed. On the Oodeypur Section of the Singi Series between the Guzerat and Karáchi Longitudinal Series the positions of a few trees, temples and huts were determined, but, with the exception perhaps of the Bánswára Palace, no place or town of importance was laid down.

The great feature in the secondary work of the Singi Series is the minor triangulation on the Guzerat Coast, which was first commenced in November, 1861, when Mr. DaCosta took up the approximate work. He started from the side Tarbhán–Páthal of the Singi Series and carried a line of single triangles northwards along the coast until he effected a junction with the Sábarmati Minor Series* at the side Rhoni–Omliála in latitude 22½°. The approximate work was all completed by the end of December, but the final observations had to be postponed till the following year. The country over which the triangulation was to pass was studded with valuable fruit trees, and exorbitant compensation was demanded by the landowners before they would permit even a bough to be lopped off. It unfortunately happened too that Mr. DaCosta could find no natural eminences for his stations, and an immense deal of ray-cutting was necessary to obtain mutual visibility. The Guzerat Coast Series was unquestionably a work of more than ordinary importance, filling up as it did the only gap of unsurveyed coast between the mouth of the Indus and Goa (Gova), but the estimated cost was so enormous, that Lieutenant Haig decided to postpone the work and refer the matter to the consideration of the Superintendent of the Great Trigonometrical Survey. Sanction to spend the necessary money was obtained in the following summer, and in November 1862 the final operations were commenced. Three months were occupied in clearing the rays, and building the stations, and on January 27th the observations of the angles were begun. The instrument used was a 12-inch Theodolite by Troughton and Simms, and the angles were all taken on two pairs of zeros 0°, 180°, 30°, 210°, the three angles of every triangle being observed. The series which comprises twenty-eight main secondary triangles was completed on the 23rd of March. It determines the geographical positions of Surat, Broach and Cambay, of ten minor towns and ports, and of several conspicuous hills and buildings which proved useful in the subsequent topographical survey of the tracts; it crosses the Tápti, Narbada, Mahi, Kím, and Dhádhar rivers.

* This series belongs to the Guzerat Longitudinal Series, from a side of which, Sánand–Pálri, it originates: it follows the course of the Sábarmati river to its mouth.

Early in the season of 1861-62 when Mr. DaCosta was engaged on the approximate work of the Guzerat Coast Series, he selected the stations for a branch series, which was to be carried eastwards from the Guzerat Coast Triangulation to fix Baroda: as much clearing was however necessary on the rays of this branch, and great expense would be incurred, the plan was abandoned, and no observations taken. Baroda was afterwards fixed as has been mentioned above by triangles carried westward from a principal side of the Singi Meridional Series.

January, 1889.

S. G. BURRARD,
In charge Computing Office.

SINGI MERIDIONAL SERIES.

PRINCIPAL TRIANGULATION. ALPHABETICAL LIST OF STATIONS.

The orthography of the names in columns 1 and 4 is based, as far as practicable, on the pamphlet of ames entitled *Bombay Places and Common Official Words* (1879) and on the list of *Spelling of Names in Rajutana* (1877). As some of the names have thus been considerably altered, it has been thought advisable for asy reference and identification to give in columns 2 and 5 the spellings employed in the original angle books. 'he orthography in columns 1 and 4 is hereafter only employed in this volume.

Orthography		Number	Orthography		Number
Adopted	From Original Angle Books		Adopted	From Original Angle Books	
Álamvádi	Alamuari	XXVII	Kalsúbái	Kalsubai	XXXIX
Ámjio	Amjah	VII	Kámandurg	Kamandrug	XL
Anjini	Anjeni	I	Kandálva	Kandalwa	XIX
Ankai Tankai	Ankai	XXXV	Karáli	Kalali	XXII
Bábásiráj	Babaseraj	XXIV	Kesarva	Kesurwa	XXV
Bhor	Bhore	XVII	Kua	Kuah	VIII
Bhorgad	Bhorgarh	XXXIV	Lakarwás	Lakarwas	XXXII*
Deokotla	Deokotla	IX	Lohária	Loharia	VI
Dopári	Dopari	XXIX	Masábár	Masabar	XXI
Dúngarpur	Dongerpur	IV	Párner	Parner	XXVI†
Gambhirgad	Gambirgarh	XXXVI	Párnera	Parnera	XXXIII
Ghoráráo	Ghorarao	XVI	Patángdi	Patangri	XIII
Hevargaon	Hewargaon	XXXVIII	Páthal	Pathal	XXVIII
Jathrabhor	Jathriabore	XII	Pávágad	Powagarh	XX
Kágarol	Kagarol	XIV	Pilva	Pilwa	XXXI

* Of the Karáchi Longitudinal Series. † Of the Bombay Longitudinal Series.

PRINCIPAL TRIANGULATION. ALPHABETICAL LIST OF STATIONS—(*Continued*).

Orthography		Number	Orthography		Number
Adopted	From Original Angle Books		Adopted	From Original Angle Books	
Richbia	Reincha	XVIII	Sísa	Sisa	II
Ságbára	Sakbara	XXVI	Tána	Tana	XXIX†
Sagwára	Sagwara	V	Tarbhán	Tarbon	XXX
Sáler	Saler	XXXII	Tembla	Taimbla	X
Sidhpur	Sidpur	XXIII	Tukwása	Tokwasa	III
Singi	Singi	XXX*	Uchak	Uchak	XI
Sinnar	Sinner	XXXVII	Vardhari	Wardhari	XV

* Of the Bombay Longitudinal Series. † Of the Karáchi Longitudinal Series.

SINGI MERIDIONAL SERIES.

PRINCIPAL TRIANGULATION. NUMERICAL LIST OF STATIONS.

XXIX (Of the Karáchi Longitudinal Series).	Tána.	XIV	Kágarol.
XXXII (Of the Karáchi Longitudinal Series).	Lakarwás.	XV	Vardhari.
I	Anjini.	XVI	Ghoráráo.
II	Sísa.	XVII	Bhor.
III	Tukwása.	XVIII	Richhia.
IV	Dúngarpur.	XIX	Kandálva.
V	Sagwára.	XX	Pávágad.
VI	Lohária.	XXI	Masábár.
VII	Ámjio.	XXII	Karáli.
VIII	Kua.	XXIII	Sidhpur.
IX	Deokotla.	XXIV	Bábásiráj.
X	Tembla.	XXV	Kesarva.
XI	Uchak.	XXVI	Ságbára.
XII	Jathrabhor.	XXVII	Álamvádi.
XIII	Patángdi.	XXVIII	Páthal.

PRINCIPAL TRIANGULATION. NUMERICAL LIST OF STATIONS—(*Continued*).

XXIX	Dopári.	XXXVI	Gambhirgad.
XXX	Tarbhán	XXXVII	Sinnar.
XXXI	Pilva.	XXXVIII	Hevargaon.
XXXII	Sáler.	XXXIX	Kalsúbái.
XXXIII	Párnera.	XL	Kámandurg.
XXXIV	Bhorgad.	XXVI (Of the Bombay Longitudinal Series.)	Párner.
XXXV	Ankai Tankai.	XXX (Of the Bombay Longitudinal Series.)	Singi.

SINGI MERIDIONAL SERIES.

DESCRIPTION OF PRINCIPAL STATIONS.

All the Principal Stations of this Series are situated on hills or rising ground: those numbered I to XVI and XVIII to XXVII, consist of circular, isolated and perforated pillars of masonry, 2 to 6 feet in height, each of which carries mark-stones at top and at ground level. Around these pillars, and level with their summits, platforms of earth and rubble have been constructed for the accommodation of the observatory tent. An aperture through the platform and pillar was specially left for reference to the ground level mark at each station. At Station XVII there is only one mark engraved on the rock *in sitû*. The two stations of the Karáchi Longitudinal Series from which this triangulation emanates, have solid pillars of masonry, surrounded by platforms of stones: the pillars carry mark-stones at top, bottom and intermediately. The remaining stations of this Series together with the two of the Bombay Longitudinal Series on which this triangulation terminates, were constructed under the direction of Lieutenant Rivers, and were denoted in general by one or more mark-stones sunk in the ground or set in masonry, the upper mark being about the ground level. Above these, solid structures of loose stone, about 1 to 4 feet in height, were erected with another mark-stone laid at the surface.

The following descriptions have been compiled from those given by the Officers who executed the Series, supplemented as regards adjacent villages, &c., from the Topographical Survey maps of the country traversed. Some details regarding the heights and the construction of the stations have been gathered from Annual Reports, contingent bills, and other records of the Series, but in several instances the information required is unavoidably meagre or is even wholly absent, because no record of the facts now wanted for incorporation appears to have been kept by the Executive Officers. The local sub-divisions in which the several stations are situated, have been derived, when practicable, from the latest Annual Reports furnished by the district officers to whose charge the stations are committed.

XXIX.—(*Of the Karáchi Longitudinal Series*). Tána Hill Station, lat. 24° 43′, long. 74° 14′—observed at in 1851 and 1862—is situated on the highest point of a well-known, isolated hill, about a mile W. of the road from Akola to Tána. The station platform is built near and to the south of the site of some ruined buildings upon which there are now a few sacred stones: estate of the Tána Ráj, under the Meywar (Mewár) Residency.

The station of 1851 consists of a platform of the usual construction, 2·53 feet in height, enclosing a solid, isolated pillar of masonry in which are placed three mark-stones, one at top, another at the level of the foundation, and the third 2 feet above the latter. It was visited in 1862 in the course of the Singi Meridional Series operations, but no statement of its condition or of any alteration then made is forthcoming. The directions and distances of the circumjacent villages are:—Tána S.S.E., miles $1\frac{3}{4}$; Intáli S.W. by W., miles $4\frac{1}{3}$; Daulatpur W., mile 1; Raepuria N.E., miles $2\frac{3}{4}$; and Kanerkhera E.N.E., mile $\frac{3}{4}$.

XXXII.—(*Of the Karáchi Longitudinal Series*). Lakarwás Hill Station, lat. 24° 32′, long. 73° 52′—observed at in 1851 and 1862—is situated on the range of hills forming the eastern defence of the city of Oodeypore (Udaipur), about $1\frac{1}{2}$ miles S.E. by S. of the large village of Lakarwás on a road from Kánpur to Korábar, which crosses the range to the north, and 2 miles S. of the ruined gate called "Sejah-ka-Darwáza" which is one of the approaches to Oodeypore. The station is in the lands of the village of Lakarwás, zilla Girwa, tahsíl Oodeypore, under the Meywar Residency.

The station of 1851 consists of a platform of the usual construction, 2·80 feet in height, enclosing a solid, isolated pillar of masonry which contains three mark-stones, one at the surface, the second 1 foot below and the third at the level of the foundation. It was visited in 1862 in the course of the Singi Meridional Series operations, but no statement of its condition or of any alteration then made is forthcoming. The directions and distances of the circumjacent villages are:—Karget N.E. by N., miles 2¼; Dhámdar S., miles 2; Umra W. by S., miles 2¾; and Maton N.W., miles 3.

I. Anjini Hill Station, lat. 24° 15′, long. 74° 11′—observed at in 1862—is situated on a high hill named Anjini Máta, about ½ a mile S. of the southernmost part of the scattered village of Anjini, and 4 miles E. by N. of Karauli which is 6½ miles N. by E. of the town of Salúmbar. The platform is a few feet east of the portion of the hill dedicated to the Máta (goddess). The station is in the lands of the village of Anjini belonging to the Salúmbar Ráo.

The station consists of a platform of earth and rubble enclosing an isolated and perforated pillar of masonry, 3·06 feet in height: an aperture gives access to the lower mark. The directions and distances of the circumjacent villages are:—Birirokhera S.S.E., miles 2½; Kánpur W. by S., miles 2¾; Urwária W. by N., miles 3¾; and Taláo N.W. by N., miles 2½.

II. Sísa Hill Station, lat. 24° 12′, long. 73° 46′—observed at in 1862—is situated on the southern extremity of a hill locally known as Sísa Magra, about a mile N.E. by E. of the Parshád Dâk Bungalow on the high road from Kherwára to Oodeypore. The ascent to the station commences from the western side, and is very steep. The station is in the lands of the village of Parshád, territory of the Rána of Oodeypore.

The station consists of a platform of earth and rubble enclosing an isolated and perforated pillar of masonry, 4·37 feet in height, with mark-stones at top and bottom: an aperture gives access to the lower mark.

III. Tukwása Hill Station, lat. 23° 56′, long. 74° 6′—observed at in 1862—is situated on a hill locally known as Túnk-ka-Magra having the village of Tukwása at its northern foot, and about 1¾ miles S.W. by W. of the town of Áspur. The station is in the lands of the village of Tukwása, Dúngarpur state.

The station consists of a platform of earth and rubble enclosing an isolated and perforated pillar of masonry, 4·94 feet in height, with mark-stones at top and bottom: an aperture gives access to the lower mark. The directions and distances of the circumjacent villages are:—Gara (Moriána) E. by S., miles 1½; Wásúndar S.W. by S., mile ¾; Sakáni W., miles 3½; and Amartia N.N.W., miles 2.

IV. Dúngarpur Hill Station, lat. 23° 50′, long. 73° 45′—observed at in 1862—is situated on the northern tower of some old fortifications on a hill locally known as Dún-ka-Magra, close to and immediately south of the palace and town of Dúngarpur. The station is in the lands of the town of Dúngarpur, Dúngarpur state.

The station consists of a platform of earth and rubble enclosing an isolated and perforated pillar of masonry, 3·58 feet in height, with mark-stones at top and bottom: an aperture gives access to the lower mark.

V. Sagwára Hill Station, lat. 23° 41′, long. 74° 2′—observed at in 1862—locally known as Naia Magra, is situated on a hill about 1¾ miles N.W. of the town of Sagwára. The foot-path leading to the station commences from the south-east. The station is in the lands appertaining to Sagwára, Dúngarpur state.

The station consists of a platform of wood, earth and rubble enclosing an isolated and perforated pillar of masonry, 4·60 feet in height: an aperture gives access to the lower mark. The directions and distances of the circumjacent villages are:—Gamra N.E., miles 1¼; Madkola S. by E., miles 1¾; Gowári S. by W., miles 2; Udepur S.W. by S., miles 3; and Pádra N. by W., miles 2½.

VI. Lohária Hill Station, lat. 23° 46′, long. 74° 15′—observed at in 1862—is situated on a hill locally called Khanio, about ¾ of a mile W.N.W. of the large village so called, and 2½ miles S.S.E. of the Baneshwar temple situated on an island at the confluence of the Mahi and Som rivers. The ascent to the station commences from the east. The station is in the lands of the village of Lohária, thána Bánswára, territory of the Rája of Bánswára.

The station consists of a platform enclosing an isolated and perforated pillar of masonry, 2·75 feet in height above the lower mark which is engraved on a rock imbedded in the hill: an aperture gives access to the lower mark. The directions and distances of the circumjacent villages are:—Káli-ka-Pára N.E., miles 1½; Vichháwára E.N.E., miles 1¾; Pároda W. by S., miles 2¼; Wási W.N.W., mile ¾; and Karána N. by W., miles 1¼.

VII. Ámjio Hill Station, lat. 23° 32′, long. 74° 16′—observed at in 1862—is situated on a long, flat hill, about 1½ miles E.N.E. of the village so called, and 3½ miles N.W. by W. of Bodia which is 2 miles S.S.E. of

Partapor town. To the north and east, distant about a mile, are situated numerous Bhíl huts. The station is nearly on the centre of the hill but not on the highest part which is a little to the east and obstructs the view in that direction. The station is in the lands of the village of Ámjio, thána Bánswára, territory of the Rája of Bánswára.

The station consists of a platform of wood, earth and rubble enclosing an isolated and perforated pillar of masonry, 4 feet in height above the lower mark: an aperture gives access to the lower mark. The directions and distances of the circumjacent villages are:—Gamdi W.S.W., miles 2; Vakhatpur W., miles 3; Mándarda W.N.W., miles 2½; and Gara (Sujáji) N.N.W., miles 2.

VIII. Kua Hill Station, lat. 23° 29′, long. 73° 57′—observed at in 1862—is situated on a low hill forming part of a range running N.N.E. and S.S.W., about 1½ miles north of Kua village. The station is in the lands of the village of Kua, Dúngarpur state.

The station consists of a platform of wood, earth and rubble enclosing an isolated and perforated pillar of masonry, 4·95 feet in height, with mark-stones at top and bottom: an aperture gives access to the lower mark. The directions and distances of the circumjacent villages are:—Ganderi S.S.W., mile ¾; Sándela W. by S., miles 1⅓; and Hindura W.N.W., miles 2½.

IX. Deokotla Hill Station, lat. 23° 19′, long. 74° 12′—observed at in 1862—is situated on a conspicuous peak at the eastern end of a short range of hills running E. and W., about ⅛ of a mile S.W. of Deokotla village, and 2 miles S. by W. of the large village of Shergarh: territory of the Rája of Bánswára.

The station consists of a platform of wood, earth and rubble enclosing an isolated and perforated pillar of masonry, 5 feet in height: an aperture gives access to the lower mark. The directions and distances of the circumjacent villages are:—Tánda N. by E., miles 1½; Tejpur W.S.W., miles 3; and Phalwa (scattered huts) W., miles 4.

X. Tembla Hill Station, lat. 23° 15′, long. 73° 55′—observed at in 1862—is situated on the highest part of a range of low hills running N. and S., about ¾ of a mile W. by N. of Tembla village, and 3¾ miles N. of the town of Sunth. The station is in the lands of the village of Tembla, thána and state Sunth, Rewa Kántha (Revákántha) Agency.

The station consists of a platform 5 feet in height (most probably of the same construction as those at the adjacent stations) enclosing an isolated and perforated pillar of masonry, with mark-stones at top and bottom: an aperture gives access to the lower mark. The directions and distances of the circumjacent villages are:—Sagvária S.E. by E., mile 1; Páderim S.S.E., mile 1; Kureta S. by W., mile 1; Kerámul S. W. by S., miles 1½; and Nathukáka (hamlet) W., miles 1¾.

XI. Uchak Hill Station, lat. 23° 3′, long. 74° 4′—observed at in 1862—is situated on a hill locally so called, about 8¾ miles W.N.W. of the town of Limbdi on the main road from Godhra to Jhálod: Sanjeli estate, Rewa Kántha Agency.

The station consists of a platform of earth and rubble enclosing an isolated and perforated pillar of masonry, 5·15 feet in height: an aperture gives access to the lower mark. The directions and distances of the circumjacent hamlets are:—Kunda E.N.E., miles 1½; Dhálsimal N., mile 1; Patela N.W. by W., mile 1; and Doki S.W., mile 1.

XII. Jathrabhor Hill Station, lat. 23° 2′, long. 73° 43′—observed at in 1860-61 and 1862—is situated on a range of hills running S.W. by S. and N.E. by E., about 7½ miles S.E. by S. of the town of Lúnáváda, and 3⅔ miles N.E. by E. of Gamánbaria on the road from Lúnáváda to Godhra. It is in the lands of the village of Jathrabhor, thána Lúnáváda, Rewa Kántha Agency.

The station consists of a platform of earth and rubble enclosing a circular, isolated and perforated pillar of masonry, 5 feet in height: an aperture gives access to the lower mark. The directions and distances of the circumjacent villages are:—Boria N.W. by N., miles 1¼; Jathrabhor E., miles 1½; Khatukpur S.E. by S., miles 2¼; and Jodhpur S.S.W., miles 1¾.

XIII. Patángdi Hill Station, lat. 22° 52′, long. 73° 56′—observed at in 1861 and 1862—is situated on a high, flat-topped hill forming portion of a range, about ½ a mile S.S.E. of the village of Patángdi, and 5 miles N. by E. of Rebádi at the 17th milestone on the high road from the town and Railway Station of Godhra to Dohad. It is in the lands of the village of Patángdi, thána and state Báriya, Rewa Kántha Agency.

The station consists of a platform of earth and rubble enclosing a circular, isolated and perforated pillar of masonry, 2 feet in height, with mark-stones at top and bottom: an aperture gives access to the lower mark. The directions and distances of the circumjacent villages are:—Pála N., miles 2; Devi E.N.E., miles 1¾; Pasáyata E., miles 1½; Jamodra E.S.E., miles 2¼; Dhabuka S.E., mile ½; Navágám S.W., miles 2¼; and Mátadia Vejma N.W. by W., miles 1¾. There is a rejected station of this name on a hill to the west.

XIV. Kágarol Hill Station, lat. 22° 53′, long. 73° 42′—observed at in 1860-61—is situated on a low isolated hill at the southern end of a small group of hills; the hill is also known as Pipalia-ni-Dungri. The station

is about 8 miles N.N.E. of the town and Railway Station of Godhra of the B. B. and C. I. Line, and 1¾ miles N.N.W. of Dalváda at the junction of the roads from the town of Godhra, Páli and Lúnávada. It is in the lands of the village of Pipalia, sub-division Godhra, district Panch Mahals.

The station consists of a platform of earth and rubble enclosing a circular, isolated and perforated pillar of masonry, 5 feet in height: an aperture gives access to the lower mark. The directions and distances of the circumjacent villages are:—Pati (hamlet) N., miles 3; Vijápur N.N.E., miles 1¾; Navágám E.S.E., miles 1½; Sámpa S.E. by S., miles 2½; Mitháli S. by W., miles 2; and Dokva W.S.W., mile 1.

XV. Vardhari Hill Station, lat. 23° 6′, long. 73° 30′—observed at in 1860—is situated on one of the ranges of hills to E. of the large village of Vardhari, and 3 miles N. by E. of Chárangám village on the right bank of the Mahi river. It is in the lands of the village of Vardhari, thána Lúnávada, Rewa Kántha Agency.

The station consists of a platform of earth and rubble enclosing an isolated and perforated pillar of masonry, 5·83 feet in height: an aperture gives access to the lower mark. The directions and distances of the circumjacent villages are:—Jitpur N.E. by E., mile 1; Dhesia E. by S., mile 1; Ved N. by W., mile ⅔; Ratanpur S.W. by W., miles 2½; and Ghoram S.S.E., miles 2½.

XVI. Ghoráráo Hill Station, lat. 22° 52′, long. 73° 24′—observed at in 1859 and 1860—is situated on a ridge of hills, about 4⅓ miles N. by E. of Sevália Railway Station of the B. B. and C. I. Line, and 6 miles S. by E. of the town of Bálásinor (Vadashinor). It is in the lands of the village of Kuni, táluka Thásra, district Kaira (Kheda).

The station consists of a platform of earth and rubble enclosing a circular, isolated and perforated pillar of masonry, 5 feet in height: an aperture gives access to the lower mark. The directions and distances of the circumjacent villages are:—Kuni N.N.E., miles 1½; Parál W., miles 2½; Sonipur S., miles 2½; and Dhari Juni (on the right bank of the Mahi river) S.E., miles 2½.

XVII. Bhor Hill Station, lat. 22° 40′, long. 73° 52′—observed at in 1860-61 and 1862—is situated on the southern of two rocks on the hill of Bhálápur, about 1¼ miles E.N.E. of the small village of Bhor, and 6 miles S.W. by W. of the town of Báriya. It is in the lands of the village of Bhor, thána and state Báriya, Rewa Kántha Agency.

As regards the construction of the station, the following is all that is forthcoming:—"The platform for the observatory was made of bamboos resting on logs of wood fixed in the crevices of the rocks, and the mark is made on the rock." The directions and distances of the circumjacent villages are:—Gholáv N., miles 3; Kálidungri E.N.E., miles 1¾; Virol E. by S., miles 1¾; Kákalpur S. by W., miles 1½; and Khánpála W.N.W., miles 1¼.

XVIII. Richhia Hill Station, lat. 22° 42′, long. 73° 39′—observed at in 1860-61—is situated on a small isolated hill locally known as Vagh Dungar, about ⅛ of a mile S. of the village of Richhia, and 3¼ miles E. by N. of the large village of Vejalpur on the high road from Kálol to Godhra. It is in the lands of the village of Richhia, sub-division Kálol, district Panch Mahals.

The station consists of a platform of logs of wood, covered over with earth, enclosing a circular, isolated and perforated pillar of masonry, 5 feet in height, with marks at top and bottom: an aperture gives access to the lower mark which is cut on the rock *in situ*. The directions and distances of the circumjacent villages are:—Chaláli S.E., miles 2; Arádra S., miles 3½; Nadarkha W. by N., miles 2; and Thána N.E. by E., miles 1½.

XIX. Kandálva Hill Station, lat. 22° 28′, long. 73° 50′—observed at in 1861—is situated on a high range of hills of the same name, which runs E. and W., about 3 miles S.W. of the village of Puneh. The station is in the lands of the village of Kandálva, thána Karáli, Chhota Udepur state, Rewa Kántha Agency.

The station consists of a platform of earth and rubble enclosing an isolated and perforated pillar of masonry, 5 feet in height, with mark-stones at top and bottom: an aperture gives access to the lower mark.

XX. Pávágad Hill Station, lat. 22° 28′, long. 73° 33′—observed at in 1861—is situated on the second highest part of the well-known hill of this name, a few yards S. of a temple dedicated to the goddess Kálka Máta. The village of Chámpáner (which was once a flourishing town) is to N.E. from which the ascent to the station is by a path about 4 miles in length. The station is in the lands of the village of Chámpáner, sub-division Hálol, district Panch Mahals.

The station consists of a platform of earth and rubble enclosing an isolated and perforated pillar of masonry, 2 feet in height, with mark-stones at top and bottom: an aperture gives access to the lower mark.

XXI. Masábár Hill Station, lat. 22° 19′, long. 73° 45′—observed at in 1861—is on a peak of a high

and steep hill having the village of Masábár a short distance from its N.E. foot; the hill is locally known as Masábario Dungar and more commonly as Mahábár. The station is in the lands of the village of Masábár, sub-division Jámbughoda, district Panch Maháls.

The station consists of a platform of earth and rubble, 3 feet in height, enclosing an isolated and perforated pillar of masonry, and though no mention of any marks is made, it may be assumed that the usual mark-stones must have been inserted in the pillar as at the adjacent stations. The nearest villages are Khudsár, Duma and Pipia.

XXII. Karáli Hill Station, lat. 22° 10′, long. 73° 54′—observed at in 1861—is situated at the western summit of a short range of hills running E. and W., about a mile S.S.E. of Karáli village, and 2 miles N. of the village of Timarva Nava on the right bank of the Heran river. The station is in the lands of the village of Karáli, Chhota Udepur state, Rewa Kántha Agency.

The station consists of a platform of earth and rubble enclosing an isolated and perforated pillar of masonry, 5 feet in height, with an upper and a lower mark-stone: an aperture gives access to the lower mark. The directions and distances of the circumjacent villages are:—Karsan N.E. by N., miles 1¾; Gamária (hamlet) E. by S., miles 1½; Rundhi Juni S.S.E., mile 1; Pherkua S.W. by W., miles 2¾; Daulatpura W. by N., miles 1½; and Ghoraj N.W., miles 2.

XXIII. Sidhpur Station, lat. 22° 4′, long. 73° 31′—observed at in 1861—is situated on the western bank of the Orsang river, and about a mile S.S.E. of Sidhpur village and 8¾ miles S.W. by S. of Bahádarpur station on the Baroda State Railway: pargana Dabhoi, Gáikwár's territory.

The station consists of a platform of earth and rubble enclosing an isolated and perforated pillar of masonry, 4·83 feet in height, with mark-stones at top and bottom: an aperture gives access to the lower mark. When visited in season 1876-77 by Captain Baird, R.E., in the course of the Levelling operations, he found the station to consist of "a circular pillar 5 feet high over which is "a covering pillar 3½ feet high, the upper mark-stone of which was found intact". The directions and distances of the circumjacent villages are:—Kántoli N., mile 1; Bhiloria W., miles 1¼; Ásádara S.E. by S., miles 1¼; Akoti S.S.W., miles 1½; and Chanváda S.W., mile 1.

XXIV. Bábásiráj Hill Station, lat. 21° 47′, long. 73° 57′—observed at in 1861—is situated on the highest hill which has the hamlet of Amba at its eastern foot, and about 4¼ miles S. of Sinduri village on the left bank of the Narbada river: Mevás state of Káthi, district Khándesh.

No information whatever as regards the construction of this station is given in the records of this Series. The district officer reports that "There is no masonry pillar but only a platform 3½ feet in height". The directions and distances of the circumjacent villages are:—Nalvánbar N.E., miles 1½; Pimpalkhuta S.E., miles 2; Kevdi W.S.W., miles 2½; and Mográbári N., miles 2¼.

XXV. Kesarva Hill Station, lat. 21° 46′, long. 73° 26′—observed at in 1861—is on the summit of a high hill forming one of a range running W. and S., about 2¼ miles S.E. of the village so called. The station is in the lands of the village of Kesarva, thána Nándod of the Rájpipla state, Rewa Kántha Agency.

The station consists of a platform of bricks and mud cement enclosing an isolated and perforated pillar of masonry, 4 feet in height, with mark-stones at top and bottom: an aperture gives access to the lower mark. The directions and distances of the circumjacent villages are:—Gared (hamlet) N., miles 1¼; Chatváda N.E., miles 2; Handi Dhochki E. by N., miles 2; and Dabhál W. by N., miles 4½.

XXVI. Ságbára Hill Station, lat. 21° 34′, long. 73° 49′—observed at in 1861—is situated about 8 miles N. of the Tápti river, and some 12 miles N. by E. of a small fort of Vájpur on the right bank of the Tápti: thána Ságbára of the Rájpipla state, Rewa Kántha Agency.

No details of the construction of the station platform and pillar are forthcoming.

XXVII. Álamvádi Hill Station, lat. 21° 35′, long. 73° 33′—observed at in 1861—is about 8 miles N.W. of Báradev, and 10 miles E.S.E. of Netrang: Rájpipla state, Rewa Kántha Agency.

No details of the construction of the station platform and pillar are forthcoming.

XXVIII. Páthal Hill Station, lat. 21° 22′, long. 73° 17′—observed at in 1861—is situated on one of a group of hills called Khumbaria on the western skirts of the Dáng jungles, about 2 miles N.E. of the village so called, and 6 miles N.E. of Areth on the high road and at the 17th milestone from Kím to Mándvi. The station is in the lands of the village of Kálmoi, táluka Mándvi, district Surat.

The station was originally established in 1846. It was visited and repaired in 1861. When visited in 1863 it was described as follows:—"No pillar was built, a masonry platform, 1 foot in height, having the usual mark-stones in the foundation

"and on its surface, indicates the site of the station". The directions and distances of the circumjacent villages are:—Parvat E.N.E., miles 1¼; Regáma E. by S., miles 3; Kálmoi S. by W., mile ¾; and Lindia N.W., mile 1.

XXIX. Dopári Hill Station, lat. 21° 5′, long. 73° 46′—observed at in 1846 and 1861—is situated at the centre of a long ridge, and on the boundary between the Khándesh collectorate and the Songad táluka of Gáikwár's territory. A small village Bhoreh is about 2½ miles to N.E.

The station as originally built in 1846 is described as follows:—"A mark was made on the rock below and a platform "built up to the surface with another stone at top". When visited in 1861 it was repaired, but nothing exists to shew the state it was found in nor the repairs then effected. When visited in April 1885, the platform was found partly destroyed, but a mark 1 foot below the surface of the existing remains was found undisturbed; this mark is 0·8 of a foot below the surface of the hill. A scattered group of huts within a circle of a mile, lie 3 miles to S.W. The nearest centre is called Tarpára, ¼ of a mile further is Leotara, and at another ¼ of a mile lies Dhabda. About 6 miles S.W. by W. is the site called Mendha, and 7 miles S.W. is the Gáikwár thána of Saudervel.

XXX. Tarbhán Station, lat. 21° 1′, long. 73° 6′—observed at in 1845 and 1861—is situated on rising ground, about 3¼ miles S.S.W. of Sarbhon, and 1¼ miles S.E. of Párdi Vágha, both on the road from Navsári to the town of Bárdoli. The station is in the lands of the village of Sarbhon, táluka Bárdoli, district Surat.

The station as originally built in 1845 consisted of a platform enclosing a circular, isolated pillar of brick masonry "with three stones for the feet of the instrument and a central one for the mark. A second stone is at the surface of the ground "2·67 feet below this". When visited in 1861 it was repaired. It was again visited in April 1885 and found to be in good preservation. The directions and distances of the circumjacent villages are:—Tarbhán N., mile ¾; Varoli N.E. by N., miles 1¾; Kavita E.S.E., miles 1½; and Kharad S. by E., mile 1.

XXXI. Pilva Hill Station, lat. 20° 39′, long. 73° 26′—observed at in 1845—is situated on a hill so called, about 20 yards S. of a conspicuous tree. There are no villages near the station, a few scattered huts called Chauronia where a market is held every Sunday lie about a mile to S.W., and a similar collection called Mankonia 2 miles to N.W.: Bánsda (Vánsda) state, Surat Agency.

The station was originally established by the Bombay Trigonometrical Survey. "A platform has been built over the "old mark and another station stone at its surface plumbed over the former at the height of 2·25 feet". When visited in March 1885, it was found to consist of a platform of loose stones 1 foot high, enclosing three large flat stones placed triangularly for the theodolite stand; between these stones, and at a depth of 2 inches, is a circle and dot on a stone apparently undisturbed.

XXXII. Sáler Hill Station, lat. 20° 43′, long. 73° 59′—observed at in 1845—is in the fort of Sáler at the western end of a remarkable, narrow ridge about ½ a mile in length, and having along its southern face an almost perpendicular drop of about 1000 feet: the eastern end is rather higher, and is capped with rock, but the space being extremely confined and occupied by symbols dedicated to the worship of Pareshrám, the station could not be established here on account of the strong objections of the killadár and the people: táluka Báglán, district Násik.

The station is denoted by two marks, one at the surface of the ground and the other 1·96 feet below firmly fixed in the *muram* (a kind of gravel). When visited in April 1885, three dressed stones triangularly imbedded for the theodolite stand were found around the mark-stone of the station which was undisturbed and on a level with the surface of the hill: there is no platform. The directions and distances of the circumjacent villages are:—Chichli N.W. by W., miles 2½; Bhilpára S.W., mile 1; Mahardar S.S.E., miles 1¼; Vagamba N E., miles 2¼; and Sáler S., mile ¼.

XXXIII. Párnera Hill Station, lat. 20° 33′, long. 72° 59′—observed at in 1844—is situated on the raised mound running along the middle length of the fort which is on a small isolated hill. It is about 1¼ miles E. of the B. B. and C. I. Railway line level crossing, and 2½ miles N. of the town of Párdi. The station is in the lands of the village of Párnera, táluka Bulsár (Valsád), district Surat.

No pillar was built. The station of 1844 was denoted by two mark-stones, "one at the surface level and the other "below". It was visited in 1876-77 by Captain Baird, R.E., who stated that "a mark ⊙ is cut on the rock *in situ*". When again visited in March 1885, three large flat stones placed triangularly for the theodolite stand were found around the mark-stone which was apparently undisturbed: there is no platform. The directions and distances of the circumjacent villages are:—Párnera N., mile ½; scattered huts (no name) S., mile ½; and Chichváda (scattered huts) W. by N., mile ½.

XXXIV. Bhorgad Hill Station, lat. 20° 7′, long. 73° 47′—observed at in 1845—also known as Dhair, is situated on a table-land, 179 feet S.W. of a conspicuous tree, and about 2 miles W. by N. of the hill fort of Rámsej immediately east of the road to Násik. The station is in the lands of the village of Rámsej, táluka Dindori, district Násik.

The station consists of a platform and has two marks, the one at the surface is 2·40 feet above the lower which was estab-

lished by the Bombay Trigonometrical Survey. When visited in May 1885, the platform was found in good repair, and the upper mark, 2·40 feet above the rocky surface of the hill, apparently undisturbed. The directions and distances of the circumjacent villages are:—Tongaldara E.S.E., miles 1⅛; Rávalgaon W.N.W., miles 2⅜; Rásegaon N. by E., miles 2¾; and Goalvádi S.S.E., miles 2.

XXXV. Ankai Tankai Hill Station, lat. 20° 11′, long. 74° 29′—observed at in 1845—locally known as Chándkha Bovas Dúngar, is situated on a conical knoll in the centre of the fort of Ankai Tankai which is about ¾ of a mile east of the road from Sávargaon to the Railway Station of Manmád on the G. I. P. Railway, this road being skirted by the Dhond and Manmád Railway. The station is in the lands of the village of Ankai, táluka Yeola (Yevla), district Násik.

In 1845 the station consisted of a platform, and had two marks, the one at the surface was 3·67 feet above the lower cut on the rock which agreed in position with some appearance of a mark found on the rock on which a pole had been erected in 1832. When visited in 1881 by the Levelling Party, no upper mark was found; a bench-mark, with the inscription B. O M., was cut on a stone of the platform. When again visited in April 1885, a platform of dressed stones, 10 feet square and 22 inches high, was found but no upper mark. A search was made for the lower mark, but none having been found, the central portion of the platform was rebuilt and the bench-mark stone fixed in the centre of and level with the upper surface of the platform, the outer and upper edges of which were in perfect preservation having been built with dressed stones set in good mortar. The directions and distances of the circumjacent villages are:—Anakvádi (on the road to the Manmád Railway Station) N. by W., miles 1⅛; Visápur W., miles 3¼; Dhanakvádi S.S.W., miles 3; Vánjarvádi N.E. by N., miles 2⅜; Chándgohán E.S.E., miles 2; and Kasúr S.E. by S., miles 3¼.

XXXVI. Gambhirgad Hill Station, lat. 20° 3′, long. 73° 6′—observed at in 1843 and 1844—is named after the old and now entirely destroyed fort of Gambhirgad, and is situated on the highest part of the hill (S.E. extremity) which is crowned with immense, perpendicular masses of basaltic rock, rising 100 feet and more in some places. It is in a thinly populated and very wild part of the Thána district. The station is in the lands of the village of Váyaloli, táluka Dáhánu, district Thána.

The station of 1843 and 1844, was described as follows:—"The stone at the surface has been plumbed over the lower "which is 2·23 feet below it". When visited in March 1885, a slight trace of a platform about 6 or 8 inches above the surface of the hill with three large flat stones planted triangularly were found. Between these stones and at the bottom of a triangular well, 1·71 feet deep, a mark with circle and dot was found engraved on the rock apparently *in situ*.

XXXVII. Sinnar Hill Station, lat. 19° 53′, long. 74° 3′—observed at in 1845—locally known as Dhagya Dúngar, is situated on the centre of three knolls on a range of hills, about 3 miles N. of the town of Sinnar, and ¾ of a mile N. of a two-domed temple on the southern knoll. The station is in the lands of the village of Máparvádi, táluka Sinnar, district Násik.

The station consists of a stone platform having two marks, one at its surface and the other 1·35 feet below it which is engraved on the rock. It was visited by the Levelling Party in 1881-82 and found in good preservation: when again visited in 1885, the platform was found newly repaired, the upper mark-stone undisturbed and apparently in position: the platform which is on a level with the upper mark-stone, is 1·5 feet above the surface of the hill. The directions and distances of the circumjacent villages are:—Máparvádi S.S.W., miles 1¼; Málegaon W.S.W., miles 2¼; Deshvandi N. by W., miles 2½; and Vadagaon Pimpri E.N.E., miles 3⅜.

XXXVIII. Hevargaon Hill Station, lat. 19° 29′, long. 74° 16′—observed at in 1845—is situated on a small knoll on a table-land, and is about 400 feet higher than the ridge which in a manner connects it with the Báleshvar hill on the west "and runs eastward for a distance of some 20 miles," about 6 miles S. by E. of the town of Sangamner at the junction of the Pravara river with the Mhálungi stream: táluka Sangamner, district Ahmednagar (Ahmadnagar).

The station consists of a stone platform and has two marks, the one at the surface is 1·67 feet above the other. When visited in January 1885, the station was found in good preservation and the upper mark undisturbed. The directions and distances of the circumjacent villages are:—Hevargaon N.N.W., miles 2¼; Nimgaon N. by E., miles 2½; Jámgaon N.E. by E., miles 4¼; Ambhore W., miles 3½; Modalvádi S., miles 1⅛; Chándnapur (on the main road from Poona (Puna) to Násik) W.N.W., miles 2⅛; and Jhola N.W., miles 3.

XXXIX. Kalsúbái Hill Station, lat. 19° 36′, long. 73° 45′—observed at in 1842, 1844 and 1845—is situated on a hill so called which rises abruptly on its western side, and is on the boundary between the Násik and Ahmednagar districts. It is about 10 miles east of the general line of the Western Ghâts, and 12 miles S.E. of the Igatpuri (Vigatpuri) Dâk Bungalow on the G.I.P. Railway Line from Bombay to Jubbulpore (Jabalpur). A temple lies to the N. by E., the S.W. and S.E. angles of which are 15·44 feet and 22·89 feet respectively. The station is in the lands of the village of Bári, táluka Akola, district Ahmednagar.

The station was originally denoted by a circle and dot engraved on the rock: no pillar was built. When visited in February 1885, the station was found in good repair and to consist of a platform, 4 feet 3 inches above the lower mark cut on the rock

in sitú, surrounding a perforated masonry pillar 3 feet in diameter. The directions and distances of the circumjacent villages are:—Indor N., miles 2⅛; Vásádi N.N.E., miles 3¼; Varanguz E., miles 4; Pánjra S. by E., miles 2½; and Ambavádi W.N.W., miles 2¾.

XL. Kámandurg Hill Station, lat. 19° 23′, long. 73° 0′—observed at in 1843—is situated on the eastern and lower point of a double-peaked hill connected by a curving narrow ridge which leads on to a high plateau to the north; this plateau in 1885 was being prepared for a sanitarium for the Railway employés of the district. The station is in the lands of the village of Káman, táluka Bassein (Vasai), district Thána.

Of the station built in 1843, no description is forthcoming except that two mark-stones were left, one at the surface of the ground and the other 2·21 feet below it. When visited in 1885, no platform or pillar was found but only three large flat stones imbedded flush with the hill top, between which and at the depth of 2·25 feet below their upper surface a mark, circle and cross-lines, was found at the bottom of a well. The directions and distances of the circumjacent villages are:—Tilher N.N.E., miles 3; Kuha E.S.E., miles 1¾; Paigaon S.S.E., miles 4; and Devkhindi S.W., miles 2¼.

XXVI.—(*Of the Bombay Longitudinal Series*). Párner Hill Station, lat. 19° 3′, long. 74° 27′—observed at in 1838, 1845 and 1846—is situated on a knoll of a flat-topped hill which rises about 450 feet above the plains to the south: it is ascended by a fair path from the village of Kumbarvádi (at the E. foot of the hill) immediately to the W. of the road from Párner to Tákle Dhokeshvar, and about 3½ miles N.W. of the town of Párner. The hill commands a fair view all round except towards the N.E., where it is intercepted by a Muhammadan dargah surrounded by trees, distant 40 feet from the station. The station is in the lands of the village of Párner, táluka Párner, district Ahmednagar.

The station of 1838 is described as "marked by a cross on a large stone at the depth of 3·31 feet and again at the level "of the ground by the usual circle and centre". No change appears to have been made in 1845 and 1846. When visited in 1881, the station was found to consist of a perforated pillar of masonry, 3 feet in diameter and 3·17 feet above the ground level, surrounded by a platform of earth and stones 10 feet in diameter; "there was no mark-stone at top, but there may be one at the "bottom of the perforation which is 19½ inches deep"; a mark was let into the upper surface of the pillar and covered over by a cairn of stones. When again visited in 1885, the station was found in good condition and the upper mark apparently undisturbed. *Note.*—In September 1868 the district officer reported as follows:—"No sign to be found except a hole in the ground in which "there has apparently been a stone": from this it appears that the station as found in 1881 was most probably built by a Survey Party, about the years 1877-78. The directions and distances of the circumjacent villages are:—Karandi N.E. by N., miles 1⅞; Háthálkhindi W. by N., miles 1¾; Viroli N.W., miles 2¼; and Puna (hamlet) S.S.W., mile 1.

XXX.—(*Of the Bombay Longitudinal Series*). Singi Hill Station, lat. 18° 57′, long. 73° 42′—observed at in 1839, 1842 and 1845—is situated on a sharp peak of the narrow ridge of hills, about 1¼ miles N. by E. of the village of Argaon above which it rises about 2000 feet. The ascent is steep on all sides and towards the S. it is almost precipitous. The upper part of the hill is composed of porous basalt, and the lower, in some parts, is amygdaloidal rock with occasional small masses of zeolite. The station is in the lands of the village of Argaon, táluka Khed, district Poona.

The station of 1839 was denoted by a mark-stone: in 1842 an upper mark-stone was placed, but this having been disturbed another upper mark-stone was placed in 1845 at 3·08 feet above and in the normal of the mark of 1839. When visited in 1885, "the mark was found in position and apparently undisturbed. It is flush with the surface of the hill top; a ring of "stones about 10 feet in diameter defining a kind of platform was found which had to be filled up and levelled for the observations. "No masonry pillar exists at the station." The azimuths or directions and distances of the circumjacent villages are:—Argaon 9°, miles 1⅛; Kura Buzurg 156°, miles 1¾; Kura Khurd 196°, miles 1¼; Audar E. by N., miles 2; and Aunda W. by N., miles 2¼.

December, 1892.

J. ECCLES,
In charge of Computing Office.

SINGI MERIDIONAL SERIES.

PRINCIPAL TRIANGULATION. TRIANGLES.

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle			Distance		
						Log. feet	Feet	Miles
		"	°	′	"			
	Tána, XXIX	1·54	54	37	34·61	5·1657330	146464·7	27·740
1	Lakarwás, XXXII	1·54	75	25	18·24	5·2401535	173841·5	32·925
	Anjini, I	1·53	49	57	7·15	5·1383142	137503·6	26·042
	Lakarwás, XXXII	1·25	61	23	18·61	5·1436241	139195·2	26·363
2	Anjini, I	1·25	51	7	59·16	5·0915032	123453·4	23·381
	Sísa, II	1·26	67	28	42·23	5·1657330	146464·7	27·740
	Anjini, I	1·18	70	33	45·04	5·1692727	147663·3	27·967
3	Sísa, II	1·18	46	41	56·25	5·0567471	113958·6	21·583
	Tukwása, III	1·18	62	44	18·71	5·1436241	139195·2	26·363
	Sísa, II	1·22	49	33	55·01	5·0787674	119885·7	22·706
4	Tukwása, III	1·22	60	47	53·67	5·1382678	137489·0	26·040
	Dúngarpur, IV	1·22	69	38	11·32	5·1692727	147663·3	27·967
	Tukwása, III	·74	59	15	40·32	5·0308778	107368·7	20·335
5	Dúngarpur, IV	·74	47	3	31·90	4·9611718	91447·5	17·320
	Sagwára, V	·75	73	40	47·78	5·0787674	119885·7	22·706

NOTE.—1. The value of the side is given in the same line with the opposite angle.
2. Stations Tána XXIX and Lakarwás XXXII appertain to the Karáchi Longitudinal Series of the North-West Quadrilateral.

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle	Distance		
				Log. feet	Feet	Miles
		"	° ′ ″			
6	Tukwása, III	·45	51 18 53·81	4·8771568	75362·8	14·273
	Sagwára, V	·46	57 23 15·27	4·9102170	81323·7	15·402
	Lohária, VI	·46	71 17 50·92	4·9611718	91447·5	17·320
7	Sagwára, V	·48	57 39 54·21	4·9284926	84818·9	16·064
	Lohária, VI	·49	73 40 50·41	4·9838091	96340·6	18·246
	Ámjio, VII	·48	48 39 15·38	4·8771568	75362·8	14·273
8	Sagwára, V	·59	77 4 3·45	5·0427771	110351·2	20·900
	Ámjio, VII	·59	44 37 25·18	4·9005487	79533·2	15·063
	Kua, VIII	·59	58 18 31·37	4·9838091	96340·6	18·246
9	Ámjio, VII	·64	64 58 36·17	5·0250416	105935·5	20·064
	Kua, VIII	·64	44 18 18·12	4·9120010	81658·4	15·466
	Deokotla, IX	·65	70 43 5·71	5·0427771	110351·2	20·900
10	Kua, VIII	·63	60 3 53·16	4·9902773	97786·1	18·520
	Deokotla, IX	·62	50 4 56·88	4·9372413	86544·9	16·391
	Tembla, X	·63	69 51 9·96	5·0250416	105935·5	20·064
11	Deokotla, IX	·63	51 1 15·11	4·9424645	87592·0	16·589
	Tembla, X	·63	68 46 10·84	5·0213115	105029·5	19·892
	Uchak, XI	·63	60 12 34·05	4·9902773	97786·1	18·520
12	Tembla, X	·72	76 34 5·21	5·0847333	121543·9	23·020
	Uchak, XI	·72	58 55 43·35	5·0295186	107033·2	20·271
	Jathrabhor, XII	·72	44 30 11·44	4·9424645	87592·0	16·589
13	Uchak, XI	·61	50 20 26·30	4·9717079	93693·2	17·745
	Jathrabhor, XII	·60	42 35 12·43	4·9157006	82357·0	15·598
	Patángdi, XIII	·61	87 4 21·27	5·0847333	121543·9	23·020
14	Jathrabhor, XII	·33	59 3 3·65	4·9053978	80426·3	15·232
	Patángdi, XIII	·32	33 23 2·25	4·7126579	51601·0	9·773
	Kágarol, XIV	·33	87 33 54·10	4·9717079	93693·2	17·745
15	Jathrabhor, XII	·30	100 43 59·45	4·9881431	97306·8	18·429
	Kágarol, XIV	·29	47 51 59·43	4·8659685	73446·1	13·910
	Vardhari, XV	·29	31 24 1·12	4·7126579	51601·0	9·773
16	Kágarol, XIV	·61	53 22 47·60	4·9461985	88348·4	16·733
	Vardhari, XV	·62	64 29 32·74	4·9971558	99347·2	18·816
	Ghoráráo, XVI	·61	62 7 39·66	4·9881431	97306·8	18·429
17	Patángdi, XIII	·50	78 2 9·18	5·0055375	101283·2	19·182
	Kágarol, XIV	·50	50 59 36·45	4·9055379	80452·2	15·237
	Bhor, XVII	·50	50 58 14·37	4·9053978	80426·3	15·232
18	Patángdi, XIII	·44	38 36 2·69	4·8418802	69483·3	13·160
	Kágarol, XIV	·44	95 10 2·07	5·0450039	110918·5	21·007
	Richhia, XVIII	·44	46 13 55·24	4·9053978	80426·3	15·232
19	Kágarol, XIV	·53	76 1 14·60	5·0277405	106595·9	20·189
	Ghoráráo, XVI	·53	39 14 14·05	4·8418802	69483·3	13·160
	Richhia, XVIII	·53	64 44 31·35	4·9971558	99347·2	18·816
20	Kágarol, XIV	·39	44 10 25·17	4·8491027	70648·5	13·380
	Bhor, XVII	·38	43 15 45·22	4·8418802	69483·3	13·160
	Richhia, XVIII	·39	92 33 49·61	5·0055375	101283·2	19·182

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle			Distance		
						Log. feet	Feet	Miles
		"	°	′	″			
	Bhor, XVII	·39	95	42	4·80	5·0181077	104257·6	19·746
21	Richhia, XVIII	·38	41	54	0·99	4·8449312	69973·1	13·252
	Kandálva, XIX	·39	42	23	54·21	4·8491027	70648·5	13·380
	Bhor, XVII	·51	48	19	58·98	4·9741207	94215·1	17·844
22	Kandálva, XIX	·52	97	58	9·73	5·0965729	124903·0	23·656
	Pávágad, XX	·51	33	41	51·29	4·8449312	69973·1	13·252
	Richhia, XVIII	·64	56	43	45·84	4·9741207	94215·1	17·844
23	Kandálva, XIX	·64	55	34	15·01	4·9682305	92946·0	17·603
	Pávágad, XX	·64	67	41	59·15	5·0181077	104257·6	19·746
	Kandálva, XIX	·41	60	53	11·07	4·9244505	84033·1	15·915
24	Pávágad, XX	·40	40	43	50·65	4·7976935	62761·5	11·887
	Masábár, XXI	·41	78	22	58·28	4·9741207	94215·1	17·844
	Kandálva, XIX	·34	38	20	58·77	4·8552156	71649·9	13·570
25	Masábár, XXI	·34	108	43	43·89	5·0388748	109364·1	20·713
	Karáli, XXII	·33	32	55	17·34	4·7976935	62761·5	11·887
	Pávágad, XX	·78	55	6	36·03	5·0683047	117032·0	22·165
26	Masábár, XXI	·78	88	48	21·77	5·1542631	142647·2	27·017
	Sidhpur, XXIII	·77	36	5	2·20	4·9244505	84033·1	15·915
	Masábár, XXI	·66	84	4	53·87	5·1165102	130770·6	24·767
27	Karáli, XXII	·66	62	53	41·06	5·0683047	117032·0	22·165
	Sidhpur, XXIII	·65	33	1	25·07	4·8552156	71649·9	13·570
	Karáli, XXII	1·43	81	11	20·85	5·2457915	176113·0	33·355
28	Sidhpur, XXIII	1·42	51	36	25·29	5·1451353	139680·4	26·455
	Bábásiráj, XXIV	1·42	47	12	13·86	5·1165102	130770·6	24·767
	Sidhpur, XXIII	1·52	69	37	54·38	5·2410537	174202·2	32·993
29	Bábásiráj, XXIV	1·52	38	58	12·22	5·0676853	116865·2	22·134
	Kesarva, XXV	1·53	71	23	53·40	5·2457915	176113·0	33·355
	Bábásiráj, XXIV	1·05	58	29	8·49	5·1717813	148518·8	28·129
30	Kesarva, XXV	1·04	30	51	37·75	4·9511565	89362·8	16·925
	Ságbára, XXVI	1·05	90	39	13·76	5·2410537	174202·2	32·993
	Bábásiráj, XXIV	·60	32	33	24·45	4·9799427	95486·7	18·085
31	Ságbára, XXVI	·60	117	12	11·67	5·1981437	157813·4	29·889
	Álamvádi, XXVII	·60	30	14	23·88	4·9511565	89362·8	16·925
	Kesarva, XXV	·50	34	4	22·72	4·9799427	95486·7	18·085
32	Ságbára, XXVI	·50	26	32	56·96	4·8818360	76179·1	14·428
	Álamvádi, XXVII	·51	119	22	40·32	5·1717813	148518·8	28·129
	Kesarva, XXV	1·79	83	38	4·26	5·3035204	201150·2	38·097
33	Ságbára, XXVI	1·78	49	9	35·75	5·1850368	153121·7	29·000
	Páthal, XXVIII	1·78	47	12	19·99	5·1717813	148518·8	28·129
	Ságbára, XXVI	2·52	62	21	0·55	5·2963034	197835·1	37·469
34	Páthal, XXVIII	2·52	53	24	25·52	5·2536243	179318·2	33·962
	Dopári, XXIX	2·52	64	14	33·93	5·3035204	201150·2	38·097
	Páthal, XXVIII	2·20	82	56	8·01	5·3595762	228863·3	43·345
35	Dopári, XXIX	2·20	37	59	13·28	5·1521018	141939·0	26·882
	Tarbhán, XXX	2·20	59	4	38·71	5·2963034	197835·1	37·469

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle	Distance		
				Log. feet	Feet	Miles
		"	° ′ ″			
	Dopári, XXIX	2·59	47 14 39·66	5·2372907	172699·4	32·708
36	Tarbhán, XXX	2·59	56 5 20·55	5·2904721	195196·5	36·969
	Pilva, XXXI	2·59	76 39 59·79	5·3595762	228863·3	43·345
	Dopári, XXIX	2·08	64 54 33·83	5·2758807	188747·3	35·748
37	Pilva, XXXI	2·07	45 36 18·75	5·1729502	148919·0	28·204
	Sáler, XXXII	2·08	69 29 7·42	5·2904721	195196·5	36·969
	Tarbhán, XXX	1·89	53 50 30·03	5·1929886	155951·2	29·536
38	Pilva, XXXI	1·89	62 45 55·70	5·2348759	171741·7	32·527
	Párnera, XXXIII	1·89	63 23 34·27	5·2372907	172699·4	32·708
	Pilva, XXXI	3·10	66 35 43·35	5·3612570	229750·8	43·513
39	Sáler, XXXII	3·10	64 28 19·38	5·3539328	225908·6	42·786
	Bhorgad, XXXIV	3·09	48 55 57·27	5·2758807	188747·3	35·748
	Sáler, XXXII	4·08	59 28 42·86	5·3893466	245101·9	46·421
40	Bhorgad, XXXIV	4·08	66 40 13·41	5·4170790	261263·7	49·482
	Ankai Tankai, XXXV	4·08	53 51 3·73	5·3612570	229750·8	43·513
	Pilva, XXXI	2·26	48 19 0·11	5·2649801	184068·8	34·862
41	Párnera, XXXIII	2·27	92 25 48·27	5·3913665	246244·5	46·637
	Gambhirgad, XXXVI	2·26	39 15 11·62	5·1929886	155951·2	29·536
	Pilva, XXXI	3·80	60 2 46·59	5·3745594	236896·9	44·867
42	Bhorgad, XXXIV	3·81	64 14 21·42	5·3913665	246244·5	46·637
	Gambhirgad, XXXVI	3·80	55 42 51·99	5·3539328	225908·6	42·786
	Bhorgad, XXXIV	1·79	48 14 8·21	5·2716665	186924·6	35·402
43	Ankai Tankai, XXXV	1·79	29 44 1·63	5·0944477	124293·3	23·540
	Sinnar, XXXVII	1·80	102 1 50·16	5·3893466	245101·9	46·421
	Ankai Tankai, XXXV	2·44	38 10 24·98	5·2241816	167564·4	31·736
44	Sinnar, XXXVII	2·45	98 14 21·92	5·4286545	268320·9	50·818
	Hevargaon, XXXVIII	2·45	43 35 13·10	5·2716665	186924·6	35·402
	Bhorgad, XXXIV	3·60	98 52 41·88	5·5202689	331336·2	62·753
45	Ankai Tankai, XXXV	3·60	34 9 43·07	5·2748801	188312·9	35·665
	Kalsúbái, XXXIX	3·60	46 57 35·05	5·3893466	245101·9	46·421
	Bhorgad, XXXIV	3·48	81 16 27·96	5·4461776	279368·6	52·911
46	Gambhirgad, XXXVI	3·48	41 46 45·92	5·2748801	188312·9	35·665
	Kalsúbái, XXXIX	3·48	56 56 46·12	5·3745594	236896·9	44·867
	Bhorgad, XXXIV	1·43	50 38 34·05	5·1634193	145686·5	27·592
47	Sinnar, XXXVII	1·43	88 4 57·97	5·2748801	188312·9	35·665
	Kalsúbái, XXXIX	1·43	41 16 27·98	5·0944477	124293·3	23·540
	Ankai Tankai, XXXV	3·90	33 44 40·27	5·2652771	184194·7	34·885
48	Kalsúbái, XXXIX	3·90	54 1 3·10	5·4286545	268320·9	50·818
	Hevargaon, XXXVIII	3·90	92 14 16·63	5·5202689	331336·2	62·753
	Sinnar, XXXVII	1·83	71 38 42·44	5·2652771	184194·7	34·885
49	Kalsúbái, XXXIX	1·83	59 42 14·41	5·2241816	167564·3	31·736
	Hevargaon, XXXVIII	1·83	48 39 3·15	5·1634193	145686·5	27·592
	Gambhirgad, XXXVI	4·76	61 39 32·65	5·4321684	270500·7	51·231
50	Kalsúbái, XXXIX	4·76	52 58 28·11	5·3898201	245369·2	46·471
	Kámandurg, XL	4·77	65 21 59·24	5·4461776	279368·6	52·911

No. of Triangle	Station	Spherical Excess	Corrected Plane Angle	Distance		
				Log. feet	Feet	Miles
		"	° ′ "			
	Kalsúbái, XXXIX	3·41	80 2 11·44	5·4389457	274755·1	52·037
51	Hevargaon, XXXVIII	3·41	58 38 30·70	5·3769684	238214·6	45·116
	Singi, XXX	3·41	41 19 17·86	5·2652771	184194·7	34·885
	Kalsúbái, XXXIX	4·75	69 3 32·28	5·4617676	289579·3	54·845
52	Kámandurg, XL	4·75	50 12 1·31	5·3769684	238214·6	45·116
	Singi, XXX	4·75	60 44 26·41	5·4321684	270500·7	51·231
	Hevargaon, XXXVIII	3·37	66 44 33·26	5·4143940	259653·4	49·177
53	Singi, XXX	3·37	36 48 18·82	5·2286982	169316·1	32·067
	Párner, XXVI	3·38	76 27 7·92	5·4389457	274755·1	52·037
	Kalsúbái, XXXIX	4·78	53 58 23·87	5·4143940	259653·4	49·177
54	Singi, XXX	4·78	78 7 38·68	5·4971920	314189·7	59·506
	Párner, XXVI	4·78	47 53 57·45	5·3769684	238214·6	45·116

NOTE.—Stations Párner XXVI and Singi XXX appertain to the Bombay Longitudinal Series of the Southern Trigon.

December, 1892.

J. ECCLES,

In charge of Computing Office.

SINGI MERIDIONAL SERIES.

SECONDARY TRIANGULATION. TRIANGLES.

NÁSIK SECONDARY SERIES.

No. of Triangle	Station		Spherical Excess	Corrected Plane Angle	Distance			No. of Triangle	Station		Spherical Excess	Corrected Plane Angle	Distance		
					Log. feet	Feet	Miles						Log. feet	Feet	Miles
			"	° ′ ″							"	° ′ ″			
	Bhorgad, XXXIV		·6	48 2 40·5	4·966353	92545	17·527		Bahula	h.s.	·5	74 26 59·6	4·976560	94746	17·944
55	Sinnar, XXXVII		·6	44 46 48·3	4·942787	87657	16·602	60	Patta	„	·5	60 31 41·7	4·932573	85619	16·216
	Bahula	h.s.	·7	87 10 31·2	5·094448	124293	23·540		Tringalvádi	„	·4	45 1 18·7	4·842405	69567	13·176
	Sinnar, XXXVII		·7	43 18 9·8	5·003565	100824	19·096		Bhorgad, XXXIV		·4	38 15 12·8	4·769461	58811	11·138
56	Kalsúbái, XXXIX		·7	39 0 56·7	4·966353	92545	17·527	61	Bahula	h.s.	·4	74 24 15·8	4·961379	91491	17·328
	Bahula	h.s.	·8	97 40 53·5	5·163419	145687	27·592		Anjini	„	·4	67 20 31·4	4·942787	87657	16·602
	Sinnar, XXXVII		·5	45 19 9·6	4·842405	69567	13·176		Bahula	h.s.	·3	60 21 15·5	4·882017	76211	14·434
57	Bahula	h.s.	·5	63 36 55·5	4·942740	87648	16·600	62	Tringalvádi	„	·3	42 7 9·7	4·769461	58811	11·138
	Patta	„	·4	71 3 54·9	4·966353	92545	17·527		Anjini	„	·4	77 31 34·8	4·932573	85619	16·216
	Kalsúbái, XXXIX		·3	42 3 17·3	4·842405	69567	13·176		Bahula	h.s.	·2	59 18 51·2	4·751677	56452	10·692
58	Bahula	h.s.	·3	34 3 58·0	4·764737	58175	11·018	63	Anjini	„	·2	57 3 30·0	4·741067	55089	10·434
	Patta	„	·3	103 52 44·7	5·003565	100824	19·096		Kánvai	„	·3	63 37 38·8	4·769461	58811	11·138
	Kalsúbái, XXXIX		·4	57 18 18·8	4·932573	85619	16·216		Bahula	h.s.	·1	61 39 4·6	4·694159	49449	9·365
59	Bahula	h.s.	·4	40 23 1·4	4·818998	65917	12·484	64	Kánvai	„	·1	39 41 42·5	4·554938	35887	6·797
	Tringalvádi	„	·5	82 18 39·8	5·003565	100824	19·096		Kandoba	„	·2	78 39 12·9	4·741067	55089	10·434

NOTES.—1. Names followed by Roman numerals are those of Principal Stations. The observations of triangles Nos. 55 to 80 were taken with a 14-inch Theodolite to luminous signals.
2. The value of the side is given in the same line with the opposite angle.

No. of Triangle	Station		Spherical Excess	Corrected Plane Angle	Distance			No. of Triangle	Station		Spherical Excess	Corrected Plane Angle	Distance		
					Log. feet	Feet	Miles						Log. feet	Feet	Miles
			"	° ′ ″							"	° ′ ″			
	Anjini	h.s.	·2	61 50 46·9	4·747119	55862	10·580		Kánvai	h.s.	·1	62 19 41·6	4·579527	37978	7·193
65	Kánvai	,,	·2	55 9 22·0	4·715996	51999	9·848	73	Hatni	,,	·1	81 1 32·0	4·626929	42357	8·022
	Kanjangad	,,	·2	62 59 51·1	4·751677	56452	10·692		Ghargad	,,		36 38 46·4	4·408160	25595	4·848
	Kánvai	h.s.	·1	64 7 42·8	4·704510	50642	9·591		Kánvai	h.s.	·1	48 7 47·3	4·515903	32802	6·213
66	Kanjangad	,,	·1	32 52 46·5	4·485076	30555	5·787	74	Ghargad	,,	·1	57 48 18·1	4·571439	37277	7·060
	Tringalvádi	,,	·2	82 59 30·7	4·747119	55862	10·580		Guia	,,	·1	74 3 54·6	4·626929	42357	8·022
	Kánvai	h.s.	·1	57 54 35·9	4·628747	42535	8·056		Kánvai	h.s.	·1	60 40 55·6	4·489145	30842	5·841
67	Kandoba	,,	·1	42 3 0·6	4·526687	33627	6·368	75	Tringalvádi	,,		59 34 24·7	4·484318	30501	5·777
	Mhordan	,,	·1	80 2 23·5	4·694159	49449	9·365		Dhoria	,,	·1	59 44 39·7	4·485076	30555	5·787
	Kánvai	h.s.	·1	79 28 57·1	4·613848	41101	7·784		Kánvai	h.s.		42 5 46·8	4·400549	25151	4·763
68	Tringalvádi	,,	·1	53 33 13·9	4·526687	33627	6·368	76	Guia	,,	·1	54 23 24·0	4·484318	30501	5·777
	Mhordan	,,		46 57 49·0	4·485076	30555	5·787		Dhoria	,,	·1	83 30 49·2	4·571439	37277	7·060
	Kandoba	h.s.	·2	87 1 14·1	4·733461	54133	10·252		Kandoba	h.s.	·1	64 8 16·2	4·553838	35796	6·780
69	Mhordan	,,	·1	41 17 14·1	4·553483	35767	6·774	77	Patta	,,	·1	51 49 14·6	4·495137	31271	5·922
	Patta	,,	·1	51 41 31·8	4·628747	42535	8·056		Katlia	,,	·1	64 2 29·2	4·553483	35767	6·774
	Mhordan	h.s.	·2	76 45 59·9	4·764737	58175	11·018		Kandoba	h.s.	·1	74 42 21·4	4·535133	34287	6·494
70	Patta	,,	·1	38 18 4·6	4·568675	37040	7·015	78	Hatni	,,	·1	61 36 30·7	4·495137	31271	5·922
	Kalsúbái, XXXIX		·2	64 55 55·5	4·733461	54133	10·252		Katlia	,,		43 41 7·9	4·390082	24552	4·650
	Kánvai	h.s.	·1	67 16 51·1	4·524815	33482	6·341		Kalsúbái, XXXIX			50 28 34·9	4·488843	30821	5·837
71	Mhordan	,,		44 50 23·6	4·408160	25595	4·848	79	Katlia	h.s.	·1	60 31 24·4	4·541383	34784	6·588
	Hatni	,,	·1	67 52 45·3	4·526687	33627	6·368		Bítangad	,,	·1	69 0 0·7	4·571737 *	37302	7·065
	Kandoba	h.s.	·1	51 49 23·4	4·524815	33482	6·341		Patta	h.s.	·1	57 17 48·3	4·488843	30821	5·837
72	Mhordan	,,		35 12 0·0	4·390082	24552	4·650	80	Katlia	,,		44 55 40·7	4·412738	25867	4·899
	Hatni	,,	·1	92 58 36·6	4·628747	42535	8·056		Bítangad	,,	·1	77 46 31·0	4·553838	35796	6·780

* Deduced base.

SINGI MERIDIONAL SERIES.

SECONDARY TRIANGULATION. TRIANGLES.

PRINCIPAL-AUXILIARY AND SECONDARY STATIONS, AND INTERSECTED POINTS.

Differences between the common sides of two triangles are shown by the small figures in the 5th and 12th columns between the data of the triangles, the first in order having supplied the greater value.

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″				Inch
	Tána, XXIX	6 7 34	5·027148	106451	20·161	18
81	Lakarwás, XXXII	1 47 50	4·495322	31284	5·925	„
	Intáli Temple		5·138314	137504	26·042	
	Tána, XXIX	13 45 55	4·638311	43482	8·235	„
82	Lakarwás, XXXII	35 2 17	5·020838	104915	19·870	„
	Náráyangad Hill Math		5·138314	137504	26·042	
	Lakarwás, XXXII	31 57 54	4·912077	81673	15·468	„
83	Anjini, I	76 20 35	5·175837	149912	28·392	„
	Kanor Palace		5·165733	146465	27·740	
	Anjini, I	73 9 0	5·046601	111327	21·085	„
84	Tukwása, III	28 25 3	4·743168	55356	10·484	„
	Palia Hill Mark (helio.)		5·056747	113959	21·583	
				1		
	Sísa, II	48 24 19	5·046601	111327	21·085	„
85	Tukwása, III	34 19 17	4·923933	83933	15·896	„
	Palia Hill Mark (helio.)		5·169273	147663	27·967	
	Anjini, I	25 32 36	4·880604	75963	14·387	18
86	Tukwása, III	14 45 45	4·652153	44890	8·502	„
	Salúmbar Hill Tree		5·056747	113959	21·583	
				10		
	Tukwása, III	140 38 55	5·170597	148114	28·052	„
87	Lohária, VI	18 58 39	4·880604	75963	14·387	„
	Salúmbar Hill Tree		4·910217	81324	15·402	
	Sísa, II	23 43 45	4·884534	76654	14·518	„
88	Tukwása, III	27 5 37	4·938298	86756	16·431	„
	Seria Hill Temple		5·169273	147663	27·967	
	Anjini, I	13 12 59	4·757332	57192	10·832	„
89	Tukwása, III	13 53 5	4·778355	60028	11·369	„
	Dholagarh Hill		5·056747	113959	21·583	
				7		
	Tukwása, III	112 0 5	5·063053	115625	21·899	„
90	Lohária, VI	27 17 50	4·757332	57192	10·832	„
	Dholagarh Hill		4·910217	81324	15·402	

NOTES.—1. Stations Tána XXIX and Lakarwás XXXII appertain to the Karáchi Longitudinal Series.
2. By a principal-auxiliary station is meant a station auxiliary to a principal station at which observations were taken to fix unvisited points.

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″				Inch
	Sísa, II	18 32 19	4·901409	79691	15·093	18
91	Dúngarpur, IV	14 43 42	4·804297	63723	12·069	„
	Kharji Hill Math		5·138268	137489	26·040	
	Tukwása, III	61 4 19	4·905397	80426	15·232	„
92	Sagwára, V	34 33 46	4·717095	52131	9·873	„
	Sábla Hill Tree		4·961172	91447 6	17·320	
	Sagwára, V	22 49 30	4·494476	31223	5·913	„
93	Lohária, VI	87 44 2	4·905397	80426	15·232	„
	Sábla Hill Tree		4·877157	75363	14·273	
	Lohária, VI	51 59 59	4·913466	81934	15·518	„
94	Ámjio, VII	2 39 43	3·683855	4829	0·915	„
	Lohária Hill Temple No. 1		4·928493	84819	16·064	
	Lohária, VI	19 33 7	4·909241	81141	15·368	„
95	Ámjio, VII	0 55 30	3·592635	3914	0·741	„
	Lohária Hill Temple No. 2		4·928493	84819	16·064	
	Sagwára, V	38 43 4	4·832264	67962	12·872	„
96	Lohária, VI	5 11 53	3·993170	9844	1·864	„
	Sagwára Hill Temple No. 1		4·877157	75363	14·273	
	Sagwára, V	60 0 45	4·860037	72450	13·722	„
97	Lohária, VI	4 16 19	3·794552	6231	1·180	„
	Sagwára Hill Temple No. 2		4·877157	75363	14·273	
	Sagwára, V	15 2 4	4·447388	28015	5·306	„
98	Kua, VIII	32 23 37	4·762366	57858	10·958	„
	Ghatonogám Hill Math		4·900549	79533	15·063	
	Kua, VIII	44 16 2	4·914484	82127	15·554	„
99	Deokotla, IX	71 31 38	5·047651	111596	21·136	„
	Ámjio h.s.		5·025042	105936 2	20·064	
	Ámjio, VII	111 38 27	4·914484	82127	15·554	„
100	Deokotla, IX	0 48 32	3·095980	1247	0·236	„
	Ámjio h.s.		4·912001	81658	15·466	
	Deokotla, IX	31 30 8	4·840720	69298	13·125	„
101	Ámjio h.s.	110 14 7	5·094940	124434	23·567	12
	Bánswára Palace		4·914484	82127	15·554	
	Deokotla, IX	35 38 57	4·872511	74561	14·121	18
102	Ámjio h.s.	104 24 46	5·093089	123905	23·467	12
	Bánswára Hill Math		4·914484	82127	15·554	
	Ámjio, VII	51 49 48	4·817478	65687	12·441	18
103	Deokotla, IX	25 56 57	4·563007	36560	6·924	„
	Ajni Hill Mark (helio.)		4·912001	81658	15·466	
	Deokotla, IX	144 58 23	5·217844	165137	31·276	„
104	Uchak, XI	13 36 59	4·830805	67734	12·828	„
	Chokhla Hill Tree		5·021312	105030	19·892	
	Deokotla, IX	11 27 41	4·445787	27912	5·286	„
105	Tembla, X	32 39 28	4·879661	75799	14·356	„
	Sarmi Muváda Hill Mark		4·990277	97786	18·520	
	Deokotla, IX	67 30 50	4·989448	97600	18·485	„
106	Tembla, X	44 42 22	4·871035	74308	14·073	„
	Jhálod Hill Mark		4·990277	97786 2	18·520	
	Tembla, X	24 3 49	4·600162	39825	7·543	„
107	Uchak, XI	92 11 43	4·989448	97600	18·485	„
	Jhálod Hill Mark		4·942465	87592	16·589	
	Jathrabhor, XII	44 27 54	4·844848	69960	13·250	„
108	Patángdi, XIII	25 16 15	4·629780	42636	8·075	„
	Bhuver Hill		4·971708	93693	17·745	
	Uchak, XI	45 37 16	4·771159	59042	11·182	„
109	Patángdi, XIII	48 50 13	4·793719	62190	11·778	„
	Deloch Hill Platform (helio.)		4·915701	82357 5	15·598	
	Jathrabhor, XII	37 40 37	4·771159	59042	11·182	„
110	Patángdi, XIII	38 14 9	4·776590	59785	11·323	„
	Deloch Hill Platform (helio.)		4·971708	93693	17·745	
	Uchak, XI	24 55 18	4·749918	56224	10·648	„
111	Patángdi, XIII	13 11 36	4·483632	30453	5·768	„
	Vadápípla Hill Platform (helio.)		4·915701	82357	15·598	
	Jathrabhor, XII	88 27 53	4·785135	60973	11·548	„
112	Kágarol, XIV	33 45 24	4·530105	33893	6·419	„
	Kantár Hill		4·712658	51601	9·773	
	Kágarol, XIV	17 14 16	4·701632	50307	9·528	„
113	Ghoráráo, XVI	18 34 48	4·733129	54092	10·245	„
	Rena Hill Mark (helio.)		4·997156	99347 2	18·816	
	Jathrabhor, XII	49 29 40	4·733129	54092	10·245	„
114	Kágarol, XIV	84 0 32	4·849741	70752	13·400	„
	Rena Hill Mark (helio.)		4·712658	51601	9·773	

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″				Inch
	Jathrabhor, XII	59 3 50	4·879688	75803	14·357	18
115	Kágarol, XIV	85 12 43	4·944813	88067	16·679	„
	Patángdi Hill Mark		4·712658	51601	9·773	
				6		
	Kágarol, XIV	97 31 14	5·038734	109329	20·706	„
116	Richhia, XVIII	43 25 25	4·879688	75803	14·357	„
	Patángdi Hill Mark		4·841880	69483	13·160	
	Bhor, XVII	30 55 39	4·587458	38677	7·325	„
117	Richhia, XVIII	38 55 18	4·674672	47279	8·954	„
	Káliákua Hill		4·849103	70648	13·380	
	Bhor, XVII	16 57 55	4·418743	26227	4·967	„
118	Richhia, XVIII	34 50 59	4·710630	51361	9·727	„
	Richhia h.s.		4·849103	70648	13·380	
				3		
	Kágarol, XIV	22 23 18	4·710630	51361	9·727	„
119	Bhor, XVII	26 17 51	4·776274	59741	11·315	„
	Richhia h.s.	131 18 51	5·005537	101283	19·182	„
	Bhor, XVII	18 49 9	4·418756	26227	4·967	„
120	Richhia, XVIII	100 50 44	4·902287	79852	15·124	„
	Godhra House		4·849103	70648	13·380	
				1		
	Richhia, XVIII	65 59 45	4·455864	28567	5·410	„
121	Richhia h.s.	57 0 12	4·418756	26227	4·967	„
	Godhra House		4·418743	26227	4·967	
	Patángdi, XIII	98 24 28	5·027861	106626	20·194	„
122	Kágarol, XIV	33 19 54	4·772510	59226	11·217	„
	Devgad Báriya Hill		4·905398	80426	15·232	
				5		
	Kágarol, XIV	17 39 43	4·509898	32352	6·127	„
123	Bhor, XVII	90 33 37	5·027861	106626	20·194	„
	Devgad Báriya Hill		5·005537	101283	19·182	
	Richhia, XVIII	78 48 26	5·044803	110867	20·998	„
124	Pávágad, XX	45 51 58	4·909095	81114	15·362	„
	Vijápur Hill Mark (helio.)		4·968231	92946	17·603	
	Kandálva, XIX	55 19 18	4·904634	80285	15·205	„
125	Pávágad, XX	49 52 18	4·873008	74646	14·138	„
	Kántáveda Hill Mark (helio.)		4·974121	94215	17·844	
				1		
	Bhor, XVII	73 24 29	4·873008	74646	14·138	„
126	Kandálva, XIX	42 38 52	4·722380	52769	9·994	„
	Kántáveda Hill Mark (helio.)		4·844931	69973	13·252	

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″				Inch
	Kandálva, XIX	0 10 56	2·590820	390	0·074	18
127	Pávágad, XX	129 34 37	4·975266	94464	17·891	„
	Pávágad Hill Temple		4·974121	94215	17·844	
				2		
	Kandálva, XIX	61 4 9	4·926434	84418	15·988	„
128	Masábár, XXI	78 20 16	4·975266	94464	17·891	„
	Pávágad Hill Temple		4·797694	62762	11·887	
	Kandálva, XIX	90 34 56	4·813526	65092	12·328	„
129	Masábár, XXI	14 48 20	4·221006	16634	3·150	„
	Salesra Hill Mark (helio.)		4·797694	62762	11·887	
	Kandálva, XIX	76 2 22	4·852067	71132	13·472	„
130	Masábár, XXI	45 3 41	4·715038	51885	9·827	„
	Asalia Hill Mark (helio.)		4·797694	62762	11·887	
				2		
	Masábár, XXI	63 40 3	4·876868	75313	14·264	„
131	Karáli, XXII	57 49 54	4·852067	71132	13·472	„
	Asalia Hill Mark (helio.)		4·855216	71650	13·570	
	Kandálva, XIX	43 57 46	4·819452	65986	12·497	„
132	Pávágad, XX	38 25 1	4·771330	59065	11·187	„
	Landiváda Hill Mark		4·974121	94215	17·844	
				1		
	Kandálva, XIX	16 55 25	4·262353	18296	3·465	„
133	Masábár, XXI	70 0 37	4·771330	59065	11·187	„
	Landiváda Hill Mark		4·797694	62762	11·887	
	Pávágad, XX	51 11 21	4·816764	65579	12·420	12
134	Masábár, XXI	41 57 10	4·750217	56262	10·656	„
	Mandanpur h.s.	86 51 29	4·924451	84033	15·915	„
	Masábár, XXI	8 18 27	4·540651	34726	6·577	„
135	Mandanpur h.s.	7 31 37	4·498072	31483	5·963	„
	Vandra Hill		4·816764	65579	12·420	
	Pávágad, XX	59 35 30	5·011552	102696	19·450	„
136	Mandanpur h.s.	92 12 44	5·075500	118987	22·535	„
	Baroda Clock Tower (helio.)		4·750217	56262	10·656	
	Masábár, XXI	3 34 3	3·947477	8861	1·678	„
137	Mandanpur h.s.	149 0 43	4·865205	73317	13·886	„
	Mandanpur Hill		4·816764	65579	12·420	
	Masábár, XXI	43 46 56	4·776024	59707	11·308	18
138	Karáli, XXII	12 20 59	4·266135	18456	3·495	„
	Bodeli Hill Mark (helio.)		4·855216	71650	13·570	

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″				Inch
	Masábár, XXI	26 7 2	4·502398	31798	6·022	18
139	Karáli, XXII	71 10 17	4·834854	68368	12·949	„
	Gajra Hill Mark (helio.)		4·855216	71650	13·570	
	Bábásiráj, XXIV	63 31 56	4·983073	96177	18·215	„
140	Ságbára, XXVI	60 11 17	4·969510	93220	17·655	„
	Juna Ráj Hill Mark (helio.)		4·951157	89363	16·925	
				1		
	Ságbára, XXVI	57 0 55	4·961320	91479	17·326	„
141	Álamvádi, XXVII	61 52 21	4·983073	96177	18·215	„
	Juna Ráj Hill Mark (helio.)		4·979943	95487	18·085	
	Páthal, XXVIII	1 58 26	4·833355	68133	12·904	„
142	Dopári, XXIX	3 45 58	5·113699	129927	24·607	„
	Songad Hill Mark		5·296303	197835	37·469	
	Gambhirgad, XXXVI	70 33 13	5·499953	316194	59·885	15
143	Kalsúbái, XXXIX	53 1 28	5·427952	267887	50·736	„
	Kem h.s.	56 25 19	5·446178	279369	52·911	„
				3		
	Párnera, XXXIII	72 47 1	5·427952	267887	50·736	„
144	Gambhirgad, XXXVI	66 11 46	5·409249	256596	48·598	„
	Kem h.s.		5·264980	184069	34·862	
	Párnera, XXXIII	40 22 15	5·257127	180770	34·237	„
145	Kem h.s.		5·425829	266581	50·489	
	Rúpgad „	66 50 34	5·409249	256596	48·598	„
	Párnera, XXXIII	9 55 40	4·739587	54902	10·398	„
146	Rúpgad h.s.	113 14 0	5·466304	292620	55·420	„
	Songad Fort Pagoda		5·425829	266581	50·489	
	Pilva, XXXI	64 7 47	5·339097	218322	41·349	„
147	Bhorgad, XXXIV	47 16 15	5·250992	178234	33·757	„
	Mánur Peak		5·353933	225909	42·786	
				23		
	Bhorgad, XXXIV	68 20 3	5·416980	261204	49·470	„
148	Ankai Tankai, XXXV	50 58 0	5·339097	218322	41·349	„
	Mánur Peak		5·389347	245102	46·421	
	Párnera, XXXIII	28 11 49	5·191761	155511	29·453	„
149	Kem h.s.	23 1 50	5·109779	128760	24·386	„
	Ajmirgad Tree		5·409249	256596	48·598	
				9		
	Pilva, XXXI	33 46 27	5·109779	128760	24·386	„
150	Párnera, XXXIII	8 32 59	4·536983	34434	6·522	„
	Ajmirgad Tree		5·192989	155951	29·536	

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″				Inch
	Párnera, XXXIII	39 47 54	5·234932	171764	32·531	15
151	Kem h.s.	33 11 4	5·166947	146875	27·817	„
	Varvand „	107 1 2	5·409249	256596	48·598	„
				0		
	Párnera, XXXIII	32 59 7	5·002138	100493	19·033	„
152	Gambhirgad, XXXVI		5·166947	146875	27·817	
	Varvand h.s.	94 17 38	5·264980	184069	34·862	„
	Kem h.s.		5·035846	108604	20·569	
153	Varvand „	51 25 23	5·128039	134289	25·433	„
	Nikorda „	89 21 39	5·234932	171764	32·531	„
				17		
	Pilva, XXXI	96 19 39	5·128039	134289	25·433	„
154	Kem h.s.		4·654408	45124	8·546	
	Nikorda „	64 9 44	5·084951	121605	23·031	„
			*			
	Varvand h.s.	27 33 56	4·791513	61875	11·719	„
155	Nikorda „	98 7 4	5·121781	132367	25·070	„
	Baphlún Hill Pole		5·035846	108604	20·569	
	Pilva, XXXI		5·148177	140662	26·641	
156	Párnera, XXXIII	19 4 31	4·711033	51408	9·736	„
	Ghontvál h.s.	97 31 4	5·192989	155951	29·536	„
				27		
	Pilva, XXXI		4·336737	21714	4·113	
157	Nikorda h.s.	93 57 16	4·711033	51408	9·736	„
	Ghontvál „	61 7 27	4·654408	45124	8·546	„
	Párnera, XXXIII	45 30 45	5·187463	153979	29·163	„
158	Gambhirgad, XXXVI	13 0 22	4·686417	48575	9·200	„
	Daman Idga		5·264980	184069	34·862	
				3		
	Pilva, XXXI	38 41 55	5·187463	153979	29·163	„
159	Gambhirgad, XXXVI	52 15 36	5·289492	194757	36·886	„
	Daman Idga		5·391367	246244	46·637	
	Bhorgad, XXXIV	120 50 39	5·317491	207726	39·342	„
160	Sinnar, XXXVII	28 14 37	5·058782	114494	21·684	„
	Tahola Hill		5·094448	124293	23·540	
				14		
	Bhorgad, XXXIV	107 14 14	5·465484	292068	55·316	„
161	Gambhirgad, XXXVI	21 59 15	5·058782	114494	21·684	„
	Tahola Hill		5·374559	236897	44·867	
	Bhorgad, XXXIV	119 29 53	5·317493	207727	39·342	„
162	Sinnar, XXXVII	29 7 1	5·064955	116133	21·995	„
	Achla Hill Fort		5·094448	124293	23·540	

* Deduced base.

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″				Inch
	Bhorgad, XXXIV	111 6 56	5·296496	197923	37·485	15
163	Sinnar, XXXVII	33 1 24	5·063063	115628	21·899	„
	Ahivant Fort		5·094448	124293	23·540	
	Bhorgad, XXXIV	101 56 55	5·268489	185562	35·144	„
164	Sinnar, XXXVII	37 6 30	5·058552	114433	21·673	„
	Saptashring Hill		5·094448	124293	23·540	
				7		
	Ankai Tankai, XXXV	57 12 33	5·268489	185562	35·144	„
165	Sinnar, XXXVII	64 55 22	5·300875	199929	37·865	„
	Saptashring Hill		5·271667	186925	35·402	
	Bhorgad, XXXIV	98 28 36	5·260590	182217	34·511	„
166	Sinnar, XXXVII	39 5 43	5·065122	116178	22·003	„
	Márkinda Hill Fort		5·094448	124293	23·540	
	Bhorgad, XXXIV	93 13 17	5·248532	177228	33·566	„
167	Sinnar, XXXVII	42 20 5	5·077531	119545	22·641	„
	Rávlya Fort		5·094448	124293	23·540	
	Bhorgad, XXXIV	91 17 59	5·247065	176630	33·453	„
168	Sinnar, XXXVII	43 59 27	5·088876	122709	23·240	„
	Jauliádongar Hill		5·094448	124293	23·540	
	Ankai Tankai, XXXV	61 59 56	5·256013	180307	34·149	„
169	Sinnar, XXXVII	51 44 48	5·205108	160364	30·372	„
	Dhodap Hill Pagoda		5·271667	186925	35·402	
				2		
	Bhorgad, XXXIV	86 15 14	5·256013	180307	34·149	„
170	Sinnar, XXXVII	50 17 4	5·142996	138994	26·325	„
	Dhodap Hill Pagoda		5·094448	124293	23·540	
	Bhorgad, XXXIV	122 34 19	5·206822	160998	30·492	„
171	Sinnar, XXXVII	16 50 31	4·743138	55353	10·483	„
	Nalvári Hill Bush		5·094448	124293	23·540	
	Bhorgad, XXXIV	70 54 39	5·070927	117741	22·299	„
172	Sinnar, XXXVII	15 7 17	4·511906	32502	6·156	„
	Talegaon Peak		5·094448	124293	23·540	
	Ankai Tankai, XXXV	71 10 34	5·260050	181991	34·468	„
173	Sinnar, XXXVII	5 16 32	4·247455	17679	3·348	„
	Rámahabit Hill		5·271667	186925	35·402	
				34		
	Bhorgad, XXXIV	51 7 28	5·260050	181991	34·468	„
174	Sinnar, XXXVII	96 45 20	5·365760	232145	43·967	„
	Rámahabit Hill		5·094448	124293	23·540	

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″				Inch
	Bhorgad, XXXIV	49 41 58	5·249032	177432	33·605	15
175	Sinnar, XXXVII	98 0 26	5·362445	230380	43·633	„
	Katarvádi Hill East Point		5·094448	124293	23·540	
	Bhorgad, XXXIV	48 56 1	5·258943	181528	34·380	„
176	Sinnar, XXXVII	99 59 11	5·374970	237121	44·909	„
	Gorakhnáth Hill		5·094448	124293	23·540	
	Bhorgad, XXXIV	99 57 42	5·331425	214499	40·625	„
177	Kem h.s.	43 43 39	5·177645	150537	28·511	„
	Lonjái „	36 18 39	5·110466	128963	24·425	„
			*	5		
	Bhorgad, XXXIV	9 11 23	4·997589	99446	18·835	„
178	Ankai Tankai, XXXV	13 59 24	5·177645	150537	28·511	„
	Lonjái h.s.	156 49 13	5·389347	245102	46·421	„
	Bhorgad, XXXIV	139 23 41	5·383398	241768	45·789	„
179	Kem h.s.	20 17 27	5·109982	128820	24·398	„
	Sinnar „	20 18 52	5·110466	128963	24·425	„
			*	15		
	Bhorgad, XXXIV	48 37 22	5·271586	186890	35·396	„
180	Ankai Tankai, XXXV		5·109982	128820	24·398	
	Sinnar h.s.	100 13 53	5·389347	245102	46·421	„
	Ankai Tankai, XXXV	70 33 34	4·978461	95162	18·023	„
181	Lonjái h.s.	29 13 37	4·692616	49274	9·332	„
	Mesankhed Hill		4·997589	99446	18·835	
				13		
	Ankai Tankai, XXXV	87 42 55	5·281868	191367	36·244	„
182	Sinnar h.s.	14 54 31	4·692616	49274	9·332	„
	Mesankhed Hill		5·271586	186890	35·396	
	Kalsúbái, XXXIX	28 34 46	5·324001	210863	39·936	„
183	Kem h.s.	17 15 20	5·116452	130753	24·764	„
	Trimbak „	134 9 54	5·499953	316194	59·885	„
				1		
	Gambhirgad, XXXVI	51 54 21	5·324001	210863	39·936	„
184	Kem h.s.	39 9 59	5·228453	169220	32·049	„
	Trimbak „	88 55 40	5·427952	267887	50·736	„
	Kalsúbái, XXXIX	40 6 20	5·349130	223424	42·315	„
185	Kem h.s.	25 37 59	5·176203	150039	28·416	„
	Básgad „	114 15 41	5·499953	316194	59·885	„
				7		
	Gambhírgad, XXXVI	14 8 33	5·176203	150039	28·416	„
186	Kalsúbái, XXXIX	12 55 8	5·137635	137289	26·002	„
	Básgad h.s.	152 56 19	5·446178	279369	52·911	„

* Deduced base.

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″				Inch
	Bhorgad, XXXIV	134 47 45	5·155374	143012	27·086	15
187	Sinnar, XXXVII	7 7 33	4·397940	25000	4·735	,,
	Baronda Peak		5·094448	124293	23·540	
	Bhorgad, XXXIV	65 33 36	5·377283	238387	45·149	,,
188	Ankai Tankai, XXXV	3 50 11	4·243529	17520	3·318	,,
	Sulia Peak		5·389347	245102	46·421	
	Gambhirgad, XXXVI	22 27 9	5·046202	111225	21·065	,,
189	Trimbak h.s.	122 1 21	5·392547	246915	46·764	,,
	Rámsej Fort Pagoda		5·228453	169220	32·049	
				24		
	Gambhirgad, XXXVI	26 57 28	5·143729	139229	26·369	,,
190	Básgad h.s.	126 29 23	5·392547	246915	46·764	,,
	Rámsej Fort Pagoda		5·137635	137289	26·002	
	Bhorgad, XXXIV	50 42 10	5·359912	229040	43·379	,,
191	Ankai Tankai, XXXV	5 12 19	4·428967	26851	5·085	,,
	Chamberlena Hill Tree		5·389347	245102	46·421	
				3		
	Ankai Tankai, XXXV	24 31 44	4·988892	97475	18·461	,,
192	Sinnar, XXXVII	102 42 34	5·359912	229040	43·379	,,
	Chamberlena Hill Tree		5·271667	186925	35·402	
	Bhorgad, XXXIV	11 10 42	4·965294	92320	17·485	,,
193	Sinnar, XXXVII	3 57 5	4·516081	32816	6·215	,,
	Varandi Peak		5·094448	124293	23·540	
	Bhorgad, XXXIV	29 56 55	4·937474	86591	16·400	,,
194	Sinnar, XXXVII	15 49 29	4·674857	47300	8·958	,,
	Násik Idga		5·094448	124293	23·540	
	Bhorgad, XXXIV	44 6 11	4·952802	89702	16·989	,,
195	Sinnar, XXXVII	30 32 49	4·816296	65508	12·407	,,
	Pándu Lena Hill		5·094448	124293	23·540	
				25		
	Bhorgad, XXXIV	92 20 21	5·408706	256275	48·537	,,
196	Ankai Tankai, XXXV	14 47 51	4·816296	65508	12·407	,,
	Pándu Lena Hill		5·389347	245102	46·421	
	Bhorgad, XXXIV	68 48 4	5·096155	124783	23·633	,,
197	Sinnar, XXXVII	42 58 12	4·960124	91227	17·278	,,
	Ghargad Hill Fort		5·094448	124293	23·540	
	Bhorgad, XXXIV	11 5 49	5·170348	148029	28·036	,,
198	Gambhirgad, XXXVI	6 50 34	4·962063	91635	17·355	,,
	Vághera Hill		5·374559	236897	44·867	
	Gambhirgad, XXXVI	16 17 23	4·695490	49601	9·394	,,
199	Trimbak h.s.	56 50 10	5·170348	148029	28·036	,,
	Vághera Hill		5·228453	169220	32·049	
	Gambhirgad, XXXVI	3 8 10	4·238843	17332	3·283	,,
200	Trimbak h.s.	29 9 0	5·188408	154315	29·226	,,
	Harish Hill Fort		5·228453	169220	32·049	
	Kalsúbái, XXXIX	42 28 32	5·118246	131294	24·866	,,
201	Trimbak h.s.	95 15 53	5·286928	193610	36·669	,,
	Bhopálgad Hill Fort		5·116452	130753	24·764	
	Gambhirgad, XXXVI	101 3 41	5·474251	298024	56·444	,,
202	Kalsúbái, XXXIX	12 0 51	4·800779	63209	11·971	,,
	Mahálakshmi Peak		5·446178	279369	52·911	
				10		
	Párnera, XXXIII	13 48 10	4·800779	63209	11·971	,,
203	Gambhirgad, XXXVI	122 11 20	5·350666	224216	42·465	,,
	Mahálakshmi Peak		5·264980	184069	34·862	
	Kalsúbái, XXXIX	23 4 14	5·025307	106000	20·076	,,
204	Kámandurg, XL	67 8 56	5·396675	249273	47·211	,,
	Kohoj h.s.	89 46 50	5·432168	270501	51·231	,,
				4		
	Gambhirgad, XXXVI	63 0 49	5·396675	249273	47·211	,,
205	Kalsúbái, XXXIX	29 54 19	5·144465	139465	26·414	,,
	Kohoj h.s.	87 4 52	5·446178	279369	52·911	,,
	Kámandurg, XL		4·773696	59388	11·248	
206	Kohoj h.s.	90 53 1	5·087424	122299	23·163	,,
	Káldurg ,,	60 4 8	5·025307	106000	20·076	,,
				0		
	Gambhirgad, XXXVI	24 3 49	5·087424	122299	23·163	,,
207	Kámandurg, XL		5·186699	153709	29·112	
	Káldurg h.s.	125 6 28	5·389820	245369	46·471	,,
	Kohoj h.s.		4·893574	78266	14·823	
208	Káldurg ,,	133 5 57	5·102116	126507	23·960	,,
	Tárápur Fort s.	20 2 45	4·773696	59388	11·248	,,
	Kohoj h.s.	73 52 31	4·787946	61369	11·623	,,
209	Káldurg ,,	37 44 40	4·592228	39105	7·406	,,
	Takmak Hill Mark		4·773696	59388	11·248	
	Kohoj h.s.	115 43 17	4·981675	95868	18·157	,,
210	Káldurg ,,	30 21 17	4·730585	53776	10·185	,,
	Vajrábái Hill Mark		4·773696	59388	11·248	

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″				Inch
	Kohoj h.s.	107 47 0	5·079665	120134	22·753	15
211	Káldurg „	44 8 7	4·943759	87853	16·639	„
	Gotára Hill Fort		4·773696	59388	11·248	
	Kámandurg, XL	75 40 53	5·068632	117120	22·182	„
212	Kohoj h.s.	43 2 35	4·916470	82503	15·626	„
	Janjira s.	61 16 32	5·025307	106000	20·076	„
				2		
	Kámandurg, XL	46 38 2	4·949007	88921	16·841	„
213	Káldurg h.s.	42 24 57	4·916470	82503	15·626	„
	Janjira s.		5·087424	122299	23·163	
	Gambhirgad, XXXVI	85 26 17	5·186552	153657	29·102	„
214	Kohoj h.s.		4·883870	76537	14·496	
	Dongri No. 1 „	64 47 30	5·144465	139465	26·414	„
	Gambhirgad, XXXVI	84 36 39	5·183712	152655	28·912	„
215	Kohoj h.s.		4·883883	76539	14·496	
	Dongri No. 2 „	65 26 39	5·144465	139465	26·414	„
				11		
	Párnera, XXXIII	24 11 17	4·883883	76539	14·496	„
216	Gambhirgad, XXXVI	75 37 33	5·257569	180955	34·272	„
	Dongri No. 2 h.s.	80 11 10	5·264980	184069	34·862	„
	Gambhirgad, XXXVI	23 31 35	4·746302	55757	10·560	„
217	Dongri No. 1 h.s.	123 14 54	5·067506	116817	22·124	„
	Umbargaon Tower		4·883870	76537	14·496	
	Gambhirgad, XXXVI	18 44 5	4·764998	58210	11·025	„
218	Kohoj h.s.	31 34 37	4·977275	94902	17·974	„
	Asheri Hill Fort		5·144465	139465	26·414	
				3		
	Gambhirgad, XXXVI	65 52 34	4·975355	94483	17·895	„
219	Dongri No. 2 h.s.	66 26 58	4·977275	94902	17·974	„
	Asheri Hill Fort		4·883883	76539	14·496	
	Kámandurg, XL		5·376584	238004	45·077	
220	Karanja, XXXIV	59 16 18	5·334296	215922	40·894	„
	Áupa h.s.	49 22 28	5·280231 *	190647	36·107	„
	Karanja, XXXIV	61 9 7	5·320016	208937	39·571	„
221	Áupa h.s.		5·110003	128826	24·399	
	Thána „	86 9 37	5·376584	238004	45·077	„
				2		
	Kámandurg, XL	75 15 39	5·320016	208937	39·571	„
222	Áupa h.s.		4·792637	62035	11·749	
	Thána „	88 3 9	5·334296	215922	40·894	„

No. of Triangle	Station	Corrected Plane Angle	Distance			Theodolite used
			Log. feet	Feet	Miles	
		° ′ ″				Inch
	Kámandurg, XL	64 4 45	4·798493	62877	11·909	15
223	Thána h.s.	53 22 42	4·749036	56109	10·627	„
	Bhiwndi Hill		4·792637	62035	11·749	
	Kámandurg, XL	14 27 18	4·239583	17361	3·288	„
224	Thána h.s.	48 39 44	4·717846	52221	9·890	„
	Dahisar Hill Mark		4·792637	62035	11·749	
	Kámandurg, XL	12 10 44	4·157563	14374	2·722	„
225	Thána h.s.	102 14 43	4·823358	66582	12·610	„
	Thána Church		4·792637	62035	11·749	
	Kámandurg, XL	18 11 4	5·094835	124404	23·561	„
226	Karanja, XXXIV	10 23 13	4·856557	71871	13·612	„
	Kalva Hill Mark		5·280231 *	190647	36·107	
	Thána h.s.	124 48 20	5·026966	106406	20·153	„
227	Kámandurg, XL	26 35 38	4·763525	58013	10·987	„
	Madh Building		4·792637	62035	11·749	
	Singi, XXX	60 17 27	5·390758	245900	46·572	„
228	Karanja, XXXIV	56 54 27	5·375098	237191	44·922	„
	Máhuli h.s.	62 48 6	5·401074	251811	47·691	„
				4		
	Kalsúbái, XXXIX	69 12 0	5·375098	237191	44·922	„
229	Singi, XXX	40 56 20	5·220777	166256	31·488	„
	Máhuli h.s.	69 51 40	5·376968	238215	45·116	„
	Kalsúbái, XXXIX	76 40 4	5·368640	233690	44·259	„
230	Singi, XXX	6 1 47	4·401878	25228	4·778	„
	Kulang Hill Mark		5·376968	238215	45·116	
	Gambhirgad, XXXVI	22 33 40	5·267902	185311	35·097	„
231	Básgad h.s.	140 55 31	5·483516	304450	57·661	„
	Ajuba Hill		5·137635	137289	26·002	
	Kalsúbái, XXXIX	90 17 54	5·451677	282929	53·585	„
232	Kámandurg, XL	16 44 58	4·911357	81538	15·443	„
	Harischandragad Hill Fort		5·432168	270501	51·231	
	Hevargaon, XXXVIII	90 1 53	5·314201	206159	39·045	„
233	Párner, XXVI	34 45 16	5·070122	117523	22·258	„
	Sathvádi Hill Pagoda		5·228698	169316	32·067	
	Kalsúbái, XXXIX	39 49 11	5·305267	201961	38·250	„
234	Párner, XXVI	45 12 8	5·349846	223793	42·385	„
	Dudeshvar h.s.	94 58 41	5·497192	314190	59·506	„

NOTE.—Stations Párner XXVI, Singi XXX and Karanja XXXIV appertain to the Bombay Longitudinal Series. * Deduced base.

No. of Triangle	Station		Corrected Plane Angle	Distance			Theodolite used
				Log. feet	Feet	Miles	
			° ′ ″				Inch
	Hevargaon, XXXVIII		112 40 34	5·305267	201962	38·250	15
235	Párner, XXVI		16 38 59	4·797362	62714	11·878	,,
	Dudeshvar	h.s.		5·228698	169316	32·067	
	Kalsúbái, XXXIX		21 9 44	4·975354	94483	17·895	,,
236	Dudeshvar	h.s.	37 36 26	5·203340	159713	30·249	,,
	Báleshvar	,,	121 13 50	5·349846	223793	42·385	,,
	Kalsúbái, XXXIX		72 37 56	5·387407	244009	46·214	,,
237	Singi, XXX		38 39 35	5·203340	159713	30·249	,,
	Báleshvar	h.s.	68 42 29	5·376968	238215	45·116	,,
	Kalsúbái, XXXIX		71 39 40	5·183898	152721	28·924	,,
238	Báleshvar	h.s.	25 16 50	4·837014	68709	13·013	,,
	Aundha Hill Fort			5·203340	159713	30·249	
	Kalsúbái, XXXIX		146 30 24	5·355544	226748	42·945	,,
239	Máhuli	h.s.	9 37 34	4·837014	68709	13·013	,,
	Aundha Hill Fort			5·220777	166256	31·488	
	Kalsúbái, XXXIX		57 49 12	5·130921	135183	25·603	,,
240	Báleshvar	h.s.	32 40 33	4·935657	86230	16·331	,,
	Ád Hill Fort			5·203340	159713	30·249	
	Kalsúbái, XXXIX		47 56 0	5·371533	235252	44·555	,,
241	Párner, XXVI		34 34 29	5·254866	179832	34·059	,,
	Vatmái Hill Pagoda			5·497192	314190	59·506	
	Hevargaon, XXXVIII		75 30 54	5·254866	179832	34·059	,,
242	Kalsúbái, XXXIX		21 52 14	4·840034	69189	13·104	,,
	Vatmái Hill Pagoda			5·265277	184195	34·885	
	Hevargaon, XXXVIII		104 50 14	4·721399	52650	9·972	,,
243	Báleshvar	h.s.	37 50 54	4·523993	33419	6·329	,,
	Sangamner Hill Pagoda			4·518734 *	33017	6·253	
	Hevargaon, XXXVIII		57 23 9	4·760182	57568	10·903	,,
244	Dudeshvar	h.s.	9 11 35	4·038177	10919	2·068	,,
	Hevargaon Hill Pagoda			4·797362	62714	11·878	
	Hevargaon, XXXVIII		64 33 6	5·254726	179773	34·048	,,
245	Kalsúbái, XXXIX		3 8 38	4·038177	10919	2·068	,,
	Hevargaon Hill Pagoda			5·265277	184195	34·885	
	Hevargaon, XXXVIII			4·205571	16054	3·040	
246	Dudeshvar	h.s.	130 27 40	4·870078	74144	14·042	,,
	Aurangpur	,,	40 3 25	4·797362	62714	11·878	,,

No. of Triangle	Station		Corrected Plane Angle	Distance			Theodolite used
				Log. feet	Feet	Miles	
			° ′ ″				Inch
	Dudeshvar	h.s.	100 43 0	4·681424	48020	9·095	15
247	Aurangpur	,,	60 6 25	4·627063	42370	8·025	,,
	Málunje Hill Pagoda			4·205571	16054	3·040	
	Párner, XXVI		46 27 15	5·036714	108821	20·610	,,
248	Nimbadera	h.s.	74 2 21	5·159408	144347	27·338	,,
	Varsinde	,,	59 30 24	5·111832 †	129370	24·502	,,
	Párner, XXVI		13 30 3	4·846446	70218	13·299	,,
249	Dudeshvar	h.s.	28 40 50	5·159408	144347	27·338	,,
	Varsinde	,,	137 49 7	5·305267	201961	38·250	,,
	Hevargaon, XXXVIII		56 37 2	5·151082	141606	26·819	,,
250	Párner, XXVI		30 9 13	4·930369	85186	16·134	,,
	Varsinde Pagoda			5·228698	169316	32·067	
	Párner, XXVI		44 14 50	4·959414	91078	17·250	,,
251	Nimbadera	h.s.	38 6 23	4·906083	80553	15·256	,,
	Tukái Hill Pagoda			5·111832 †	129370	24·502	
	Hevargaon, XXXVIII		23 3 36	4·906083	80553	15·256	,,
252	Párner, XXVI		32 21 27	5·041651	110065	20·846	,,
	Tukái Hill Pagoda			5·228698	169316	32·067	
	Kalsúbái, XXXIX		4 14 36	4·343269	22043	4·175	,,
253	Singi, XXX		122 39 44	5·399325	250798	47·500	,,
	Khandeshvar Hill Pagoda			5·376968	238215	45·116	

CAMBAY SECONDARY SERIES.

	Páthal, XXVIII		65 38 37	5·127577	134146	25·406	12
254	Tarbhán, XXX		39 47 37	4·974256	94244	17·849	,,
	Sádadván	h.s.	74 33 46	5·152102	141939	26·882	,,
	Páthal, XXVIII		78 43 51	5·028656	106821	20·231	,,
255	Sádadván	h.s.	41 21 26	4·857150	71970	13·631	,,
	Dungar	,,	59 54 43	4·974256	94244	17·849	,,
	Sádadván	h.s.	33 12 20	4·867254	73664	13·951	,,
256	Dungar	,,	94 13 11	5·127577	134146	25·406	,,
	Tarbhán, XXX		52 34 29	5·028656	106821	20·231	,,

NOTE.—Stations Párner XXVI and Singi XXX appertain to the Bombay Longitudinal Series. * Deduced base. † Base taken from the Bombay Longitudinal Series.

No. of Triangle	Station		Corrected Plane Angle	Distance			Theodolite used
				Log. feet	Feet	Miles	
			° ′ ″				Inch
	Páthal, XXVIII		49 44 49	4·782857	60654	11·487	12
257	Dungar	h.s.	65 21 3	4·858726	72231	13·680	„
	Tadkeshvar	s.	64 54 8	4·857150	71970	13·631	„
	Dungar	h.s.	32 16 1	4·511979	32507	6·157	„
258	Tadkeshvar	s.	62 47 7	4·733596	54150	10·256	„
	Kámrej	h.s.	84 56 52	4·782857	60654	11·487	„
	Dungar	h.s.	34 45 43	4·490094	30910	5·854	„
259	Kámrej	„	52 30 7	4·633569	43010	8·146	„
	Mákna	s.	92 44 10	4·733596	54150	10·256	„
	Páthal, XXVIII		40 55 58	4·764042	58082	11·000	„
260	Tadkeshvar	s.	84 30 6	4·945683	88244	16·713	„
	Bharan	h.s.	54 33 56	4·858726	72231	13·680	„
	Tadkeshvar	s.	38 47 13	4·567402	36932	6·995	„
261	Bharan	h.s.	61 5 38	4·712745	51611	9·775	„
	Tarsári	s.	80 7 9	4·764042	58082	11·000	„
	Bharan	h.s.	62 46 3	4·615374	41245	7·812	„
262	Tarsári	s.	64 27 59	4·621762	41856	7·927	„
	Adol	„	52 45 58	4·567402	36932	6·995	„
	Bharan	h.s.	59 16 13	4·578997	37931	7·184	„
263	Adol	s.	49 11 27	4·523740	33399	6·326	„
	Bharkodra	h.s.	71 32 20	4·621762	41856	7·927	„
	Adol	s.	54 15 15	4·565049	36732	6·957	„
264	Bharkodra	h.s.	68 48 19	4·625281	42197	7·992	„
	Broach	s.	56 56 26	4·578997	37931	7·184	„
	Adol	s.	61 14 59	4·664658	46202	8·750	„
265	Broach	„	65 33 2	4·680993	47973	9·086	„
	Bhádbhút	t.s.	53 11 59	4·625281	42197	7·992	„
	Broach	s.	52 35 33	4·675758	47398	8·977	„
266	Bhádbhút	t.s.	76 40 0	4·763887	58061	10·996	„
	Ankot	s.	50 44 27	4·664658	46202	8·750	„
	Bhádbhút	t.s.	44 56 45	4·564081	36651	6·941	„
267	Ankot	s.	69 2 53	4·685298	48451	9·176	„
	Píplia	„	66 0 22	4·675758	47398	8·977	„
	Ankot	s.	63 46 4	4·589078	38822	7·353	„
268	Píplia	„	58 21 46	4·566407	36847	6·979	„
	Kolvanna	„	57 52 10	4·564081	36651	6·941	„
	Píplia	s.	65 30 42	4·582311	38222	7·239	12
269	Kolvanna	„	46 55 11	4·486807	30677	5·810	„
	Kesvan	„	67 34 7	4·589078	38822	7·353	„
	Kolvanna	s.	57 39 26	4·666069	46352	8·779	„
270	Kesvan	„	78 10 56	4·729978	53700	10·171	„
	Tankári	„	44 9 38	4·582311	38222	7·239	„
	Kolvanna	s.	50 24 36	4·670431	46820	8·867	„
271	Tankári	„	67 28 36	4·749130	56122	10·629	„
	Jambusar	„	62 6 48	4·729978	53700	10·171	„
*	Tankári	s.	44 18 42	4·519811	33099	6·269	„
272	Jambusar	„	54 31 0	4·586383	38582	7·307	„
	Tundaj	„	81 10 18	4·670431	46820	8·867	„
	Páthal, XXVIII		70 10 39	4·975246	94460	17·890	„
273	Dungar	h.s.	64 2 4	4·955560	90273	17·097	„
	Chámpávádi Hill			4·857150	71970	13·631	
	Páthal, XXVIII		8 33 12	4·155897	14318	2·712	„
274	Sádadván	h.s.	69 40 5	4·955560	90273	17·097	„
	Chámpávádi Hill			4·974256	94244	17·849	
	Dungar	h.s.	9 13 26	4·019577	10461	1·981	„
275	Mákna	s.	129 33 0	4·701756	50322	9·531	„
	Karodra Tree			4·633569	43010	8·146	
	Kámrej	h.s.	10 19 17	4·019577	10461	1·981	„
276	Mákna	s.	137 42 50	4·594220	39284	7·440	„
	Karodra Tree			4·490094	30910	5·854	
	Kámrej	h.s.	68 10 43	4·725815	53188	10·074	„
277	Mákna	s.	79 10 19	4·750303	56273	10·658	„
	Surat Mosque			4·490094	30910	5·854	
	Dungar	h.s.	5 2 10	4·387906	24429	4·627	„
278	Tadkeshvar	s.	7 33 10	4·563218	36578	6·928	„
	Ghalha Hill Bush			4·782857	60654	11·487	
	Dungar	h.s.	5 58 58	3·945762	8826	1·672	„
279	Kámrej	„	134 15 52	4·782761	60640	11·485	„
	Párdi Tree			4·733596	54150	10·256	
	Dungar	h.s.	40 44 41	4·598656	39688	7·517	„
280	Mákna	s.	94 14 15	4·782761	60640	11·485	„
	Párdi Tree			4·633569	43010	8·146	

* The continuation of the triangulation will be found in the Synoptical Volume of the Gujarát Longitudinal Series.

No. of Triangle	Station		Corrected Plane Angle	Distance			Theodolite used
				Log. feet	Feet	Miles	
			° ′ ″				Inch
	Dungar	h.s.	56 39 42	4·764769	58179	11·019	12
281	Tadkeshvar	s.	62 46 0	4·791829	61920	11·727	,,
	Tukhed Hill			4·782857	60654	11·487	
					4		
	Páthal, XXVIII		41 0 4	4·791829	61920	11·727	,,
282	Dungar	h.s.	8 41 21	4·154066	14258	2·700	,,
	Tukhed Hill			4·857150	71970	13·631	
	Tadkeshvar	s.	80 27 25	4·929424	85001	16·099	,,
283	Bharan	h.s.	57 10 40	4·859939	72433	13·718	,,
	Lindia Hill			4·764042	58082	11·000	
	Tadkeshvar	s.	76 12 50	4·842886	69644	13·190	,,
284	Bharan	h.s.	49 41 40	4·737881	54687	10·357	,,
	Ratola Peak			4·764042	58082	11·000	
	Tadkeshvar	s.	32 46 43	4·448270	28072	5·317	,,
285	Tarsári	,,	62 43 52	4·663593	46089	8·729	,,
	Nandáv Tree			4·712745	51611	9·775	
					1		
	Tadkeshvar	s.	6 0 30	4·119342	13163	2·493	,,
286	Bharan	h.s.	21 30 2	4·663593	46089	8·729	,,
	Nandáv Tree			4·764042	58082	11·000	
	Bharan	h.s.	67 46 0	4·508265	32230	6·104	,,
287	Bharkodra	,,	5 48 58	3·547582	3528	0·668	,,
	Sida Temple			4·523740	33399	6·326	
	Tarsári	s.	32 0 10	4·375972	23767	4·501	,,
288	Adol	,,	34 52 45	4·409009	25645	4·857	,,
	Pánoli Building			4·615374	41245	7·812	
	Adol	s.	1 56 24	4·041165	10994	2·082	,,
289	Bharkodra	h.s.	4 46 2	4·431211	26991	5·112	,,
	Bharkodra Tree			4·578997	37931	7·184	
					9		
	Bharan	h.s.	19 7 44	4·041165	10994	2·082	,,
290	Bharkodra	,,	76 18 22	4·513173	32597	6·174	,,
	Bharkodra Tree			4·523740	33399	6·326	
	Bharkodra	h.s.	55 26 0	4·551781	35627	6·748	,,
291	Broach	s.	66 27 44	4·598408	39665	7·512	,,
	Nángla Tree			4·565049	36732	6·957	
					0		
	Broach	s.	56 1 44	4·597169	39552	7·491	,,
292	Bhádbhút	t.s.	48 19 59	4·551781	35627	6·748	,,
	Nángla Tree			4·664658	46202	8·750	

No. of Triangle	Station		Corrected Plane Angle	Distance			Theodolite used
				Log. feet	Feet	Miles	
			° ′ ″				Inch
	Adol	s.	55 14 38	4·554167	35823	6·785	12
293	Broach	,,	20 10 2	4·177032	15033	2·847	,,
	Sajod Mosque			4·625281	42197	7·992	
					15		
	Adol	s.	109 29 53	4·655388	45226	8·566	,,
294	Bharkodra	h.s.	18 15 35	4·177032	15033	2·847	,,
	Sajod Mosque			4·578997	37931	7·184	
	Adol	s.	19 11 30	4·164625	14609	2·767	,,
295	Bharkodra	h.s.	39 24 15	4·450415	28211	5·343	,,
	Ankleshvar Railway Station			4·578997	37931	7·184	
	Broach	s.	39 2 17	4·467846	29366	5·562	,,
296	Bhádbhút	t.s.	43 14 13	4·504319	31939	6·049	,,
	Haripura Tomb			4·664658	46202	8·750	
	Bharkodra	h.s.	6 9 37	3·620552	4174	0·791	,,
297	Broach	s.	103 2 32	4·578561	37893	7·177	,,
	Broach Cotton Press No. 1			4·565049	36732	6·957	
					7		
	Broach	s.	19 26 56	4·626225	42289	8·009	,,
298	Bhádbhút	t.s.	1 53 0	3·620552	4174	0·791	,,
	Broach Cotton Press No. 1			4·664658	46202	8·750	
	Bharkodra	h.s.	2 43 21	3·288486	1943	0·368	,,
299	Broach	s.	113 23 22	4·574565	37546	7·111	,,
	Broach Cotton Press No. 2			4·565049	36732	6·957	
					6		
	Broach	s.	71 31 37	4·759481	57475	10·885	,,
300	Ankot	,,	1 50 15	3·288486	1943	0·368	,,
	Broach Cotton Press No. 2			4·763887	58061	10·996	
	Adol	s.	52 25 10	4·566137	36825	6·974	,,
301	Bharkodra	h.s.	72 51 47	4·647417	44403	8·410	,,
	Broach Mosque			4·578997	37931	7·184	
					4		
	Adol	s.	63 5 4	4·685025	48420	9·170	,,
302	Bhádbhút	t.s.	54 51 22	4·647417	44403	8·410	,,
	Broach Mosque			4·680993	47973	9·086	
	Broach	s.	7 19 40	4·299869	19947	3·778	,,
303	Bhádbhút	t.s.	9 51 20	4·427618	26768	5·070	,,
	Hinglot Building			4·664658	46202	8·750	
	Bhádbhút	t.s.	10 5 20	4·463872	29099	5·511	,,
304	Píplia	s.	6 52 10	4·298155	19868	3·763	,,
	Amleshvar Building			4·685298	48451	9·176	

No. of Triangle	Station		Corrected Plane Angle	Distance			Theodolite used
				Log. feet	Feet	Miles	
			° ′ ″				Inch
	Ankot	S.	8 34 40	4·377902	23873	4·521	12
305	Kolvanna	„	4 43 55	4·120697	13204	2·501	„
	Vágra Kacheri			4·566407	36847	6·979	
	Ankot	S.	44 19 41	4·412869	25874	4·900	„
306	Píplia	„	53 51 56	4·475752	29906	5·664	„
	Páháj Tree			4·564081	36651	6·941	
					2		
	Ankot	S.	19 26 23	4·120060	13184	2·497	„
307	Kolvanna	„	49 1 3	4·475752	29906	5·664	„
	Páháj Tree			4·566407	36847	6·979	
	Kolvanna	S.	40 42 56	4·562337	36504	6·914	„
308	Tankári	„	65 37 32	4·707342	50973	9·654	„
	Gandhar Building			4·729978	53700	10·171	
	Kolvanna	S.	84 6 3	4·771230	59051	11·184	„
309	Jambusar	„	24 55 42	4·398317	25022	4·739	„
	Chanchvel Tree			4·749130	56122	10·629	
					4		
	Kolvanna	S.	23 57 59	4·265197	18416	3·488	„
310	Kesvan	„	33 29 51	4·398317	25022	4·739	„
	Chanchvel Tree			4·582311	38222	7·239	

No. of Triangle	Station		Corrected Plane Angle	Distance			Theodolite used
				Log. feet	Feet	Miles	
			° ′ ″				Inch
	Kolvanna	S.	172 7 23	4·748499	56040	10·614	12
311	Kesvan	„	2 30 49	4·253669	17934	3·397	„
	Kedváda Tree			4·582311	38222	7·239	
					0		
	Ankot	S.	28 56 0	4·253669	17934	3·397	„
312	Kolvanna	„	67 20 2	4·534102	34206	6·478	„
	Kedváda Tree			4·566407	36847	6·979	
	Kesvan	S.	14 55 0	4·081570	12066	2·285	„
313	Tankári	„	66 31 10	4·633400	42993	8·143	„
	Tankári Custom House			4·666069	46352	8·779	
	Tankári	S.	30 35 0	4·411233	25777	4·882	„
314	Jambusar	„	36 57 20	4·483709	30459	5·769	„
	Khánpur House			4·670431	46820	8·867	
	Tankári	S.	2 31 30	3·991942	9816	1·859	„
315	Tundaj	„	167 30 13	4·683157	48212	9·131	„
	Tundaj House			4·586383	38582	7·307	

January, 1893.

J. ECCLES,

In charge of Computing Office.

SINGI MERIDIONAL SERIES.

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

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

Name of Station with Azimuths of surrounding Points		° ′ ″	No. of Triangle giving Distance
Adol s.			
Bhádbhút	t.s.	141 39 41	265
Sajod Mosque		147 40 2	293
Broach	s.	202 54 40	264
Broach Mosque		204 44 45	301
Ankleshvar Railway Station		237 58 25	295
Bharkodra Tree		255 13 31	289
Bharkodra	h.s.	257 9 55	263
Bharan	„	306 21 22	262
Pánoli Building		324 14 35	288
Tarsári	s.	359 7 20	262
Álamvádi, XXVII			
Kesarva, XXV		151 15 34·65	82
Juna Ráj Hill Mark (helio.)		208 45 54	141
Bábásiráj, XXIV		240 23 51·00	31
Ságbára, XXVI		270 38 15·48	31
Ámjio, VII			
Deokotla, IX		16 43 14·55	9
Ajni Hill Mark (helio.)		68 38 3	103
Kua, VIII		81 41 51·36	8
Sagwára, V		126 19 17·13	7
Lohária, VI		174 58 32·99	7
Lohária Hill Temple No. 2		175 54 3	95
Lohária Hill Temple No. 1		177 38 16	94
Ámjio	h.s.	265 4 48	100

Name of Station with Azimuths of surrounding Points		° ′ ″	No. of Triangle giving Distance
Ámjio h.s.			
Deokotla, IX		17 31 52	99
Kua, VIII		81 44 12	99
Ámjio, VII		85 4 53	100
Bánswára Palace		267 17 45	101
Bánswára Hill Math		273 7 6	102
Anjini, I			
Dholagarh Hill		0 48 48	89
Tukwása, III		14 1 46·72	3
Salúmbar Hill Tree		39 34 23	86
Sísa, II		84 35 32·94	2
Palia Hill Mark (helio.)		87 10 47	84
Lakarwás, XXXII*		135 43 33·35	1
Tána, XXIX*		185 40 42·03	1
Kanor Palace		212 4 8	83
Anjini h.s.			
Tringalvádi	h.s.	3 26 12·2	62
Kanjangad	„	44 48 54·3	65
Bhorgad, XXXIV		218 34 5·2	61
Bahula	„	285 54 37·0	61
Kánvai	„	342 58 7·2	63
Ankai Tankai, XXXV			
Hevargaon, XXXVIII		16 25 36·85	44
Kalsúbái, XXXIX		50 10 21·02	45
Sinnar	h.s.	53 11 23	180
Sinnar, XXXVII		54 36 4·27	43

* These stations appertain to the Karáchi Longitudinal Series.

Name of Station with Azimuths of surrounding Points		° ′ ″	No. of Triangle giving Distance
Ankai Tankai, XXXV—(*Contd.*)			
Pándu Lena Hill		69 32 17	196
Lonjái	h.s.	70 20 44	178
Chamberlena Hill Tree		79 7 49	191
Sulia Peak		80 29 57	188
Bhorgad, XXXIV		84 20 7·69	40
Saptashring Hill		111 48 37	165
Dhodap Hill Pagoda		116 36 0	169
Rámahabit Hill		125 46 38	173
Mánur Peak		135 18 8	148
Sáler, XXXII		138 11 15·50	40
Mesankhed Hill		140 54 18	181
Ankot s.			
Bhádbhút	t.s.	11 46 21	266
Píplia	s.	80 49 14	267
Páháj Tree		125 8 55	306
Vágra Kacheri		136 0 38	305
Kolvanna	„	144 35 18	268
Kedváda Tree		173 31 18	312
Broach Cotton Press No. 2		319 11 39	300
Broach	„	321 1 54	266
Áupa h.s.			
Karanja, XXXIV*		61 29 42	220
Thána	h.s.	94 10 58	221
Kámandurg, XL		110 52 10	220
Aurangpur h.s.			
Málunje Hill Pagoda		35 32 29	247
Hevargaon, XXXVIII		55 35 29	246
Dudeshvar	h.s.	95 38 54	246
Bábásiráj, XXIV			
Ságbára, XXVI		27 59 23·95	30
Álamvádi, XXVII		60 32 49·00	31
Kesarva, XXV		86 28 33·49	29
Juna Ráj Hill Mark (helio.)		91 31 20	140
Sidhpur, XXIII		125 26 47·23	28
Karáli, XXII		172 39 2·51	28
Bahula h.s.			
Kalsúbái, XXXIX		5 13 14·1	56
Tringalvádi	h.s.	45 36 42·9	59
Kánvai	„	46 39 7·3	63
Anjini	„	105 57 58·7	61
Bhorgad, XXXIV		180 22 14·9	55
Sinnar, XXXVII		267 32 46·8	55
Patta	„	331 9 42·8	57
Kandoba	„	345 0 2·6	64
Báleshvar h.s.			
Singi, XXX*		42 46 51	237
Kalsúbái, XXXIX		111 29 20	236
Aundha Hill Fort		136 46 10	238
Ád Hill Fort		144 9 53	240
Sangamner Hill Pagoda		207 39 56	243
Dudeshvar	h.s.	232 43 10	236
Hevargaon, XXXVIII		245 30 50	243

Name of Station with Azimuths of surrounding Points		° ′ ″	No. of Triangle giving Distance
Básgad h.s.			
Gambhirgad, XXXVI		111 46 25	186
Kem	h.s.	204 34 25	185
Rámsej Fort Pagoda		238 15 48	190
Kalsúbái, XXXIX		318 50 6	185
Ajuba Hill		330 50 54	231
Bhádbhút t.s.			
Píplia	s.	146 48 59	267
Amleshvar Building		156 54 19	304
Ankot	„	191 45 44	266
Hinglot Building		258 34 24	303
Broach Mosque		266 46 21	302
Broach	„	268 25 44	265
Broach Cotton Press No. 1		270 18 44	298
Haripura Tomb		311 39 57	296
Nángla Tree		316 45 43	292
Adol	„	321 37 43	265
Bharan h.s.			
Tadkeshvar	s.	2 31 51	260
Nandáv Tree		24 1 53	286
Tarsári	„	63 37 29	261
Sida Temple		117 53 45	287
Adol	„	126 23 32	262
Bharkodra Tree		166 32 1	290
Bharkodra	h.s.	185 39 45	263
Lindia Hill		305 21 11	283
Páthal, XXVIII		307 57 55	260
Ratola Peak		312 50 11	284
Bharkodra h.s.			
Bharan	h.s.	5 39 58	263
Sida Temple		11 28 56	287
Adol	s.	77 12 18	263
Bharkodra Tree		81 58 20	289
Nángla Tree		90 34 37	291
Sajod Mosque		95 27 53	294
Ankleshvar Railway Station		116 36 33	295
Broach Cotton Press No. 1		139 51 0	297
Broach	s.	146 0 37	264
Broach Cotton Press No. 2		148 43 58	299
Broach Mosque		150 4 5	301
Bhor, XVII			
Kandálva, XIX		6 49 48·25	21
Pávágad, XX		55 9 47·74	22
Kántáveda Hill Mark (helio.)		80 14 17	126
Richhia, XVIII		102 31 53·44	20
Richhia	h.s.	119 29 48	118
Godhra House		121 21 2	120
Káliákua Hill		133 27 32	117
Kágarol, XIV		145 47 39·04	17
Patángdi, XIII		196 45 53·91	17
Devgad Báriya Hill		236 21 16	128
Bhorgad, XXXIV			
Bahula	h.s.	0 22 16·9	55
Kalsúbái, XXXIX		2 58 11·29	45

* These stations appertain to the Bombay Longitudinal Series.

Name of Station with Azimuths of surrounding Points		° ′ ″	No. of Triangle giving Distance
Bhorgad, XXXIV—(*Contd.*)			
Ghargad Hill Fort		21 7 40	197
Anjini	h.s.	38 37 30·1	61
Vághera Hill		73 8 54	198
Gambhirgad, XXXVI		84 14 42·73	42
Baronda Peak		87 7 21	187
Pilva, XXXI		148 29 7·96	39
Kem	„	173 19 7	177
Nalvári Hill Bush		189 45 17	171
Tahola Hill		191 28 57	160
Achla Hill Fort		192 49 43	162
Mánur Peak		195 45 23	147
Sáler, XXXII		197 25 8·32	39
Ahivant Fort		201 12 40	163
Saptashring Hill		210 22 41	164
Márkinda Hill Fort		213 51 0	166
Rávlya Fort		219 6 19	167
Jauliádongar Hill		221 1 37	168
Dhodap Hill Pagoda		226 4 22	170
Talegaon Peak		241 24 57	172
Rámahabit Hill		261 12 8	174
Katarvádi Hill East Point		262 37 38	175
Gorakhnáth Hill		263 23 35	176
Ankai Tankai, XXXV		264 5 25·81	40
Lonjái	h.s.	273 16 49	177
Varandi Peak		301 8 54	193
Sinnar, XXXVII		312 19 35·81	43
Sinnar	„	312 42 48	179
Chamberlena Hill Tree		314 47 36	191
Sulia Peak		329 39 2	188
Násik Idga		342 16 31	194
Pándu Lena Hill		356 25 47	195
Bítangad h.s.			
Kalsúbái, XXXIX		61 24 15·2	79
Katlia	h.s.	130 24 16·0	79
Patta	„	208 10 47·1	80
Broach s.			
Adol	s.	22 55 43	264
Nángla Tree		32 27 1	291
Sajod Mosque		43 5 45	293
Haripura Tomb		49 26 28	296
Broach Cotton Press No. 1		69 1 49	297
Bhádbhút	t.s.	88 28 45	265
Hinglot Building		95 48 25	303
Ankot	s.	141 4 18	266
Broach Cotton Press No. 2		212 35 55	299
Bharkodra	h.s.	325 59 17	264
Deokotla, IX			
Jhálod Hill Mark		8 22 40	106
Uchak, XI		24 52 14·73	11
Tembla, X		75 53 30·47	10
Sarmi Muváda Hill Mark		87 21 11	105
Kua, VIII		125 58 27·97	9
Ajni Hill Mark (helio.)		170 44 37	103
Ámjio, VII		196 41 34·33	9
Ámjio	h.s.	197 30 6	99
Bánswára Palace		229 0 14	101

Name of Station with Azimuths of surrounding Points		° ′ ″	No. of Triangle giving Distance
Deokotla, IX—(*Contd.*)			
Bánswára Hill Math		233 9 3	102
Chokhla Hill Tree		239 53 52	104
Dhoria h.s.			
Guia	h.s.	200 50 22·6	76
Kánvai	„	284 21 11·9	75
Tringalvádi	„	344 5 51·7	75
Dongri No. 1 h.s.			
Umbargaon Tower		150 55 0	217
Gambhirgad, XXXVI		274 9 54	214
Kohoj	h.s.	338 57 24	214
Dongri No. 2 h.s.			
Párnera, XXXIII		193 9 6	216
Gambhirgad, XXXVI		273 20 16	215
Kohoj	h.s.	338 46 55	215
Asheri Hill Fort		339 47 14	219
Dopári, XXIX			
Pilva, XXXI		36 17 0·83	36
Tarbhán, XXX		83 31 43·08	35
Songad Hill Mark		117 45 1	142
Páthal, XXVIII		121 30 58·56	34
Ságbára, XXVI		185 45 35·01	34
Sáler, XXXII		331 22 24·92	37
Dudeshvar h.s.			
Málunje Hill Pagoda		16 20 58	247
Hevargaon, XXXVIII		46 5 38	235
Báleshvar	h.s.	52 47 26	236
Hevargaon Hill Pagoda		55 17 13	244
Kalsúbái, XXXIX		90 23 52	234
Aurangpur	„	275 37 58	246
Varsinde	„	326 44 21	249
Párner, XXVI*		355 25 11	234
Dungar h.s.			
Tarbhán, XXX		11 26 45	256
Karodra Tree		75 42 38	275
Mákna	s.	84 56 4	259
Kámrej	h.s.	119 41 47	258
Párdi Tree		125 40 45	279
Tadkeshvar	s.	151 57 48	257
Ghalha Hill Bush		156 59 58	278
Tukhed Hill		208 37 30	281
Páthal, XXVIII		217 18 51	255
Sádadván	h.s.	277 13 34	255
Chámpávádi Hill		281 20 55	273
Dúngarpur, IV			
Sísa, II		180 41 5·17	4
Kharji Hill Math		195 24 47	91
Tukwása, III		250 19 17·71	4
Sagwára, V		297 22 50·35	5

* This station appertains to the Bombay Longitudinal Series.

Name of Station with Azimuths of surrounding Points			°	′	″	No. of Triangle giving Distance
Gambhirgad, XXXVI						
Kámandurg, XL			7	27	0·40	50
Kohoj		h.s.	8	48	12	205
Asheri Hill Fort			27	32	17	218
Káldurg		„	31	30	49	207
Mahálakshmi Peak			46	51	4	202
Dongri	No. 2	„	93	24	51	215
Dongri	No. 1	„	94	14	29	214
Umbargaon Tower			117	46	4	217
Daman Idga			156	2	2	158
Párnera, XXXIII			169	2	23·92	41
Pilva, XXXI			208	17	37·80	41
Varvand		„	221	45	39	152
Kem		„	235	14	10	143
Tahola Hill			242	1	19	161
Bhorgad, XXXIV			264	0	33·59	42
Rámsej Fort Pagoda			264	41	22	189
Vághera Hill			270	51	8	198
Trimbak		„	287	8	31	184
Harish Hill Fort			290	16	41	200
Básgad		„	291	38	50	186
Kalsúbái, XXXIX			305	47	22·99	46
Ajuba Hill			314	12	30	231
Ghargad h.s.						
Kánvai		h.s.	14	37	8·8	73
Guia		„	72	25	27·0	74
Hatni		„	337	58	22·4	73
Ghontvál h.s.						
Párnera, XXXIII			95	47	35	156
Nikorda		h.s.	132	11	12	157
Pilva, XXXI			193	18	39	156
Ghoráráo, XVI						
Vardhari, XV			203	40	51·71	16
Rena Hill Mark (helio.)			247	13	44	113
Kágarol, XIV			265	48	31·98	16
Richhia, XVIII			305	2	46·56	19
Guia h.s.						
Dhoria		h.s.	20	50	54·4	76
Ghargad		„	252	23	35·6	74
Káuvai		„	326	27	30·3	74
Hatni h.s.						
Mhordan		h.s.	9	4	55·5	71
Kánvai		„	76	57	40·9	71
Ghargad		„	157	59	13·0	73
Kandoba		„	276	6	18·8	72
Katlia		„	337	42	49·6	78
Hevargaon, XXXVIII						
Singi, XXX*			45	28	13·13	51
Báleshvar		h.s.	65	32	36	243
Sathvádi Hill Pagoda			68	45	30	233
Kalsúbái, XXXIX			104	6	47·24	48

Name of Station with Azimuths of surrounding Points			°	′	″	No. of Triangle giving Distance
Hevargaon, XXXVIII—(*Contd.*)						
Sinnar, XXXVII			152	45	52·22	44
Hevargaon Hill Pagoda			168	39	53	244
Sangamner Hill Pagoda			170	22	50	243
Vatmái Hill Pagoda			179	37	41	242
Ankai Tankai, XXXV			196	21	7·77	44
Dudeshvar		h.s.	226	3	3	235
Aurangpur		„	235	31	58	246
Varsinde Pagoda			282	6	35	250
Tukái Hill Pagoda			315	40	1	252
Párner, XXVI*			338	43	36·50	53
Jambusar s.						
Chanchvel Tree			22	20	49	309
Khánpur House			22	34	35	314
Tankári		s.	59	31	55	271
Tundaj		„	114	2	55	272
Kolvanna		„	357	25	7	271
Janjira s.						
Káldurg		h.s.	198	55	53	213
Kohoj		„	228	36	22	212
Kámandurg, XL			289	52	54	212
Jathrabhor, XII						
Kágarol, XIV			7	10	38·82	14
Rena Hill Mark (helio.)			56	40	19	114
Kantár Hill			95	38	32	112
Vardhari, XV			107	54	38·57	15
Tembla, X			221	2	9·65	12
Bhuver Hill			263	39	41	108
Uchak, XI			265	32	21·81	12
Deloch Hill Platform (helio.)			270	26	58	110
Patángdi Hill Mark			308	6	49	115
Patángdi, XIII			308	7	34·84	13
Kágarol, XIV						
Richhia, XVIII			9	54	8·86	18
Ghoráráo, XVI			85	55	23·99	16
Rena Hill Mark (helio.)			103	9	40	113
Vardhari, XV			139	18	12·20	15
Kantár Hill			153	24	48	112
Jathrabhor, XII			187	10	11·92	14
Patángdi Hill Mark			272	22	55	115
Patángdi, XIII			274	44	6·35	14
Devgad Báriya Hill			308	4	0	122
Bhor, XVII			325	43	43·30	17
Richhia		h.s.	348	7	1	119
Káldurg h.s.						
Janjira		s.	18	57	32	213
Tárápur Fort		„	143	22	30	208
Gambhirgad, XXXVI			211	26	7	207
Kohoj		h.s.	276	28	27	206
Vajrábái Hill Mark			306	49	44	210
Takmak Hill Mark			314	13	7	209
Gotára Hill Fort			320	36	34	211
Kámandurg, XL			336	32	35	206

* These stations appertain to the Bombay Longitudinal Series.

Name of Station with Azimuths of surrounding Points		° ′ ″	No. of Triangle giving Distance
Kalsúbái, XXXIX			
Singi, XXX*		3 58 37·12	51
Kámandurg, XL		73 2 14·15	50
Máhuli	h.s.	73 10 37	229
Kulang Hill Mark		80 38 41	230
Kohoj	„	96 6 28	204
Bhopálgad Hill Fort		107 58 57	201
Mahálakshmi Peak		113 59 56	202
Gambhirgad, XXXVI		126 0 47·02	46
Tringalvádi	„	127 54 49·4	59
Básgad	„	138 55 55	185
Trimbak	„	150 27 29	183
Mhordan	„	162 20 30·5	70
Kem	„	179 2 15	143
Bhorgad, XXXIV		182 57 36·62	45
Bahula	„	185 13 8·6	56
Katlia	„	193 53 53·0	79
Aundha Hill Fort		219 41 1	238
Sinnar, XXXVII		224 14 6·03	47
Patta	„	227 16 26·2	58
Ankai Tankai, XXXV		229 55 15·27	45
Ád Hill Fort		233 31 29	240
Bítangad	„	241 22 27·9	79
Vatmái Hill Pagoda		262 4 8	241
Dudeshvar	„	270 10 57	234
Hevargaon Hill Pagoda		280 47 44	245
Hevargaon, XXXVIII		283 56 22·27	48
Báleshvar	„	291 20 41	236
Párner, XXVI*		310 0 8·47	54
Harischandragad Hill Fort		342 44 20	232
Khandeshvar Hill Pagoda		359 44 1	253
Kámandurg, XL			
Karanja, XXXIV*		2 2 3·13	220
Thána	h.s.	5 56 28	222
Dahisar Hill Mark		20 23 46	224
Madh Building		32 32 6	227
Janjira	s.	109 57 23	212
Káldurg	h.s.	156 35 25	206
Kohoj	„	185 38 16	204
Gambhirgad, XXXVI		187 25 8·28	50
Kalsúbái, XXXIX		252 47 12·29	50
Harischandragad Hill Fort		269 32 10	232
Áupa	„	290 40 49	220
Bhiwndi Hill		301 51 43	223
Singi, XXX*		302 59 18·35	52
Kalva Hill Mark		343 50 59	226
Thána Church		353 45 44	225
Kámrej h.s.			
Karodra Tree		2 28 11	276
Surat Mosque		60 19 37	277
Párdi Tree		165 22 55	279
Tadkeshvar	s.	214 41 55	258
Dungar	h.s.	299 38 47	258
Mákna	s.	352 8 54	259
Kandálva, XIX			
Masábár, XXI		27 57 52·47	24
Landiváda Hill Mark		44 53 18	132

Name of Station with Azimuths of surrounding Points		° ′ ″	No. of Triangle giving Distance
Kandálva, XIX—(*Contd.*)			
Pávágad, XX		88 51 3·95	22
Pávágad Hill Temple		89 2 1	127
Kántáveda Hill Mark (helio.)		144 10 22	125
Richhia, XVIII		144 25 19·60	21
Bhor, XVII		186 49 14·20	21
Salesra Hill Mark (helio.)		297 22 56	129
Asalia Hill Mark (helio.)		311 55 30	130
Karáli, XXII		349 36 53·36	25
Kandoba h.s.			
Katlia	h.s.	21 25 23·8	77
Mhordan	„	44 18 21·8	67
Kánvai	„	86 21 22·5	64
Hatni	„	96 7 45·3	72
Bahula	„	165 0 35·6	64
Patta	„	317 17 7·5	69
Kanjangad h.s.			
Anjini	h.s.	224 46 43·8	65
Kánvai	„	287 46 35·1	65
Tringalvádi	„	320 39 21·7	66
Kánvai h.s.			
Tringalvádi	h.s.	43 42 0·8	66
Dhoria	„	104 22 56·5	75
Kanjangad	„	107 49 43·7	65
Guia	„	146 28 43·3	74
Anjini	„	162 59 5·9	63
Ghargad	„	194 36 30·7	73
Bahula	„	226 36 45·0	63
Hatni	„	256 56 12·4	71
Kandoba	„	266 18 27·6	64
Mhordan	„	324 13 3·6	67
Karáli, XXII			
Sidhpur, XXIII		73 49 13·63	27
Bodeli Hill Mark (helio.)		124 21 56	138
Masábár, XXI		136 42 55·35	25
Kandálva, XIX		169 38 13·02	25
Asalia Hill Mark (helio.)		194 32 49	131
Gajra Hill Mark (helio.)		207 53 12	139
Bábásiráj, XXIV		352 37 51·35	28
Karanja, XXXIV*			
Thána	h.s.	180 8 51	221
Kámandurg, XL		182 1 40·03	220
Kalva Hill Mark		192 24 53	226
Máhuli	„	205 35 24	228
Áupa	„	241 17 58	220
Singi, XXX*		262 29 50·69	228
Katlia h.s.			
Kalsúbái, XXXIX		10 54 17·9	79
Hatni	h.s.	157 43 35·5	78
Kandoba	„	201 24 43·4	77
Patta	„	265 27 12·7	77
Bítangad	„	310 22 53·4	79

* These stations appertain to the Bombay Longitudinal Series.

Name of Station with Azimuths of surrounding Points		° ′ ″	No. of Triangle giving Distance
Kem h.s.			
Trimbak	h.s.	16 17 33	183
Básgad	„	24 40 12	185
Gambhirgad, XXXVI		55 27 32	143
Varvand	„	63 17 41	151
Párnera, XXXIII		96 28 45	144
Nikorda	„	102 30 39	153
Ajmirgad Tree		119 30 35	149
Pilva, XXXI		122 1 16	154
Rúpgad	„	169 15 56	145
Lonjái	„	309 34 41	177
Sinnar	„	333 0 53	179
Bhorgad, XXXIV		353 18 20	177
Kalsúbái, XXXIX		359 2 13	143
Kesarva, XXV			
Páthal, XXVIII		20 46 53·99	33
Sidhpur, XXIII		194 53 14·22	29
Bábásiráj, XXIV		266 17 9·15	29
Ságbára, XXVI		297 8 47·94	30
Álamvádi, XXVII		331 13 11·16	32
Kesvan s.			
Tankári Custom House		156 12 57	313
Tankári	s.	171 7 57	270
Chanchvel Tree		215 49 2	310
Kolvanna	„	249 18 53	269
Kedváda Tree		251 49 42	311
Píplia	„	316 53 0	269
Kohoj h.s.			
Kámandurg, XL		5 38 46	204
Takmak Hill Mark		22 39 16	209
Janjira	s.	48 41 21	212
Káldurg	h.s.	96 31 47	206
Tárápur Fort	s.	123 23 5	208
Asheri Hill Fort		157 12 27	218
Dongri	No. 2 h.s.	158 50 22	215
Dongri	No. 1 „	159 0 51	214
Gambhirgad, XXXVI		188 47 4	205
Kalsúbái, XXXIX		275 51 56	204
Vajrábái Hill Mark		340 48 30	210
Gotára Hill Fort		348 44 47	211
Kolvanna s.			
Páháj Tree		13 34 57	307
Píplia	s.	22 26 4	268
Kesvan	„	69 21 15	269
Gandhar Building		86 17 45	308
Chanchvel Tree		93 19 14	309
Tankári	„	127 0 41	270
Jambusar	„	177 25 17	271
Kedváda Tree		257 13 52	311
Ankot	„	324 33 54	268
Vágra Kacheri		329 17 49	305

Name of Station with Azimuths of surrounding Points		° ′ ″	No. of Triangle giving Distance
Kua, VIII			
Tembla, X		5 56 15·92	10
Ghatonogám Hill Math		170 51 54	98
Sagwára, V		203 15 31·41	8
Ámjio, VII		261 34 3·37	8
Ámjio	h.s.	261 36 20	99
Deokotla, IX		305 52 22·13	9
Lakarwás, XXXII*			
Sísa, II		16 59 16·01	2
Náráyangad Hill Math		205 8 19	82
Tána, XXIX*		240 10 36·37	1
Intáli Temple		241 58 26	81
Kanor Palace		283 38 2	83
Anjini, I		315 35 56·15	1
Lohária, VI			
Sagwára Hill Temple No. 2		64 22 33	97
Sagwára, V		68 38 51·81	6
Sagwára Hill Temple No. 1		73 50 45	96
Tukwása, III		139 56 43·19	6
Sábla Hill Tree		156 22 54	93
Salúmbar Hill Tree		158 55 22	87
Dholagarh Hill		167 14 33	90
Lohária Hill Temple No. 1		302 58 2	94
Lohária Hill Temple No. 2		335 24 54	95
Ámjio, VII		354 58 0·91	7
Lonjái h.s.			
Bhorgad, XXXIV		93 25 51	177
Kem	h.s.	129 44 30	177
Mesankhed Hill		221 1 27	181
Ankai Tankai, XXXV		250 15 4	178
Máhuli h.s.			
Karanja, XXXIV†		25 41 15	228
Aundha Hill Fort		243 23 55	239
Kalsúbái, XXXIX		253 1 29	229
Singi, XXX†		322 53 9	228
Mákna s.			
Karodra Tree		34 26 20	275
Surat Mosque		92 58 51	277
Párdi Tree		170 39 5	280
Kámrej	h.s.	172 9 10	259
Dungar	„	264 53 20	259
Mandanpur h.s.			
Mandanpur Hill		56 32 1	137
Baroda Clock Tower (helio.)		88 27 5	136
Pávágad, XX		180 39 49	134
Vandra Hill		259 59 41	135
Masábár, XXI		267 31 18	134

* These stations appertain to the Karáchi Longitudinal Series.

† These stations appertain to the Bombay Longitudinal Series.

Name of Station with Azimuths of surrounding Points		° ′ ″	No. of Triangle giving Distance
Masábár, XXI			
Bodeli Hill Mark (helio.)		0 26 33	138
Sidhpur, XXIII		40 44 31·82	26
Mandanpur Hill		84 1 41	137
Mandanpur	h.s.	87 35 44	134
Vandra Hill		95 54 11	135
Pávágad, XX		129 32 54·37	24
Pávágad Hill Temple		129 35 37	128
Landiváda Hill Mark		137 55 16	133
Kandálva, XIX		207 55 53·06	24
Salesra Hill Mark (helio.)		222 44 13	129
Asalia Hill Mark (helio.)		252 59 34	130
Gajra Hill Mark (helio.)		290 32 35	139
Karáli, XXII		316 39 37·29	25
Mhordan h.s.			
Tringalvádi	h.s.	97 16 24·1	68
Kánvai	„	144 14 13·1	67
Hatni	„	189 4 36·7	71
Kandoba	„	224 16 36·7	67
Patta	„	265 33 50·9	69
Kalsúbái, XXXIX		342 19 51·0	70
Nikorda h.s.			
Varvand	h.s.	11 44 15	153
Pilva, XXXI		218 12 52	154
Baphlún Hill Pole		273 37 11	155
Kem	„	282 22 36	153
Ghontvál	„	312 10 8	157
Nimbadera h.s.			
Párner, XXVI*		55 29 28	248
Tukái Hill Pagoda		93 35 51	251
Varsinde	h.s.	129 31 49	248
Párner, XXVI*			
Singi, XXX*		82 19 56·45	53
Sathvádi Hill Pagoda		124 1 52	233
Kalsúbái, XXXIX		130 13 58·68	54
Hevargaon, XXXVIII		158 47 7·75	53
Vatmái Hill Pagoda		164 48 28	241
Dudeshvar	h.s.	175 26 7	234
Varsinde	„	188 56 10	248
Varsinde Pagoda		188 56 21	250
Tukái Hill Pagoda		191 8 35	251
Nimbadera	„	235 23 25	248
Párnera, XXXIII			
Mahálakshmi Peak		2 48 26	203
Dongri	No. 2 h.s.	13 11 33	216
Daman Idga		34 31 1	158
Tarbhán, XXX		193 10 49·45	38
Songad Fort Pagoda		225 55 20	146
Rúpgad	„	235 51 0	145
Ajmirgad Tree		248 1 27	149
Pilva, XXXI		256 34 25·61	38
Ghontvál	„	275 38 57	156

Name of Station with Azimuths of surrounding Points		° ′ ″	No. of Triangle giving Distance
Párnera, XXXIII—(*Contd.*)			
Kem	h.s.	276 13 15	144
Varvand	„	316 1 9	151
Gambhirgad, XXXVI		349 0 16·15	41
Patángdi, XIII			
Bhor, XVII		16 47 29·94	17
Richhia, XVIII		56 13 36·49	18
Kágarol, XIV		94 49 39·62	14
Jathrabhor, XII		128 12 42·19	13
Bhuver Hill		153 28 57	108
Deloch Hill Platform (helio.)		166 26 51	109
Uchak, XI		215 17 4·07	13
Vadápípla Hill Platform (helio.)		228 28 40	111
Devgad Báriya Hill		356 25 12	122
Páthal, XXVIII			
Tarbhán, XXX		24 16 22·73	35
Dungar	h.s.	37 21 37	255
Tukhed Hill		78 21 41	282
Tadkeshvar	s.	87 6 26	257
Bharan	h.s.	128 2 24	260
Kesarva, XXV		200 43 22·71	33
Ságbára, XXVI		247 55 44·48	33
Dopári, XXIX		301 20 12·52	34
Songad Hill Mark		303 18 39	142
Sádadván	„	318 37 46	254
Chámpávádi Hill		327 10 58	273
Patta h.s.			
Bítangad	h.s.	28 11 30·2	80
Kalsúbái, XXXIX		47 18 56·7	58
Katlia	„	85 29 18·6	77
Mhordan	„	85 37 1·4	69
Tringalvádi	„	90 39 59·5	60
Kandoba	„	137 18 33·3	69
Bahula	„	151 11 41·7	57
Sinnar, XXXVII		222 15 37·0	57
Pávágad, XX			
Mandanpur	h.s.	0 39 52	134
Sidhpur, XXIII		4 35 8·02	26
Baroda Clock Tower (helio.)		60 15 22	136
Pávágad Hill Temple		139 10 3	127
Vijápur Hill Mark (helio.)		155 10 42	124
Richhia, XVIII		201 2 40·37	23
Kántáveda Hill Mark (helio.)		218 52 22	125
Bhor, XVII		235 2 48·36	22
Kandálva, XIX		268 44 40·16	22
Landiváda Hill Mark		307 9 41	132
Masábár, XXI		309 28 31·21	24
Pilva, XXXI			
Ghontvál	h.s.	13 19 23	156
Gambhirgad, XXXVI		28 24 45·23	41
Nikorda	„	38 14 40	154
Daman Idga		67 6 40	159
Párnera, XXXIII		76 43 47·60	38

* These stations appertain to the Bombay Longitudinal Series.

Name of Station with Azimuths of surrounding Points		° ′ ″	No. of Triangle giving Distance
Pilva, XXXI—(*Contd.*)			
Ajmirgad Tree		110 30 15	150
Tarbhán, XXX		139 29 45·19	36
Dopári, XXIX		216 9 47·57	36
Sáler, XXXII		261 46 8·39	37
Mánur Peak		264 14 8	147
Kem	h.s.	301 55 1	154
Bhorgad, XXXIV		328 21 54·84	39
Píplia s.			
Kesvan	s.	136 54 23	269
Kolvanna	„	202 25 5	268
Páháj Tree		206 54 55	306
Ankot	„	260 46 51	267
Amleshvar Building		319 55 3	304
Bhádbhút	t.s.	326 47 13	267
Richhia, XVIII			
Pávágad, XX		21 4 57·26	23
Vijápur Hill Mark (helio.)		99 53 23	124
Ghoráráo, XVI		125 8 47·53	19
Godhra House		181 36 25	120
Kágarol, XIV		189 53 19·41	18
Patángdi Hill Mark		233 18 44	116
Patángdi, XIII		236 7 15·09	18
Káliákua Hill		243 31 51	117
Richhia	h.s.	247 36 10	118
Bhor, XVII		282 27 9·41	20
Kandálva, XIX		324 21 10·78	21
Richhia h.s.			
Richhia, XVIII		67 37 50	118
Godhra House		124 38 2	121
Kágarol, XIV		168 7 53	119
Bhor, XVII		299 26 44	118
Rúpgad h.s.			
Párnera, XXXIII		56 4 24	145
Songad Fort Pagoda		169 18 24	146
Kem	h.s.	349 13 50	145
Sádadván h.s.			
Tarbhán. XXX		64 7 59	254
Chámpávádi Hill		69 1 40	274
Dungar	h.s.	97 20 19	255
Páthal, XXVIII		138 41 45	254
Ságbára, XXVI			
Dopári, XXIX		5 46 44·36	34
Páthal, XXVIII		68 7 47·43	33
Álamvádi, XXVII		90 44 27·50	31
Kesarva. XXV		117 17 24·96	30
Juna Ráj Hill Mark (helio.)		147 45 23	140
Bábásiráj, XXIV		207 56 39·77	30

Name of Station with Azimuths of surrounding Points		° ′ ″	No. of Triangle giving Distance
Sagwára, V			
Kua, VIII		23 17 46·64	8
Ghatonogám Hill Math		38 19 51	98
Dúngarpur, IV		117 29 43·65	5
Tukwása, III		191 10 32·18	5
Sagwára Hill Temple No. 1		209 50 44	96
Sábla Hill Tree		225 44 18	92
Lohária, VI		248 33 47·91	6
Ámjio, VII		306 13 42·60	7
Sagwára Hill Temple No. 2		308 34 33	97
Sáler, XXXII			
Bhorgad, XXXIV		17 29 21·11	39
Pilva, XXXI		81 57 43·59	37
Dopári, XXIX		151 26 53·09	37
Ankai Tankai, XXXV		318 0 34·17	40
Sidhpur, XXIII			
Kesarva, XXV		14 55 13·37	29
Pávágad, XX		184 34 22·07	26
Masábár, XXI		220 39 25·04	26
Karáli, XXII		253 40 50·76	27
Bábásiráj, XXIV		305 17 17·47	28
Singi, XXX*			
Karanja, XXXIV*		82 43 53·36	228
Kámandurg, XL		123 13 9·14	52
Máhuli	h.s.	143 1 20	228
Kulang Hill Mark		177 55 53	230
Kalsúbái, XXXIX		183 57 40·30	51
Báleshvar	„	222 37 15	237
Hevargaon, XXXVIII		225 17 1·57	51
Párner, XXVI*		262 5 23·76	53
Khandeshvar Hill Pagoda		306 37 24	253
Sinnar, XXXVII			
Patta	h.s.	42 19 6·2	57
Kalsúbái, XXXIX		44 20 5·81	47
Bahula	„	87 38 16·3	55
Ghargad Hill Fort		89 26 53	197
Pándu Lena Hill		101 52 16	195
Násik Idga		116 35 36	194
Baronda Peak		125 17 32	187
Chamberlena Hill Tree		131 44 23	192
Bhorgad, XXXIV		132 25 5·21	43
Varandi Peak		136 22 10	193
Talegaon Peak		147 32 22	172
Nalvári Hill Bush		149 15 36	171
Tahola Hill		160 39 42	160
Achla Hill Fort		161 32 6	162
Ahivant Fort		165 26 29	163
Saptashring Hill		169 31 35	164
Márkinda Hill Fort		171 30 48	166
Rávlya Fort		174 45 10	167
Jauliádongar Hill		176 24 32	168
Dhodap Hill Pagoda		182 42 9	169
Rámahabit Hill		229 10 25	173
Katarvádi Hill East Point		230 25 31	175
Gorakhnáth Hill		232 24 16	176

* These stations appertain to the Bombay Longitudinal Series.

Name of Station with Azimuths of surrounding Points		° ′ ″	No. of Triangle giving Distance
Sinnar, XXXVII—(*Contd.*)			
Ankai Tankai, XXXV		234 26 57·17	43
Hevargaon, XXXVIII		332 41 21·54	44
Sinnar h.s.			
Bhorgad, XXXIV		132 48 27	179
Kem	h.s.	153 7 19	179
Mesankhed Hill		218 7 49	182
Ankai Tankai, XXXV		233 2 20	180
Sísa, II			
Dúngarpur, IV		0 41 12·40	4
Lakarwás, XXXII*		196 56 35·25	2
Palia Hill Mark (helio.)		262 42 57	85
Anjini, I		264 25 18·74	2
Seria Hill Temple		287 23 31	88
Tukwása, III		311 7 16·17	3
Kharji Hill Math		342 8 53	91
Tadkeshvar s.			
Kámrej	h.s.	34 43 6	258
Tarsári	s.	143 44 32	261
Nandáv Tree		176 31 15	285
Bharan	h.s.	182 31 45	260
Ratola Peak		258 44 35	284
Lindia Hill		262 59 10	283
Páthal, XXVIII		267 1 51	257
Tukhed Hill		269 9 59	281
Ghalha Hill Bush		324 22 49	278
Dungar	„	331 55 59	257
Tána, XXIX*			
Anjini, I		5 41 59·33	1
Intáli Temple		54 12 1	81
Lakarwás, XXXII*		60 19 35·48	1
Náráyangad Hill Math		74 5 30	82
Tankári s.			
Gandhar Building		12 35 23	308
Tankári Custom House		57 38 39	313
Tundaj	s.	195 10 33	272
Tundaj House		197 42 3	315
Jambusar	„	239 29 15	271
Khánpur House		270 4 15	314
Kolvanna	„	306 57 51	270
Kesvan	„	351 7 29	270
Tárápur Fort s.			
Kohoj	h.s.	303 16 59	208
Káldurg	„	323 19 44	208

Name of Station with Azimuths of surrounding Points		° ′ ″	No. of Triangle giving Distance
Tarbhán, XXX			
Párnera, XXXIII		13 13 16·10	38
Dungar	h.s.	191 25 48	256
Páthal, XXVIII		204 12 40·13	35
Sádadván	„	244 0 17	254
Dopári, XXIX		263 17 21·04	35
Pilva, XXXI		319 22 44·18	36
Tarsári s.			
Adol	s.	179 7 22	262
Pánoli Building		211 7 32	288
Bharan	h.s.	243 35 21	261
Nandáv Tree		260 58 38	285
Tadkeshvar	s.	323 42 30	261
Tembla, X			
Jathrabhor, XII		41 7 5·82	12
Kua, VIII		185 55 37·83	10
Sarmi Muváda Hill Mark		223 7 20	105
Deokotla, IX		255 46 48·42	10
Jhálod Hill Mark		300 29 11	106
Uchak, XI		324 32 59·89	11
Thána h.s.			
Karanja, XXXIV†		0 8 52	221
Madh Building		61 7 46	227
Dahisar Hill Mark		137 16 22	224
Kámandurg, XL		185 56 6	222
Bhiwndi Hill		239 18 48	223
Áupa	h.s.	273 59 15	221
Thána Church		288 10 49	225
Trimbak h.s.			
Bhopálgad Hill Fort		65 39 46	201
Harish Hill Fort		78 9 19	200
Gambhirgad, XXXVI		107 18 19	184
Vághera Hill		164 8 29	199
Kem	h.s.	196 13 59	183
Rámsej Fort Pagoda		229 19 40	189
Kalsúbái, XXXIX		330 23 53	183
Tringalvádi h.s.			
Kanjangad	h.s.	140 41 15·4	66
Dhoria	„	164 6 21·6	75
Anjini	„	183 25 56·0	62
Kánvai	„	223 40 46·3	66
Bahula	„	225 33 6·0	59
Patta	„	270 34 25·1	60
Mhordan	„	277 14 0·3	68
Kalsúbái, XXXIX		307 51 46·3	59

* These stations appertain to the Karáchi Longitudinal Series. † This station appertains to the Bombay Longitudinal Series.

Name of Station with Azimuths of surrounding Points		° ′ ″	No. of Triangle giving Distance
Tukwása, III			
Sagwára, V		11 11 49·32	5
Dúngarpur, IV		70 27 30·38	4
Sísa, II		131 15 25·27	3
Seria Hill Temple		158 21 2	88
Palia Hill Mark (helio.)		165 34 42	84
Salúmbar Hill Tree		179 14 0	86
Anjini, I		193 59 45·16	3
Dholagarh Hill		207 52 50	89
Sábla Hill Tree		310 7 30	92
Lohária, VI		319 52 55·06	6
Tundaj s.			
Tankári	s.	15 11 12	272
Tundaj House		207 40 59	315
Jambusar	„	294 0 54	272
Uchak, XI			
Vadápípla Hill Platform (helio.)		10 25 5	111
Patángdi, XIII		35 20 22·83	13
Deloch Hill Platform (helio.)		80 57 39	109
Jathrabhor, XII		85 40 49·74	12
Tembla, X		144 36 33·81	11
Uchak, XI—(*Contd.*)			
Deokotla, IX		204 49 8·49	11
Chokhla Hill Tree		218 26 7	104
Jhálod Hill Mark		236 48 17	107
Vardhari, XV			
Ghoráráo, XVI		23 43 20·10	16
Jathrabhor, XII		287 49 45·33	15
Kágarol, XIV		319 13 46·74	15
Varsinde h.s.			
Párner, XXVI*		8 57 27	248
Dudeshvar	h.s.	146 46 34	249
Nimbadera	„	309 27 3	248
Varvand h.s.			
Gambhirgad, XXXVI		41 49 45	152
Párnera, XXXIII		136 7 23	151
Nikorda	h.s.	191 43 2	153
Baphlún Hill Pole		219 16 58	155
Kem	„	243 8 25	151

* This station appertains to the Bombay Longitudinal Series.

January, 1893.

J. ECCLES,
In charge of Computing Office.

SINGI MERIDIONAL SERIES.

CO-ORDINATES AND DESCRIPTIONS OF ALL STATIONS AND POINTS.

The following table gives the co-ordinates of all stations and other fixed points, arranged in alphabetical order, also the descriptions of the secondary and intersected (or unvisited) points, and references to the preceeding pages where the descriptions of the principal stations are given.

NOTE.—Principal stations are followed by the Roman numerals I, II, &c., secondary stations by the letters h.s., s. and t.s. Wherever the spelling and designation of stations and points have been altered from the old nomenclature, the latter is given in italics where necessary, immediately below the former. The year or season in which a station or point was originally fixed is usually given after its description.

For visited stations and points of superior accuracy, the values of latitude and longitude are given to two places of decimals, for well determined objects to one place, and for the remaining points to the nearest second.

The trigonometrical heights are given to the nearest foot, and the spirit-levelled heights to two places of decimals; the surfaces to which they refer, when forthcoming in the field books, are specified in footnotes, otherwise they may be assumed to refer to the upper surface of the pillar or platform, or to the mark engraved on buildings, &c. Where trigonometrical heights were not forthcoming, but values were found on the Topographical Survey maps, these values have been reduced to the same terms as the trigonometrical heights and enclosed in brackets, thus [4000]; the surface to which they refer may be assumed to be the ground level. In the column of heights, the upper numeral gives the height of the station above mean sea-level and the lower that of the structure itself above ground level, but in the case of principal stations protected by rectangular pillars, it is the height of the circular pillar above ground level.

The numerals in the last column indicate the triangles given on pages 13—H. to 30—H., by which the station or point has been fixed; where these numerals are omitted it is to be understood that no triangles are given.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station / Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Achla Hill Fort ... ... *Achla Peak*	Násik	Highest and westernmost point of the fortified hill towards the western end of the Chándor range, about a mile S. by E. of Jamle village, 2 miles W. of Bilvádi village, and 9 miles N.W. by N. of the town of Vani: sub-division Kalvan. 1845.	20 25 48·3	73 51 15·7	...	162
Ád Hill Fort ... ... *Ark Fort Tree*	,,	Tree on highest part of a hill so called, about 3¼ miles E.N.E. of Tirde village, and the same distance N. by W. of Thángaon: sub-division Sinnar. 1829-32.	19 44 29·5	73 57 8·4	3597	240
Adol s. ... ... *Adol H.S.*	Broach (Bharúch)	On the eastern embankment of the tank immediately S. of the village so called, about 2¾ miles S.S.E. of the town of Sajod on the metalled road from Hánsot to Ankleshvar: sub-division Ankleshvar. The station consists of a pillar of masonry, 5 feet in height, surrounded by a platform of earth. 1863.	21 35 1·38	72 58 19·72	*76 / 5	262
Ahivant Fort ... ... *Iwanta Fort*	Násik	The highest point in the fortified hill of the Chándor range, about a mile W. of the village of Daregaon, 1¼ miles S.E. of Bilvádi village, and 6 miles N.N.W. of the town of Vani: sub-division Dindori. 1845.	20 24 54·3	73 54 4·4	[4000]	163

* To upper surface of pillar.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station — Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Ajmirgad Tree	Surat Agency	1829-32.	20 40 53	73 20 21	1145	149 150
Ajni Hill Mark (helio.) *Ajni H.S.* ...	Meywar (Mewár) Agency	About 2¼ miles E. of the town of Arthuna, and the same distance N. of the Mahi river: Bánswára State. 1862.	23 29 48·42	74 10 18·46	842	103
Ajuba Hill	Thána	About 3¼ miles W.N.W. of the village of Khumshet, 3¼ miles E.N.E. of Gunda village, and 2¼ miles E.S.E. of the village of Dehena: sub-division Sháhápur. 1829-32.	19 27 57	73 43 33	...	231
Álamvádi, XXVII	Rewa Kántha (Revákántha) Agency	*Vide* page 9—H.	21 34 34·13	73 32 36·38	848 / *	31, 32
Ambhel Tree	Broach	Palm tree immediately E. of the village of the same name, 1¼ miles E.N.E. of Goládra village, and 3 miles S.W. by S. of the large village of Kesvan: sub-division Vágra. 1863.	21 49 10	72 44 2	...	...
Ámjio, VII	Meywar Agency	*Vide* page 6—H.	23 32 1·01	74 16 24·06	† 953 / 4	7
Ámjio h.s.	„	On the hill so called, about ¼ of a mile E. of the preceeding station, 1¾ miles E.N.E. of Ámjio village, 2 miles S.S.E. of the village of Gara Sujáji, and 6¼ miles S.E. of the town of Partapor: Bánswára State. 1862.	23 32 2·09	74 16 37·41	971	99 100
Amleshvar Building ...	Broach	House in the town so called, about 2 miles S.W. by W. of Cholád village, and 4 miles N. by W. of Bhádbhút village on the right bank of the Narbada river: sub-division Broach. 1863.	21 44 15	72 51 41	...	304
Anjini, I	Meywar Agency	*Vide* page 6—H.	24 14 30·13	74 10 37·74	† 1875 / 3·1	1
Anjini h.s.	Násik	On the highest point of the hill so called, about 3 miles E. by S. of the town of Trimbak: sub-division Násik. The station consists of a platform of rubble enclosing a perforated and isolated pillar of masonry having a mark in the lowest part of the foundation and another at the ground level, access to the latter is by an aperture on the N. side. 1865.	19 55 17·15	73 36 45·89	‡ 4264	61, 62
Ankai Tankai, XXXV ...	„	*Vide* page 11—H.	20 11 10·94	74 29 24·24	§ 3154·11 / 3·7	40
Ankleshvar Railway Station ...	Broach	Lamp on the Signal-staff of Ankleshvar Railway Station on the B. B. and C. I. Line: sub-division Ankleshvar. 1863.	21 37 29·6	73 2 33·3	...	295

* Height of pillar not forthcoming. † To upper surface of circular, perforated pillar. ‡ To upper surface of perforated pillar.
§ To mark-stone in centre of platform.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station / Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Ankot s. ... ... *Ankot H.S.*	Broach	On an old embankment of a tank on the boundary of the villages of Ankot and Juned; about ¾ of a mile S.W. of the former, and 1 mile N.E. of the latter, 3¾ miles W. by N. of Dayadra on the main road from Ámod to Broach. The station consists of a pillar of masonry 5 feet in height. 1863.	21 48 54·08	72 54 46·70	* 53/5	266
Ankot Tree ... ... *Ankot Brab Tree No. 3.*	»	Highest of the three trees, W. of the village of this name, about 1½ miles N.N.E. of Juned village, and 3 miles S.E. of Vágra town: sub-division Vágra. 1863.	21 49 5	72 55 11	...	...
Arnála s.	...	*Vide* Janjira s.	...	...	...	...
Asalia Hill Mark (helio.) ...	Rewa Kántha Agency	1861.	22 22 20·23	73 57 3·96	1326	130 131
Asheri Hill Fort	Thána	About 1½ miles W. of the village of Medhván, 1 mile N. by E. of Khadkavna village, 3½ miles S.E. of the village of Ursa and 4 miles S. of the town of Barampuri on the right bank of the Súrya river: sub-division Máhím. 1829-32.	19 49 11	72 57 52	1694	218 219
Aundha Hill Fort	Násik	About 1½ miles N.W. of the village of Tirde, 2¾ miles E. of Bhárvihír village, and 7 miles N.W. by W. of Thángaon and almost inaccessible. A natural stronghold ending in a sharp cone, with no traces of any built fortification; the rock-cut steps that formerly led up the cone have been destroyed: sub-division Sinnar. 1829-32.	19 44 45·8	73 52 41·8	4329	238 239
Áupa h.s. ... ... *Ahupa*	Poona (Puna)	On a hill, about 2 miles W. by S. of the village so called, and ¼ a mile E. of Sakarmasvádi: sub-division Khed. 1829.	19 10 14·57	73 35 7·14	3781	220
Aurangpur h.s.	Ahmednagar (Ahmadnagar)	A small isolated hill about a mile N. by E. of the village of the same name, 2 miles S.W. of Gogulgaon village, and 3 miles S.S.E. of the large village of Lohára: sub-division Sangamner. 1829-32.	19 35 34·91	74 26 50·54	...	246
Bábásiráj, XXIV	Khándesh	*Vide* page 9—H.	21 47 24·96	73 56 52·51	† 3272/3·5	28
Badalpára Temple... ...	Broach	Spire of dome. About 300 yards S. of the village so called, 2¼ miles S.W. by S. of Roja Tankária village, and 6 miles N.W. by W. of the town of Vágra: sub-division Vágra. 1863.	21 52 53·7	72 48 12·7	...	...
Bahula h.s. ... ... *Baola H.S.*	Násik	On the arched roof of an old temple in the hill fort so called on the Sahyádri range of hills, about 1½ miles S.S.E. of Ambe Bahula village, the same distance N.N.E. of Asaula Bahula, and 4 miles in the same direction of Nándur Railway Station on the G.I P. Line. The station consists of a square masonry platform enclosing a pillar of masonry: sub-division Násik. 1865.	19 52 37·06	73 46 38·55	* 3137	55, 56

* To upper surface of pillar. † To upper surface of platform.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station — Height of Structure	No of Triangle
			° ′ ″	° ′ ″	*feet*	
Bálásinor Palace (helio.) ...	Rewa Kántha Agency	In the N.W. quarter of the town: Bálásinor (Vádáshinor) State. 1858-59.	22 57 30·01	73 22 27·05	380	*
Báleshvar h.s.	Ahmednagar	On a temple on a flat topped hill, about 2 miles N.E. of the village Jaula Báleshvar, 2¼ miles N.W. by W. of Várudi village, and 5 miles S.W. of Chandnapur on the main road from Poona to Násik: sub-division Sangamner. The station is denoted by the point of the spire. 1829-32.	19 26 23·63	74 10 57·02	† 3825	236 237
Bánswára Hill Math ...	Meywar Agency	On a hill, about 1¼ miles S.S.E. of the town: Bánswára State. 1862.	23 31 21·3	74 29 57·5	...	102
Bánswára Palace	"	Highest dome in the town: Bánswára State. 1862. ...	23 32 34·0	74 29 1·4	...	101
Baphlún Hill Pole ...	Násik	About 1½ miles W. of the village so called, 1 mile N. of Sule village, and the same distance N.W. of that of Vangan: Peint (Peth) State. 1829-32.	20 32 23	73 31 57	2191	155
Baroda Clock Tower (helio.) ...	Baroda (Vadodra) State	On the highest point above the bell on the clock tower which is 76·87 feet above a bench-mark cut on the pavement below. 1861-62. Note.—When visited by the Levelling Party in 1876-77, the mark was found in good order.	22 17 58·29	73 15 7·98	‡ 200·59	136
Baronda Peak ... ... *Kochergaon Peak*	Násik	About 2 miles S.S.E. of the village of Kochargaon, 1½ miles N.E. of Naikvare village, and 2½ miles W.S.W. of Rávalgaon: sub-division Dindori. 1845.	20 6 53	73 42 22	...	187
Básgad h.s. ... ... *Otur S.*	Thána	On the highest point in the hill fort so called at the western end of the Trimbak range, about 1½ miles S.W. of Umarda village, 2 miles N.E. by E. of Khoch village, and 2½ miles S. of Gonda Buzurg: sub-division Sháhápur. 1842-43.	19 54 42·29	73 27 49·35	4082	185 186
Bhádbhút t.s. ... ... *Barboot T.S.*	Broach	On the N. embankment of the small tank immediately N. of the village so called on the right bank of the Narbada river, 2 miles E. of the village of Kásva, and 6 miles N.N.W. of the town of Sajod on the metalled road from Hánsot to Ankleshvar: sub-division Broach. The station consists of a pillar of masonry 10 feet in height and carries a mark in its upper surface. 1863.	21 41 14·21	72 53 4·15	§ 54 / 10	265
Bharan h.s. ... ... *Bhun H.S.*	Rewa Kántha Agency	On high ground, about ⅔ of a mile N.W. by N. of the village of Bharan, 2½ miles E. of Dhámrod, and 1½ miles W. by S. of Dinod. The station consists of a pillar of masonry 1½ feet in height. 1863.	21 30 55·36	73 4 16·76	§ 168 / 1·5	260
Bharan Tree ... ... *Dinode Brab Tree*	"	Conspicuous palm tree on rising ground, about a mile N. of the large village so called, and the same distance W. of that of Dinod. 1863.	21 31 18	73 4 45	...	...

* For triangles fixing this point, see the Synoptical Volume of the Gujarát Longitudinal Series. † To point of spire.
‡ To highest point above the bell. § To upper surface of pillar.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station / Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Bharkodra h.s. ... ... *Burkodra H.S.*	Broach	On the west bank of a choked up tank called Moti Khokhra, about 2 miles E. of the large village of Bharkodra, 1¼ miles N. of Kosamdi, and 2 miles S.W. of Jitáli: sub-division Ankleshvar. The station consists of a pillar of masonry 3 feet in height having a mark-stone in its upper surface and another below. 1863. Note.—When visited by the Levelling Party in 1876-77, the station was found protected by a rectangular pillar 4·3 feet in height carrying a mark-stone in its upper surface.	21 36 24·76	73 4 51·69	* 119·36 / 3	263
Bharkodra Tree ... ... *Village Brab*	„	N. of the large village of this name, about 2 miles N.W. of Kosamdi town, and 1½ miles S.S.E. of the Ankleshvar Railway Station on the B. B. and C. I. Line: sub-division Ankleshvar. 1863.	21 36 10	73 2 56	...	289 290
Bhímáshankar Hill Tree ... *Bhima Shankur*	Poona	On top of hill, about a mile S.S.W. of Bhímáshankar temple near the source of the Bhíma river, and 2½ miles N.W. by W. of Bhorgiri village: sub-division Khed. 1829-30.	19 3 40	73 34 24	3431	†
Bhiwndi Hill ... ... *Bhewndy H.*	Thána	On the highest peak of an isolated hill, about 2½ miles E. of the town of Bhiwndi on the high road from Bombay to Agra, and a mile W.S.W. of Válshinda village: sub-division Bhiwndi (Bhinvádi). 1829-32.	19 18 0	73 8 17	[927]	223
Bhopálgad Hill Fort ... *Bhopalgarh H. Fort*	Thána Agency	A ruined hill fort on the right bank of the Pinjál river, N.W. of the Talghát, about ¼ of a mile W. of Dhábona village, and 1¼ miles in the same direction of Pinjál village: Jawhár State. 1829-32.	19 45 52	73 12 54	...	201
Bhor, XVII	Rewa Kántha Agency	*Vide* page 8—H.	22 39 32·41	73 51 41·35	‡ 1037 / §	17
Bhorgad, XXXIV ...	Násik	*Vide* page 10—H.	20 7 5·96	73 46 44·50	‖ 3543 / 2·4	39
Bhuver Hill ... ... *Megtrala H.*	Panch Mahás	An isolated hill about ½ a mile S. by E. of the village of the same name, 2 miles W. of Virania village, and 2½ miles N.E. by N. of Patanpur large village: sub-division Godhra. 1861.	23 2 36	73 50 15	646	108
Biluan Hill Tree ... ... *Balua H. Tree*	Meywar Agency	On the highest part of a hill, at the S.E. foot of which lies the village so called, about 7 miles S.S.W. of Cháwand village on the Gargal Nadi, and 5 miles E. by N. of Rikhabdeo, a place of pilgrimage on the main road between Kherwára and Oodeypore: Oodeypore (Udaipur) State. 1862.	24 5 29	73 48 26	...	...
Bítangad h.s. ... ... *Bitinga H.S.*	Ahmednagar	On a hill so called, about a mile of the village Bítangad, 1½ miles N.N.W. of Shenit village, and 3¾ miles W. by N. of the large village of Khirla: sub-division Akola. The station consists of a platform of rubble enclosing a pillar of masonry 1 foot in height. 1865.	19 38 46·86	73 50 21·93	** 4682 / 1	79, 80

* To top of rectangular protecting pillar. † For triangle fixing this point, see the Synoptical Volume of the Bombay Longitudinal Series.
‡ To circle and dot engraved on rock. § See description of this station. ‖ To upper surface of platform. ** To upper surface of pillar.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station — Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Bodeli Hill Mark (helio.) ... *Baroli H.*	Baroda State	1861.	22 15 51·61	73 44 57·63	248	138
Bori Dongri Hill	Rewa Kántha Agency	About 2 miles N. by E. of Bálásinor town, and ¼ a mile N.W. of Karanpur village: sub-division Bálásinor. 1858-59.	22 59 5	73 23 11	...	*
Broach Cotton Press No. 1 ... *New Cotton Press*	Broach	S.W. corner of chimney at the western edge of the town, about ¼ a mile E. by S. of the towers of silence: sub-division Broach. 1863.	21 41 11·8	73 0 32·6	...	297 298
Broach Cotton Press No. 2 ... *Broach Langdon Cotton Press*	„	Chimney of Langdon Cotton Press in the town, about ¼ of a mile S.W. by W. of the Travellers' Bungalow, and ¼ of a mile W. of Saiyid Edrushah Mosque: sub-division Broach. 1863.	21 41 42·8	73 1 25·0	...	299 300
Broach Mosque ... ... *Musjid in Tower*	„	In the town, known as Hajikhana Saiyid Edrushah Mosque, about ¼ a mile S.W. of the Travellers' Bungalow, and immediately S.W. of the Police Lines: sub-division Broach. 1863.	21 41 41·0	73 1 36·8	...	301 302
Broach s. ... ... *Broach Bn. S.*	„	On the centre of a bastion of the western wall of the town, about 1¼ miles E. of the towers of silence, and close N.W. of an Episcopal Church in the N. I. Lines. Below the bastion is the idol of Maroti. The station consists of a pillar of masonry 4 feet in height having a mark-stone in its upper surface, and another below on lead let into the terrace: sub-division Broach. 1863.	21 41 26·56	73 1 13·92	† 124 ‡	264
Chamberlena Hill Tree ... *Manowri Tree*	Násik	On the S. extremity of a mass of hills stretching nearly E. and W., about 2¾ miles W. by S. of the village of Varandi, 1¾ miles N.E. by N. of Makmalabad, and 4 miles N. of the town of Násik: sub-division Násik. 1845.	20 3 58	73 50 4	[2846]	191 192
Chámpávádi Hill ... ... *Champawari S.H.*	Baroda State	Low isolated reddish hill about 1¼ miles S. by E. of the village so called, 1¼ miles S.W. of Sádadván village, and 3¼ miles N. by W. of the town of Ára: sub-division Vyára. 1863.	21 9 25	73 25 10	[369]	273 274
Chanchvel Hill	Broach	W. end about ¼ a mile W. of the village so called, 4¼ miles E. by N. of Gandhar village, and 8 miles N.W. by W. of the town of Vágra: sub-division Vágra. 1863.	21 53 52	72 46 23	[26]	...
Chanchvel Tree	„	Clump of palm trees immediately S. of a tank about 300 yards N.W. of the village so called, 2¼ miles S. of Denva village, and 5 miles E. by N. of Gandhar village: sub-division Vágra. 1863.	21 54 6	72 46 35	...	309 310
Chanderi East Peak ... *Chanderi Hill*	Tháns	Highest point towards the western side of the hill about 3 miles S. by W. of Chincholi village, 1¼ miles N.E. of Tamsai village, and 3 miles W.S.W. of Bedasgaon village: sub-division Kalyán. 1829-30.	19 3 49	73 17 13	...	§
Chanderi West Peak ...	„	About 320 feet N.W. of the preceding peak, about 2¼ miles S. by W. of Chincholi village, 1¼ miles N.N.E. of Tamsai village, and 3¼ miles W. by S. of Bedasgaon village: sub-division Kalyán. 1829-30.	19 4 9	73 16 48	...	§

* For triangles fixing this point, see the Synoptical Volume of the Gujarát Longitudinal Series. † To upper surface of pillar.
‡ See description of this station. § For triangle fixing this point, see the Synoptical Volume of the Bombay Longitudinal Series.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station / Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Chándor Hill Fort ...	Násik	Highest part of Chándor Hill, about a mile N.E. of the town of the same name: sub-division Chándor (Chándvad). 1845.	20 20 9	74 18 7	...	...
Chokhla Hill Tree *Nadir H.* ...	Meywar Agency	On an isolated, conical hill, about 1¼ miles E.S.E. of the village of Chokhla, 1½ miles N.W. of Burwa, and 1½ miles S.W. of Barodia: Bánswára State. 1862.	23 24 42	74 22 41	[1349]	104
Dahisar Hill Mark *Deshwar h.s.* ...	Thána	On the highest point of a group of hills, about 3½ miles E. by S. of the village so called on the B. B. and C. I. Railway Line: sub-division Sálsette (Sáshti). 1829-32.	19 14 48·54	72 56 49·57	[1139]	224
Daman Idga ... *Damaun H. Pag.* ...	(Portuguese territory)	On a hill, about 1½ miles W.N.W. of the village of Vatár, 1¼ miles E. of Dalváda village, and 2½ miles N.E. of the sea port town of Daman: sub-division Daman. 1829-32.	20 26 20·1	72 54 34·2	[365]	158 159
Deloch Hill Platform (helio.) *Deolass H. Platform* ...	Panch Mahál	On the N.W. extremity of a flat-topped hill, about ¾ of a mile S. of the village so called. The road from Rámpur to Godhra passes by the western base of the hill: sub-division Godhra. 1861.	23 1 44·45	73 53 21·39	[807]	109 110
Deokotla, IX	Meywar Agency	*Vide* page 7—H.	23 19 6·05	74 12 11·98	* 1258 / 5	9
Dev Dongri Temple ...	Rewa Kántha Agency	Spire. About ½ a mile S. of Saroda village, 1 mile W. of Gadváda village, and 2¾ miles N.N.E. of Bálásinor town: Bálásinor State. 1858-59.	22 59 34·8	73 23 58·3	...	†
Devgad Báriya Hill *Barriah H.* ...	„	Close N. by W. of the town of this name, and at the terminus of the high road from Godhra: Devgad Báriya State. 1860-61.	22 42 30	73 56 29	1242	122 123
Dhodap Hill Pagoda *Dhorab H. Fort Pag.* ...	Násik	Pagoda in the fort on the highest and most prominent hill in the Ajanta or Chándor range, about ⅔ of a mile W. of the hamlet of Machi, 7½ miles S. of Kalvan town, and 4½ miles N.W. by N. of the large village of Dhorámbe: sub-division Kalvan. 1845.	20 23 1·0	74 4 16·9	4737	169 170
Dhoki Hill ... *Dholki E. Hill* ...	Ahmednagar	About 1½ miles N.W. of the village of the same name, 3 miles E.S.E. of Vasunde village, and 2½ miles N.E. by E. of Tákli Dhokeshwar: sub-division Párner. 1832.	19 10 42	74 27 16	...	‡
Dhoki Hill Pagoda *Dholki H. Pagoda* ...	„	About 1½ miles W.N.W. of Dhoki village, 2½ miles E.S.E. of Vasunde village, the road from Utúr to Ahmednagar runs from east to west, about 1½ miles S.: sub-division Párner. 1832.	19 10 27·0	74 26 45·6	...	‡
Dholagarh Hill ... *Doragarh H. Hut* ...	Meywar Agency	Hut on W. shoulder of the hill, about 2 miles E.N.E. of the village of Khera, 2¾ miles N. by E. of Paira village, and 7 miles S.E. by E. of the town of Salúmbar: Oodeypore State. 1862.	24 4 36	74 10 29	[1720]	89, 90

* To upper surface of circular, perforated pillar. † For triangles fixing this point, see the Synoptical Volume of the Gujarát Longitudinal Series.
‡ For triangles fixing this point, see the Synoptical Volume of the Bombay Longitudinal Series.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station — Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Dhoria h.s.	Násik	On the highest point of the hill so called, about ¼ of a mile E. of Dhárgaon, 1 mile S. of Nagoṡli, and 5½ miles W. by N. of the large village of Kávnai: sub-division Igatpuri (Vigatpuri). The station consists of a platform of rubble enclosing an isolated pillar of masonry 2 feet high, which contains two marks, one in the foundation and the other at the ground level, access to the latter is obtained by an aperture. 1865.	19 47 37·10	73 34 29·60	* 3041 / 2	75, 76
Dongri No. 1 h.s. ... *Badur North S.*	Thána	On the northern extremity of the summit called Highland of St. John on a conspicuous range of hills running N. and S., about 2 miles N.W. of the village of Gágangaon, 2½ miles E. by S. of Khunauda village, and 6 miles E. by S. of the Railway Station of Gholvad on the B. B. and C. I. Line: sub-division Dáhánu. 1829-32.	20 4 1·30	72 52 11·11	[1778]	214
Dongri No. 2 h.s. ... *Badur H. South S.*	,,	On the southern extremity of the summit called Highland of St. John, 150 yards S.W. of the preceding station: sub-division Dáhánu. 1829-32.	20 3 50·37	72 52 10·33	...	215 216
Dopári, XXIX	Baroda State	*Vide* page 10—H.	21 4 54·50	73 46 17·43	† 1771 / ‡	34
Dudeshvar h.s. ... ... *Deodeshwar H. Pag. S.*	Ahmednagar	Towards the N. end of a flat-topped hill, about 1½ miles S. by E. of Medhván village, 3½ miles N.E. of Manoli village, and 5 miles W. by S. of Gogulgaon: sub-division Sangamner. 1829-32.	19 35 50·55	74 24 3·42	2712	234 235
Dungar h.s. ... ... *Dongar H. Temple S.*	Baroda State	On a small, low, isolated hill immediately E. and above the village of this name, about ½ a mile W. of Chikhli village, and 2½ miles E.S.E. of the large village of Shioni. The station consists of a triangular pillar of masonry built on the dome and around the spire of a temple having an iron driven in its centre: sub-division Palsána. 1863.	21 12 29·76	73 8 51·27	§ 208	255
Dúngarpur, IV	Meywar Agency	*Vide* page 6—H.	23 49 36·00	73 45 23·03	‖ 1406 / 3·6	4
Eksál Tree	Broach	Higher of the two palm trees N. of the village so called, about 2½ miles N.W. by W. of Bhádbhút village on the right bank of the Narbada river, and 2½ miles S. by W. of Amleshvar: sub-division Broach. 1863.	21 42 10	72 50 49	...	...
Gajra Hill Mark (helio.) ... *Wouri Chowki H.*	Rewa Kántha Agency	About a mile N.N.E. of the village so called, 1½ miles E. of Majigám village, and 5 miles N.E. by N. of Karáli large village on the left bank of the Galetho river: Chhota Udepur State. 1861.	22 14 56·35	73 56 20·73	1179	189

* To upper surface of perforated pillar. † To circle and dot on rock, 1 foot below surface of hill. ‡ See description of this station.
§ To upper surface of pillar. ‖ To upper surface of circular, perforated pillar.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station / Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Gambhirgad, XXXVI ...	Thána	*Vide* page 11—H.	20 3 5·69	73 5 31·89	* 2252 †	41, 42
Gandhar Building ... *Ghundhar Hill*	Broach	Large white building immediately N. of the village so called, 2½ miles N.W. of Muler village, and 6½ miles S. of the town of Tankári: sub-division Vágra. 1863.	21 53 19	72 42 0	...	308
Ghalha Hill Bush ... *Majlao S. W. H.*	Baroda State	About 1¾ miles E. by N. of the village so called on the right bank of the Tápti river, and 4¾ miles S. of the town of Tádkeshvar on the main road from Kem to Mándvi: sub-division Kámrej. 1863.	21 18 3	73 6 20	[157]	278
Ghalha Tree ... ... *Gulla B. Tree No. 1*	»	About ¼ a mile E. of the village so called on the right bank of the Tápti river, 4½ miles E. of the town of Kámrej, and 5 miles S. of the town of Tádkeshvar on the main road from Kem to Mándvi: sub-division Kámrej. 1863.	21 17 45	73 5 7	...	...
Ghargad Hill Fort ... *Garhgarh H. Fort Tree*	Násik	Conspicuous tree in fort on the boundary of the Násik and Igatpuri sub-divisions, about ¼ a mile S.S.W. of Dahigaon, 2½ miles N. of Murmi village, and 8 miles E.S.E. of the town of Trimbak. 1829-32.	19 53 2	73 41 0	...	197
Ghargad h.s. ... ... *Ambli H.S.*	»	On the summit of a rock capped hill about ¼ of a mile E. of the fortified hill so called, ¼ a mile S.E. of Dahigaon, and 2¼ miles N.W. by N. of Várivádá: sub-division Igatpuri. The station consists of a platform of earth and rubble enclosing a solid, isolated pillar of masonry 2 feet in height: there are two marks, one engraved on the rock *in situ* and the other on a stone embedded in the upper surface of the pillar. 1865.	19 53 8·37	73 41 30·99	‡ 3157 2	73
Ghatonogám Hill Math ... *Ghato H. Matha*	Meywar Agency	On a range of hills running N. and S., about a mile S.E of the village of Sádoli, 2 miles S.W. of the large village of Ghatanogám, and the same distance W. by N. of the village of Bhemai: Dúngarpur State. 1862.	23 33 56·0	73 56 3·1	[883]	98
Ghontvál h.s.	Surat Agency	Dharampor (Dharampur) State. 1829-32. ...	20 30 37·87	73 23 56·36	2239	156 157
Ghoráráo, XVI	Kaira (Kheda)	*Vide* page 8—H.	22 52 11·17	73 23 52·63	§ 323 5	16
Godhra House	Panch Mahals	In the eastern portion of the town: sub-division Godhra. 1860-61.	22 46 24	73 39 33	459	120 121
Gorakhnáth Hill	Násik	Peak on the centre of the hill immediately W. of the celebrated hill fort of Ankai Tankai, about 1½ miles S.W. of the village so called, 1¼ miles E.N.E. of Visápur village, and 4 miles S.S.W. of Manmád Railway Station on the G. I. P. Line: sub-division Yeola (Yevla). 1845.	20 11 32	74 27 58	...	176

* To circle and dot engraved on rock. † See description of this station. ‡ To upper surface of pillar.
§ To upper surface of circular, perforated pillar.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station / Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Gotára Hill Fort ... .. *Guntara Fort*	Thána	A tapering peak in the old hill fort so called, about 2 miles W. by S. of the village of Dughád, 2¼ miles S.S.W. of the village of Gotgaon, and 10 miles N. of the town of Bhiwndi on the high road from Bombay to Agra: sub-division Bhiwndi. 1829-32.	19 26 5	73 4 48	[1916]	211
Guia h.s. ...	Násik	On the highest part of the hill so called, about a mile W. of the village of Kusegaon, and 5 miles S.S.E. of the town of Trimbak: sub-division Igatpuri. The station consists of a platform of earth and rubble enclosing a perforated and isolated pillar of masonry having a mark in the foundation and another at the level of the ground, access to the latter being obtained through an aperture on the north side. 1865.	19 51 30·10	73 36 3·35	3270*	74
Haripura Tomb ... ... *Haripura Temple*	Broach	About a mile S.W. of the small village so called, and the same distance N. by E. of the town of Sajod on the metalled road from Hánsot to Ankleshvar: sub-division Ankleshvar. 1863.	21 38 0·7	72 56 56·7	...	296
Harischandragad Hill Fort ... *Harichandar H. Fort Cairn*	...	Pile of stones in the fort on the Sahyádri range, at the trijunction between the districts of Poona, Thána and Ahmednagar, about ¼ of a mile S. of some caves, 2 miles S. of Pachnai, 2¼ miles E. by N. of Válhevra, and the same distance N.W. by W. of Kireshvar. 1829-32.	19 23 9·8	73 49 15·2	4671	232
Harish Hill Fort ... ... *Harsh H. Fort*	Násik	The southernmost summit of the ruined stronghold, about ¾ of a mile S. of the village of Harishvádi, and 4 miles S.W. by W. of the town of Trimbak: sub-division Násik. 1829-32.	19 54 13·9	73 30 48·9	3650	200
Hatni h.s.	„	On the highest part of the hill so called, about a mile S.S.W. of Jánure village, 1¾ miles N. by E. of Vághera, and 2¾ miles S.S.W. of Nándur Railway Station on the G. I. P. Line: sub-division Igatpuri. The station consists of a platform of earth and rubble enclosing a perforated and isolated pillar of masonry 1 foot in height having an aperture in the east side for access to the ground level mark. 1865.	19 47 19·37	73 44 0·16	2346/1*	71, 72
Hátora Tree ... ... *Keem B. Tree*	Baroda State	Highest of three trees about a mile S.W. by S. of the village so called, ¼ a mile N. of Válesa, between the villages of Hátora and Naroli Moti, 1 mile S.W. of the former and the same distance E.N.E. of the latter, and 2¼ miles S.W. by W. of the town of Veláchha: sub-division Baroda. 1863.	21 24 34	73 1 12	...	...
Hevargaon, XXXVIII ...	Ahmednagar	*Vide* page 11—H.	19 28 39·20	74 16 11·11	3017/1·7†	44, 48, 49
Hevargaon Hill Pagoda ...	„	On a small isolated hillock about ¾ of a mile E. of the village of the same name, the same distance S.W. of Nimgaon village, and 4 miles S. by E. of Sangamner town: sub-division Sangamner. 1844-45.	19 30 25·3	74 15 48·7	...	244 245

* To upper surface of perforated pillar. † To upper surface of platform.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station — Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Hinglot Building ... ... *Hinglot House*	Broach	Gable end of a large house in the village so called, about 1¼ miles N.N.W. of Varváda on the right bank of the Narbada river: sub-division Broach. 1863.	21 41 53·3	72 56 31·5	...	303
Ikariádongar Hill Fort ... *Ikhara Fort*	Násik	Peak in the fort, about ½ a mile E. by N. of the village so called, 1 mile N. of Sherisáli village, and 3½ miles N. by W. of the large village of Dhorámbe: sub-division Kalvan. 1845.	20 23 2	74 5 54	4472	...
Intáli Temple ... ... *Itali Temple Spire*	Meywar Agency	Spire. Oodeypore State. 1862.	24 40 2·6	74 9 9·2	...	81
Jambusar s. ... ... *Jamboosir T.S.*	Broach	On the turret of the Naulaka Haveli belonging to Kalidas Bania, in the town so called, west of the Government building: sub-division Jambusar. The station is denoted by a circle and dot on lead let into the floor. 1863.	22 3 7·28	72 50 33·11	* 97	271
Janjira s. ... ... *Arnala S.*	Thána	On the bastion called Hanmant burj at the S. end of the fort in the island of Arnála at the mouth of the Vaitarna river: sub-division Bassein (Vasai). 1829-32.	19 27 32·44	72 46 29·02	40	212 213
Jathrabhor, XII	Rewa Kántha Agency	*Vide* page 7—H.	23 1 49·45	73 42 41·32	† 798/5	12
Jauliádongar Hill ... ... *Jowlia E. End*	Násik	Eastern conical hill on a plateau, about 1½ miles S.S.E. of Muláne village, 2 miles N. of Páregaon, and 10 miles S.S.W. of the town of Kalvan: sub-division Kalvan. 1845.	20 22 23	74 0 51	...	168
Jhálod Hill Mark ... ... *Jhallode H.*	Panch Maháls	About ½ a mile S.W. of the small village of Rájpur, 2 miles E. of Umrimál village, and 1½ miles N.W. of the town of Jhálod: sub-division Dohad. 1862.	23 6 57·59	74 10 16·00	1130	106 107
Juna Ráj Hill Mark (helio.) ... *Junaraj H.*	Rewa Kántha Agency	About a mile E. of the village of the same name, 1½ miles S. of Bahar Phalia village, and 10 miles S.E. by E. of the town of Nánod: Rájpipla State. 1861.	21 47 48·70	73 40 23·56	2603	140 141
Kágarol, XIV	Panch Maháls	*Vide* page 7—H.	22 53 22·13	73 41 32·37	† 595/5	14
Káldurg h.s. ... ... *Kaldrug*	Thána	On the highest point of a peak, on the ruined hill fort about 1½ miles S.E. of the village of Shelvál, 2½ miles W. of the village of Chaháda, and 3 miles E. by S. of the Railway Station of Pálghar on the B. B. and C.I. Line: sub-division Máhim. 1829-32.	19 41 26·18	72 51 31·97	1535	206 207
Káliákua Hill	Panch Maháls	About ½ a mile S. by W. of the small village of that name, 3 miles in the same direction of the 7th milestone on the high road from Godhra to Dohad, 6½ miles E. by S. of the former town, and 2 miles N.E. by E. of the small village of Richhia: sub-division Godhra. 1860-61.	22 44 55	73 45 35	638	117

* To circle and dot on lead. † To upper surface of circular, perforated pillar.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station — Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Kalsúbái, XXXIX ...	Ahmednagar	*Vide* page 11—H.	19 36 1·76	73 45 2·44	* 5400 / 4·3	45,46, 47
Kalva Hill Mark ... ... *Kalwa h.s.*	Thána	At the N. end of a flat-topped hill between the Thána and Bassein creeks, on the boundary of the Kalyán and Sálsette sub-divisions. The railway from Bombay passes by the north and east base of the hill, skirting the Bassein creek. About 2 miles W. of the town of Thána, and ¾ of a mile N.W. by N. of Mubra village on the high road from Bombay. 1829-32.	19 11 29·39	73 3 28·15	[1006]	226
Kámandurg, XL	»	*Vide* page 12—H.	19 22 53·80	72 59 59·54	† 2138 / ‡	50
Kámrej h.s.	Baroda State	On a conspicuous knoll on the left bank of the Tápti river, and close S. of the town of Kámrej. The station consists of a pillar of masonry 1 foot in height, having a mark-stone in its upper surface and another below: sub-division Baroda. 1863.	21 16 55·44	73 0 33·84	§ 119 / 1	258
Kandálva, XIX	Rewa Kántha Agency	*Vide* page 8—H.	22 28 3·92	73 50 12·62	* 1402 / 5	21
Kandoba h.s.	Násik	On the hill so called, about 2 miles S.E. of Nándgaon village, 1¼ miles S. by W. of Sákori, and 4¼ miles S.E. of Nándur Railway Station on the G.I.P. Line: sub-division Igatpuri. The station is denoted by a circle and dot engraved on the rock *in sitú* which is flush with the ground. 1865.	19 46 53·43	73 48 15·82	‖ 2173	64
Kanjangad h.s. ... ... *Kunjarghar H.S.*	»	On a hill locally so called, about 2¼ miles N. of the small village of Táki Devgaon, and the same distance S.S.W. of Alvand: sub-division Igatpuri. The station consists of a platform of rubble enclosing a perforated and isolated pillar of masonry having three marks, one in the foundation, the second at the ground level, and the third in the upper surface of the pillar; access to the second mark is obtained through an aperture on the north side. 1865.	19 49 11·38	73 30 21·98	** 2321	65
Kanor Palace	Meywar Agency	Highest pinnacle of the palace in the town, about 7 miles S.E. of the town of Bhíndar: Oodeypore State. 1862.	24 25 55·6	74 18 27·0	[1634]	83
Kantár Hill ... ... *Jawalia H.*	Rewa Kántha Agency	About ¼ of a mile W. of the small village of that name, 2½ miles W. by N. of Shingnál on the road from Lúnáváda to Godhra, 3½ miles E.N.E. of the large village of Kothamba, and 2½ miles N.N.E. of Dhámnia: Lúnáváda (Lunáwára) State. 1860-61.	23 2 22	73 36 40	579	112
Kántáveda Hill Mark (helio.) ... *Gundicia H.*	Panch Mahás	About a mile S.W. of the village of the same name, 3 miles E. by S. of Arádra village, and 7 miles S.E. by E. of Vejalpur town on the main road from Kálol to Godhra: sub-division Kálol. 1861.	22 38 3·49	73 42 26·16	776	125 126

* To upper surface of circular, perforated pillar. † To circle and cross-lines 2½ feet below surface of hill. ‡ See description of this station. § To upper surface of pillar. ‖ To circle and dot on rock *in sitú*. ** To upper surface of perforated pillar.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station — Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Kánvai h.s. ... ... *Kaonahi H.S.*	Násik	On the fortified hill about ¼ a mile S. of the large village so called, and 3½ miles N.N.W. of Ghoti Railway Station on the G.I.P. Line: sub-division Igatpuri. 1865.	19 46 22·08	73 39 39·03	3000	63
Karáli, XXII	Rewa Kántha Agency	*Vide* page 9—H.	22 10 17·84	73 53 42·39	* 1092/5	25
Karanja, XXXIV† ...	Kolába (Kulába)	On the highest part of the southern and higher of two hills on the island of Uran about 6 miles to S.E. of Bombay. The hill is locally called Dronagiri, and has the cart road from the town of Uran to Karanja skirting its eastern face. There are two very good reservoirs of water on the hill, one at ¼ of a mile to N.W. of the station, and the other ¾ of a mile in the same direction and contiguous to a dilapidated chapel. The station is in the lands of the village of Chanja, sub-division Panvel. 1839-42. The station as originally built was marked by a "circle and centre on a square pile of stones." No change appears to have been made in 1842. It was visited in 1866 in connection with the Bombay Island Triangulation, but no statement is forthcoming to show that any change was then made. In 1881 Mr. W. G. Beverley found the station to consist of a solid, circular pillar of masonry 3 feet in diameter enclosed in a platform of stones about 10 feet square and 4 feet high. The pillar was much damaged and a flag-staff of the Harbour Surveying Department was found inserted in it, consequently the mark-stone was not found in its place but on the side of the platform: the mark-stone was firmly refixed in the centre and upper surface of the pillar. When again visited in 1885, the station was found in good preservation, and over the upper mark the usual rectangular protecting pillar of masonry was built. The directions and distances of the circumjacent villages are:—Uran N., miles 1¼; Karanja S.E., mile 1; Chanja N.E. by E., mile 1; and Nagaon N.W., miles 1¼.	18 51 24·99	72 58 49·06	‡ 997/4	§
Karodra Tree ... ... *Larwi Brab*	Baroda State	Palm tree about 200 yards E. of the village so called on the main road from Surat to Bárdoli, 10 miles W. by N. of the latter town, and 6 miles N. by W. of the town of Palsána: sub-division Palsána. 1863.	21 10 26	73 0 16	...	275 276
Katarvádi Hill East Point ... *Katria E. Hill*	Násik	The eastern end of a flat-topped hill, about ¾ of a mile E.S.E. of the village so named, 1 mile N. by E. of Visápur village, and 4½ miles S.W. by S. of Manmád Railway Station on the G.I.P. Line. On the boundary between Yeola and Chándor sub-divisions. 1845.	20 11 55	74 26 44	...	175
Katarvádi Hill West Point ... *Katheradi*	„	The western extremity of a flat-topped hill, about ¼ a mile S. of the village so called, and 3¼ miles W. of the celebrated hill fort of Ankai Tankai: sub-division Chándor. 1842-43.	20 11 49	74 25 59	2994	...
Katlia h.s.	„	On the western of the two detached hills, about 1¼ miles S by E. of Belgaon, 2¾ miles S.W. by S. of Damangaon, and 1¾ miles W.N.W. of Táki Khurd village: sub-division Igatpuri. The station consists of a platform of earth and rubble enclosing a pillar of masonry. 1865.	19 42 4·85	73 46 16·26	‖ 3185	77, 78

* To upper surface of circular, perforated pillar. † This station appertains to the Bombay Longitudinal Series. ‡ To upper surface of circular pillar.
§ For triangles fixing this station, see the Synoptical Volume of the Bombay Longitudinal Series. ‖ To upper surface of pillar.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station — Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Kedváda Tree ... ... *Kerwara Brab Tree*	Broach	Highest of the two palm trees about 200 yards W. of the large village of this name, 4½ miles N.N.E. of the town of Vágra, and 6 miles S. of the town of Ámod: sub-division Ámod. 1863.	21 54 31	72 54 6	...	311 312
Kem h.s. ... ... *Rawra h.s.*	Násik	On the hill so called, about 1½ miles W.N.W. of the village of Dungrál, the same distance N.E. of Pángarvádi village, and 1½ miles S.E. by S. of Vágdhond village: sub-division Kalvan. 1843.	20 28 15·63	73 44 6·67	3863	143 144
Kesarva, XXV	Rewa Kántha Agency	*Vide* page 9—H.	21 45 35·98	73 26 7·74	* 1561 / 4	29
Kesvan s.	Broach	On the elevated ground between the villages of Múler, and Kesvan, about a mile S.E. of the former and the same distance W. of the latter, and 9 miles W. by N. of the town of Vágra: sub-division Vágra. The station consists of a pillar of masonry 1 foot in height. 1863.	21 51 37·98	72 44 40·20	† 42 / 1	269
Khandeshwar Hill Pagoda ... *Kandeshwar Pagoda*	Poona	About 4 miles S.E. of the well-known hill of Singi, and 6½ miles W. by N. of Karus village and market: sub-division Khed. 1829-30.	18 54 35·5	73 45 14·6	4087	253
Khánpur House	Broach	Highest house on the E. edge of the village of this name, about 3 miles W. by S. of Púrsha village, and 6½ miles E. of the town of Tankári: sub-division Jambusar. 1863.	21 59 11	72 48 48	...	314
Khánpur Tree ... ... *Muchasar Hill Tree*	„	On the right bank of the Dhádhar river, about 1½ miles S.E. by E. of the village of Khánpur, 5 miles W. by S. of the town of Ámod, and 7½ miles E. by S. of the town of Tankári: sub-division Jambusar. 1863.	21 58 41	72 49 57	...	...
Kharji Hill Math ... *Karkeyla H. Matha*	Meywar Agency	About ¼ a mile E. of the village so called, 5 miles W. by S. of Semári village, and 6 miles S.E. by E. of Rikhabdeo, a place of pilgrimage on the main road between Kherwára and Oodeypore: Oodeypore State. 1862.	24 2 17·1	73 49 11·5	[1874]	91
Kohoj h.s.	Thána	N.W. of a peak on the compact, isolated and fortified hill so called rising abruptly from the plain and crowned by two remarkable knobs of trap rock: sub-division Váda. 1829-32.	19 40 19·49	73 1 48·50	1889	204 205
Kolvanna s. ... ... *Kolowna Stn.*	Broach	On rising ground surrounded by fields, about 1½ miles W. of the village so called, 1½ miles S.E. of Roja Tankária village, and 4½ miles N.W. by N. of the town of Vágra: sub-division Vágra. The station consists of a pillar of masonry 1 foot in height having a mark-stone in its upper surface and another below. 1863.	21 53 51·66	72 50 59·95	† 55 / 1	268
Korthan Hill Dipmal ... *Korthan Dipmal*	Ahmednagar	Also known as Ana Dipmal. In the village of Khandoba, about 2 miles S.W. of Pimpalgaon Rotha village: sub-division Párner. 1837-38.	19 6 27·4	74 19 15·6	...	‡
Kua, VIII	Meywar Agency	*Vide* page 7—H.	23 29 21·90	73 56 50·94	* 772 / 5·0	8

* To upper surface of circular, perforated pillar. † To upper surface of pillar.
‡ For triangles fixing this point, see the Synoptical Volume of the Bombay Longitudinal Series.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station — Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Kulang Hill Mark ... *Kurung h.s.*	Násik	In the hill fort so called on a flat-topped, and almost inaccessible hill of the Sahyádri range, about 1¾ miles S. of the village of Kulangvádi, 3½ miles N.N.W. of Ghátgad village, and the same distance S.E. by E. of the village of Jamundi: on the boundary of the sub-divisions of Igatpuri and Akola. 1829-32.	19 35 21·05	73 40 42·07	4803	230
Láchharas Hill Mark (helio.) ... *Lasria Hill*	Baroda State	A low hill about a mile N. of the village of that name, about 2¾ miles W. of Kosindara on the Heran river, the same distance N.W. of Vásna village on the same river. The road from Vásna to Sardárpura passes by the north of the hill: sub-division Sankheda. 1861.	22 8 11·70	73 45 13·57	511	...
Ládvi Tree ... ... *Oombhil B. Tree*	,,	Clump of three palm trees at the S.E. corner of the village of the same name, about ¾ of a mile N. of Haripara village, and 7 miles E. of the city of Surat: sub-division Palsána. 1863.	21 11 32	72 59 45	...	...
Lakarwás, XXXII* ...	Meywar Agency	*Vide* page 5—H.	24 31 47·99	73 52 10·41	† 2574 / 3	‡
Landiváda Hill Mark ... *Landiwarra H.*	Panch Maháls Agency	Nárukot State. 1861.	22 21 9·06	73 42 48·52	1090	132 133
Limodra Tree ... ... *Turkeisur Tank Bur Tree S.*	Baroda State	On the E. bank of a small tank about 1½ miles E.S.E. of the village so called, 2½ miles S.W. of the town of Tadkeshvar on the main road from Kem to Mándvi, and 6 miles N.E. by N. of the town of Kámrej on the Tápti river: sub-division Kámrej. 1863.	21 20 56	73 3 54	[80]	...
Lindia Hill ... ... *Pathal N. Hill*	,,	About ¾ of a mile E. by N. of the village of this name, the same distance S.S.E. of Ratoli village, and 1¾ miles S. by E. of Ámkhuta village: sub-division Veláchha. 1863.	21 22 47	73 16 30	[631]	283
Lohária, VI	Meywar Agency	*Vide* page 6—H.	23 45 58·19	74 15 4·09	§ 851 / 2·8	6
Lohária Hill Temple No. 1 ... *Loharia H. Temple*	,,	On the hill immediately S. of the village so called, 5 miles E. of Kotra village on the left bank of the Mahi river, and 3 miles S.E. by S. of the Baneshwar temple near the junction of the Som and Mahi rivers: Bánswára State. 1862.	23 45 32·2	74 15 47·7	...	94
Lohária Hill Temple No. 2 ... *Amzo Hill Temple*	,,	The western of the two temples on two hills close to each other, about ¼ a mile S.E. of the village of Lohária, 3 miles S.S.E. of the Baneshwar temple, and 5 miles E. of Kotra large village on the Mahi river: Bánswára State. 1862.	23 45 22·9	74 15 21·6	...	95
Lonjái h.s. ... ... *Vinchoor Hill Pag. S.*	Násik	About a mile S.E. of Sonávádi Buzurg village, 3¼ miles W. by S. of the town of Vinchúr, and 4¼ miles E. by N. of the town of Niphád: sub-division Niphád. 1829-32.	20 5 38·62	74 13 1·53	2260	177 178
Madh Building ... ... *Versova House*	Thána	On the fortified island of this name, between the fort and the village, and opposite the sea-port town of Vesáva, and 3¾ miles W.N.W. of Ándheri Railway Station on the B. B. and C. I. Line: sub-division Sálsette. 1829-32.	19 8 4	72 50 3	[126]	227

* This station appertains to the Karáchi Longitudinal Series. † To upper surface of circular pillar.
‡ For triangle fixing this station, see the Synoptical Volume of the Karáchi Longitudinal Series. § To upper surface of circular, perforated pillar.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station — Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Mahálakshmi Peak ... *St. Valentine's Peak*	Thána	A conical funnel-shaped hill called by Mariners "Valentine's Peak", about 1½ miles W.S.W. of the village of Vivalvedhe, the same distance E. of the village of Ránshet on the road from the Railway Station of Dáhánu to Jawhár, and 2 miles N.W. by W. of Charoti village: sub-division Dáhánu. 1829-32.	19 55 57	72 57 28	1521	202 203
Máhuli h.s. ... ... *Mauli H. Fort s.*	„	On the summit of the hill fort so called, about 1½ miles W. of the village of the same name, 2½ miles E.S.E. of Vándra village, and 4½ miles N. by W. of Vásind Railway Station on the G. I. P. Line: sub-division Sháhápur. 1829-32.	19 28 2·75	73 17 19·14	2785	228 229
Mákna s. ... ... *Makna H.S.*	Baroda State	At the S.W. corner of some waste ground, about ⅔ of a mile S. by W. of the village so called, the same distance S.E. of Válthán, and ⅔ of a mile of Umbhel: sub-division Palsána. The station consists of a pillar of masonry 2 feet in height having a mark-stone in its upper surface and another below. 1863.	21 11 51·96	73 1 18·47	* 99/2	259
Malangad Hill No. 1 ... *Malangarh Hill*	Thána	Highest point of the hill known as Bavamalang Hill, now almost inaccessible, about 2 miles E.S.E. of Bandanvádi village, 1¾ miles N. by E. of Mohadar village, and 3¼ miles S. by W. of Banoli village: sub-division Kalyán. 1829-30.	19 6 32	73 13 12	...	†
Malangad Hill No. 2 ... *Malangarh Peak*	„	Conical peak of the Bavamalang Hill, about 200 feet S.W. of the preceding point: sub-division Kalyán. 1829-30.	19 6 31	73 13 7	...	†
Málunje Hill Pagoda ... *Mahinga H. Pag.*	Ahmednagar	On the western extremity of a small detached hill immediately overlooking the village so called, and 2¾ miles E. of Ambhor: sub-division Sangamner. 1829-32.	19 29 7·5	74 21 58·7	...	247
Mandanpur Hill ... ... *Mandanpur S. W. H.*	Panch Máhals	1861-62.	22 17 38	73 32 3	...	137
Mandanpur h.s.	„	1861-62.	22 18 26·82	73 33 21·30	488	134
Mánur Peak ... ... *Tankera Peak*	Násik	About 2 miles S. of the village so called, 3 miles S.W. of Sáler village, and the same distance N.W. of Vátora village on the Aṛam Nadi: sub-division Báglán. 1829-32.	20 41 48	73 57 9	[4848]	147 148
Márkinda Hill Fort ... *Markandia Highest Pt.*	„	Highest point. Immediately E. and opposite the sacred hill of Saptashring, about 2½ miles N.W. of the village of Khedmadi, and 4 miles N.E. by N. of the town of Vani: sub-division Kalvan. 1845.	20 23 2·0	73 58 4·8	[4370]	166
Masábár, XXI	Panch Maháls	*Vide* page 8—H.	22 18 54·50	73 44 59·15	‡ 1160/3	24
Mesankhed Hill ... ... *Mesunkher*	Násik	On a hill, about 1½ miles W. by S. of the village of Mesankhed Buzurg, the same distance E.S.E. of Kokankhed, and 7½ miles in the same direction of the town of Chándor: sub-division Chándor. 1829-32.	20 17 30	74 23 58	[3186]	181 182
Mhordan h.s. ... ... *Mortant H.S.*	„	On the ridge running nearly in a northerly direction of the mass of hills called by this name, about 1¼ miles S.E. of Khirgaon, and 3¼ miles in the same direction of Ghoti Railway Station on the G. I. P. Line: sub-division Igatpuri. 1865.	19 41 51·63	73 43 4·83	3452	67, 68

* To upper surface of pillar. † For triangles fixing this point, see the Synoptical Volume of the Bombay Longitudinal Series.
‡ To upper surface of circular, perforated pillar.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station / Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Nádirda Tree ... ... *Nandera Brab Tree*	Broach	Palm tree on the E. bank of a tank immediately E. of the village so called, 1¼ miles E.N.E. of Ákhod village, and 9 miles S.W. of the town of Vágra: sub-division Vágra. 1863.	21 45 23	72 46 23	...	...
Nalvári Hill Bush ... ... *Nalegaon H. Bush*	Násik	At the W. end of an isolated hill, about a mile S.S.E. of the large village so called, 4 miles W. by S. of Lakhmápur, and 10 miles S.W. by W. of the town of Vani: sub-division Dindori. 1845.	20 16 7	73 48 23	[2622]	171
Nandáv Tree ... ... *Nandao Brab*	Baroda State	Immediately E. of the small village of this name, about 3 miles S.E. by E. of Hathuran village on the B. B. and C. I. Railway Line, and 4 miles N. of the town of Veláchha: sub-division Veláchha. 1863.	21 28 56	73 3 20	...	285 286
Nángla Tree ... ... *Nangal B.*	Broach	Highest of the four palm trees about a mile W. of the village so called, and ¼ of a mile S. by E. of the town of Sajod on the metalled road from Hánsot to Ankleshvar: sub-division Ankleshvar. 1863.	21 36 29	72 57 51	...	291 292
Náráyangad Hill Math ...	Meywar Agency	On the S.E. extremity of a mass of hills, about 3 miles S. of the large village so called, and 3½ miles W.N.W. of Darauli on the main road from Oodeypore to Nibhera: Oodeypore State. 1862.	24 38 17·9	73 55 30·6	...	82
Náráyangad Hill Pagoda ... *Naraingarh Pagoda*	Poona	In the hill fort, about 4 miles E. of the large village of Náráyangaon on the road from Poona to Násik: sub-division Junnar. 1829-30.	19 6 57·0	74 4 15·7	2872	*
Násik Idga	Násik	About ¾ of a mile W. of the town, ¼ of a mile S.W. by W. of the junction of four roads, and a short distance S. of the road from Násik to Sádhpur: sub-division Násik. 1845.	19 59 39·3	73 49 15·5	...	194
Nikorda h.s.	Surat Agency	1829-32.	20 33 2·46	73 21 6·97	1912	153 154
Nimbadera h.s. ... ... *Nimbadera*	Ahmednagar	On Godaknáth Hill, about 2½ miles E. by N. of Dehara village, 4½ miles N.E. by N. of Vilad Station of the Dhond-Manmád Railway, and 3 miles W. of Dongargaon: sub-division Nagar. 1845-46.	19 14 42·27	74 45 22·94	2421	*
Páháj Tree ... ... *Paj Idga B. Tree*	Broach	Centre one of the three topless palm trees close S.W. of the village so called, about 1½ miles N.N.E. of Mosam village, and 3 miles N.W. of the town of Vágra: sub-division Vágra. 1863.	21 51 45	72 50 27	...	306 307
Palia Hill Mark (helio.) ... *Palia h.s.*	Meywar Agency	On one of a group of hills at the S.W. corner of the Jaisamand or Dhebar lake, about 2¾ miles N.W. of the village of Kherád, and 8 miles N.W. of the town of Salúmbar: Oodeypore State. 1862.	24 14 2·84	74 0 40·35	1770	84, 85
Pándu Lena Hill ... ... *Lenna Caves*	Násik	The highest part of the easternmost of three isolated hills having the celebrated Pándu Lena Buddhist caves, immediately E. of the high road from Bombay to Agra, and 5 miles S.W. by S. of the town of Násik: sub-division Násik. 1845.	19 56 18	73 47 27	[2990]	195 196

* For triangles fixing this point, see the Synoptical Volume of the Bombay Longitudinal Series.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station — Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Pánoli Building ... ... *Panali House*	Broach	Ridge of a large house in the town of this name on the B. B. and C. I. Line, about ¼ a mile S.W. of the Railway Station so called: sub-division Ankleshvar. 1863.	21 31 50·2	73 0 46·8	...	288
Párdi Tree ... ... *Pálri B. Tree*	Baroda State	Higher of the two palm trees about ¼ a mile S. of the village so called, close to the right bank of the Tápti river, and 1¼ miles N.N.W. of the town of Kámrej: sub-division Kámrej. 1863.	21 18 20	73 0 10	...	279 280
Párner, XXVI*	Ahmednagar	*Vide* page 12—H.	19 2 34·75	74 26 51·54	† 3239 3·2	53, 54
Párnera, XXXIII	Surat	*Vide* page 10—H.	20 32 56·85	72 59 23·60	‡ 613·96 0	38
Patángdi, XIII	Rewa Kántha Agency	*Vide* page 7—H.	22 52 15·70	73 55 49·52	† 922 2	18
Patángdi Hill Mark ... *Patangri H.S.*	Panch Mahál	On a hill on the boundary of Godhra sub-division and Devgad Báriya State, about a mile N.W. of the preceding station. 1860-61.	22 52 50·34	73 55 2·38	865	115 116
Páthal, XXVIII	Surat	*Vide* page 9—H.	21 21 56·88	73 16 32·89	§ 701 1	33
Patta h.s.	Ahmednagar	On the highest part of the hill fort so called, about ¼ a mile N.N.E. of the small village or hamlet of Konkangaon, and 3 miles W. of Somthána village: sub-division Akola. The station consists of a platform of earth and rubble enclosing a perforated pillar of masonry having an aperture on the N. side for access to the mark below. 1865.	19 42 32·87	73 52 29·80	‖ 4562	57, 58 69
Pávágad, XX	Panch Mahál	*Vide* page 8—H.	22 27 44·33	73 33 28·25	† 2721 2	22, 23
Pávágad Hill Temple ...	,,	Temple of Kálka Devi on the highest peak in the famous hill fort of Pávágad: this portion of the hill fort is called Bála Killa: sub-division Kálol. 1861.	22 27 47·3	73 33 25·5	¶ 2812	127 128
Pilva, XXXI	Surat	*Vide* page 10—H.	20 38 53·72	73 26 1·00	§ 2018 0·8	36
Píplia s. ... ... *Pipria Stn.*	Broach	On the embankment of a small tank on the boundary of the villages of Píplia and Vahiál, about ¼ a mile E. of the former, and 1¼ miles W.S.W. of the latter, and 6 miles S.W. by W. of the town of Vágra: sub-division Vágra. The station consists of a pillar of masonry 1 foot in height. 1863.	21 47 56·01	72 48 22·72	** 34 1	267

* This station appertains to the Bombay Longitudinal Series. † To upper surface of circular, perforated pillar.
‡ To circle and dot engraved on rock *in situ*. § To upper surface of platform. ‖ To upper surface of perforated pillar.
¶ To top of temple. ** To upper surface of pillar.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station — Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Rájdhair Fort ... ... *Rajdhir Fort*	Násik	The highest part of the hill in the fort, about a mile N.W. of the small village of Rájdhair, 1¼ miles E. by S. of Kapsi village, and 5 miles N.W. of the town of Chándor: sub-division Chándor. 1845.	20 23 11	74 14 8	[4398]	...
Rájdhair Peak ... ... *Rajdhir W. Peak*	,,	W. peak about 2¼ miles N.E. of the village of Kheldari, 1¼ miles S. by W. of Kapsi village, and 6 miles N.W. by W. of the town of Chándor: sub-division Chándor. 1845.	20 22 41	74 12 42	...	...
Rámahabit Hill ... ... *Ramachee Abutment*	,,	Isolated hill about a mile N.E. of the village of Katarvád, 1¼ miles S.E. by E. of Várgaon Pángu, and 3¼ miles S.W. of Manmád Railway Station on the G.I.P. Line: sub-division Chándor. 1845.	20 12 53	74 26 54	...	173 174
Rámsej Fort Pagoda ...	,,	On a hill at the eastern foot of which lies the village so called immediately E. of the high road from Násik to Peint, and 7¼ miles N. by W. of the former town: sub-division Dindori. 1829-32.	20 6 47·0	73 48 32·0	3278	189 190
Ratola Peak ... ... *Wasthana Peak*	Baroda State	Of an isolated hill about a mile S.W. of the village of this name, the same distance E.S.E. of Degaria village, 5¼ miles E. of the large village of Naroli Náháni, and the same distance N.E. by N. of Nogáma on the main road from Kem to Mándvi: sub-division Veláchha. 1863.	21 23 6	73 13 17	[402]	284
Rávlya Fort ... ... *Rowlia Centre*	Násik	Centre of the fortified hill in the Chándor range, about 1¼ miles N. by E. of Khedmari village, 2¾ miles S.S.E. of Pálapimpri village, and 5 miles N.E. of the town of Vani: sub-division Kalvan. 1845.	20 22 25	73 59 56	...	167
Rena Hill Mark (helio.) ... *Reyna Hill*	Panch Mahals	On the highest point of a small isolated hill about ¼ a mile N. of the village of that name, 1¼ miles S.S.W. of Dháeka, 2 miles E.N.E. of Morva, 1¾ miles S.E. of Tarsang, and 4¾ miles N.N.W. of Karsana close W. of the high road from Páli to Lúnáváda: sub-division Godhra. 1858-59.	22 55 23·90	73 32 8·88	501	113 114
Richhia, XVIII	,,	*Vide* page 8—H.	22 42 3·84	73 39 24·74	* 542/5	18, 19 20
Richhia h.s. ... ... *Reinchia Asala Platform*	,,	On a small isolated hill about ¼ a mile S.W. of the small village of that name, 6 miles E. of the 3rd mile-stone on the high road from Godhra to Kálol, 1 mile S.S.W. of Mahulia, and the same distance N.N.E. of Mirápuri Mota: sub-division Godhra. 1860-61.	22 43 42·81	73 43 43·79	676	118 119
Rúpgad h.s.	Baroda State	On a fortified hill so called, about 1¼ miles E. by N. of the village of Taklipára, 2¼ miles S. of Vádi village, and 3¼ miles N. by W. of the village of Deoriaván on the right bank of the Púrna river. On the boundary between the Dáng and the Baroda States. 1843.	20 57 35·99	73 38 11·39	1717	145
Sábla Hill Tree ... ... *Sabra H. Tree*	Meywar Agency	On a hill immediately W. of the village so called, about 2¼ miles S.S.E. of the large village of Munger, and 3¼ miles N.W. by N. of the Baneshwar temple near the junction of the Mahi and Som rivers: Dúngarpur State. 1862.	23 50 42	74 12 49	[957]	92, 93

* To upper surface of circular, perforated pillar.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station — Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Sádadván h.s. ... ... *Somki H.S.*	Baroda State	On the highest point of a mass of low hills called Somki, about 1¼ miles W. by N. of Agásván, 1½ miles W. of Sádadván, and 4½ miles N.N.E of the town of Vyára on the road from Bárdoli to Songad. The station consists of a pillar of stone masonry 6 inches in height, having a mark-stone in its upper surface and another below: sub-division Vyára. 1863.	21 10 15·55	73 27 31·11	* 606 / 0·5	254
Ságbára, XXVI	Rewa Kántha Agency	*Vide* page 9—H.	21 34 22·74	73 49 28·11	1961 / †	30
Sagwára, V	Meywar Agency	*Vide* page 6—H.	23 41 25·80	74 2 28·86	‡ 976 / 4·6	5
Sagwára Hill Temple No. 1 ... *Jethol H. Temple*	„	About 2¾ miles N. by W. of the town so called, ¾ of a mile N. of the small village of Gámra, and 1¼ miles E.S.E. of Pádra village: Dúngarpur State. 1862.	23 42 50·4	74 3 21·6	[904]	96
Sagwára Hill Temple No. 2 ... *Sagwara H. Temple*	„	About 2 miles W. of the town so called, and ½ a mile N. of the village of Gowári: Dúngarpur State. 1862.	23 40 47·3	74 3 21·3	[885]	97
Sajod Mosque ... ... *Sajad Musjid*	Broach	A large mosque on the E. edge of the town on the main road from Hánsot to Ankleshvar, and 6¾ miles E.N.E. of the former: sub-division Ankleshvar. 1863.	21 37 7·3	72 56 54·5	...	293 294
Sáler, XXXII	Násik	*Vide* page 10—H.	20 43 18·44	73 58 49·11	§ 5140 / 0	87
Salesra Hill Mark (helio.) ...	Rewa Kántha Agency	1861.	22 26 48·08	73 52 50·09	1473	129
Salúmbar Hill Tree ...	Meywar Agency	Highest tree close N. of the hill fort immediately N. of the town: Oodeypore State. 1862.	24 8 47	74 5 29	[492]	86, 87
Sangamner Hill Pagoda ...	Ahmednagar	At the N.E. corner of the town on the left bank of the Pravara river: sub-division Sangamner. 1829-32.	19 34 5·8	74 15 12·7	...	243
Saptashring Hill ... ... *Chattersingi Highest Pt.*	Násik	The highest or S.E. point of the sacred hill so called, about 4 miles N. by E. of the town of Vani: sub-division Kalvan. 1845.	20 23 24	73 56 53	[4645]	164 165
Sarmi Muváda Hill Mark ... *Bhanrahimber H.*	Rewa Kántha Agency	On the westernmost of the three ranges running parallel and in a N.N.E. and S.S.W. direction, about 1¼ miles E.S.E. of Bhana Simal village, and 6¼ miles E. by N. of the large village of Kadána on the left bank of the Mahi river: sub-division Sunth. 1862.	23 18 30·78	73 58 39·63	925	105
Sathvádi Hill Pagoda ... *Satawari H. Pag.*	Ahmednagar	On a high flat-topped hill, one of the range which forms the district boundary between Ahmednagar and Poona, ½ a mile S.W. by S. of the large village of Sathvádi, and 1¾ miles N. of Mándvi village on the Pushpávati river. 1829-32.	19 21 36·1	73 57 6·9	...	233
Sáva Tree ... ... *Sowa Brab*	Baroda State	About 400 yards S. by W. of the village so called, 1¼ miles S.S.E. of Nandáv village, and 2 miles N. of the town of Veláchha: sub-division Veláchha. 1863.	21 27 21	73 3 26	...	...

* To upper surface of pillar. † Height of pillar not forthcoming. ‡ To upper surface of circular, perforated pillar.
§ To mark-stone at surface of hill.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station — Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Semlia Hill Tree	Meywar Agency	On a hill, about 1½ miles W. of the village so called, 2 miles N.E. of the village of Od, and 4¾ miles N. of the town of Sagwára: Dúngarpur State. 1862.	23 44 43	74 4 21	[923]	...
Seria Hill Temple	,,	On the highest point of a low range of hills running nearly E. and W., about ½ a mile S. of the village so called, and 4¾ miles W. of the town of Salúmbar: Oodeypore State. 1862.	24 8 0·5	74 0 34·6	...	88
Sida Temple ... ... *Bhun Isolated N.W. Tem. on Tk.*	Rewa Kántha Agency	Isolated temple on the boundary between Broach and Rewa Kántha, about 1¾ miles E.N.E. of Dhámrod, and 1½ miles N.W. of Bharan. 1863.	21 31 11·7	73 3 43·7	...	287
Sidhpur, XXIII	Baroda State	*Vide* page 9—H.	22 4 15·21	73 31 26·99	* 168·72 †	26, 27
Singi, XXX‡	Poona	*Vide* page 12—H.	18 56 45·90	73 42 10·30	§ 4243 o	51, 52
Sinnar, XXXVII	Násik	*Vide* page 11—H.	19 53 15·61	74 2 47·49	‖ 2815·44 1·4	43
Sinnar h.s. ... ... *Sinnar H. Pagoda*	,,	On top of the western dome of Khandoba pagoda, about 2¼ miles N. by E. of the town so called: sub-division Sinnar. 1842-45.	19 52 39·01	74 3 16·32	...	179 180
Sísa, II	Meywar Agency	*Vide* page 6—H.	24 12 18·12	73 45 40·78	¶ 2282 4·4	2
Songad Fort Pagoda ...	Baroda State	Sub-division Songad (Songarh). 1843.	21 6 30·7	73 36 23·8	...	146
Songad Hill Mark ... *Songar H. Fort*	,,	Sub-division Songad. 1861.	21 10 8·60	73 35 40·27	1081	142
St. Valentine's Peak ...	...	*Vide* Mahálakshmi Peak.	...	...	...	...
Sulia Peak ... ... *Pimpalner Peak*	Násik	About 2 miles N.N.W. of the large village of Makmalabad, 5 miles in the same direction of the town of Násik, and a mile W. of the metalled road from Násik to Peint: sub-division Násik. 1845.	20 4 36	73 48 17	...	188
Surat Mosque ... ... *Surat Minaret Adroosah*	Surat	Minaret of Saiyid Idrus Mosque, one of the most conspicuous buildings in the city: sub-division Chorási. 1863. Note.—When visited by the Levelling Party in 1876-77, the mark was found in good order.	21 12 19·1	72 51 57·1	** 100·26	277
Tadkeshvar s. ... ... *Turkeisur H.S.*	,,	About 2¼ miles S. W. by W. of the large village of that name on the high road from Kem to Mándvi, and a mile E. of Limodra: sub-division Mándvi. The station consists of a pillar of masonry 1 foot in height, having a mark-stone in its upper surface. 1863.	21 21 20·29	73 3 49·63	†† 131 1	257
Tahola Hill ... ... *Thawlia Fort*	Násik	W. peak at the westernmost extremity of the fortified hill on the Chándor range running W. and E., about a mile N.E. by N. of Pingalvádi village, 1½ miles S. by W. of Jamle village, and 9 miles N.W. of the town of Vani: sub-division Kalvan. 1845.	20 25 38	73 50 44	[4054]	160 161

* To top of rectangular protecting pillar. † See description of this station. ‡ This station appertains to the Bombay Longitudinal Series.
§ To upper mark-stone flush with surface of hill. ‖ To upper mark-stone. ¶ To upper surface of circular, perforated pillar.
** To mark engraved in zinc floor. †† To upper surface of pillar.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station — Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Takmak Hill Mark ...	Thána	About 3¼ miles S.S.E. of Tekála village, and 8 miles E. of the Railway Station of Saphála on the B. B. and C. I. Line: sub-division Máhím. 1829-32.	19 34 21·73	72 59 10·97	2000	209
Talegaon Peak	Násik	Highest point about 1½ miles N. of the village of the same name on the road to Dindori, 2 miles W.N.W. of Akrale village, and 3 miles S. by W. of the town of Dindori: sub-division Dindori. 1845.	20 9 40	73 51 44	...	172
Talodra Tree ... ... *Chutthani B. Tree*	Baroda State	About ¼ of a mile S.E. of the village so called: sub-division Palsána. 1863.	21 8 13	72 59 56	...	...
Tána, XXIX*	Meywar Agency	*Vide* page 5—H.	24 43 3·93	74 13 44·30	† 2089 / 3	‡
Tankári Custom House ... *Tankaria Bunder House*	Broach	Centre of a low building about 2 miles S.W. by S. of the sea-port town of the same name, and ¼ a mile N.N.E. of the Bandar: sub-division Jambusar. 1863.	21 58 7·9	72 41 36·1	[37]	313
Tankári s. ... ... *Tankaria Stn.*	,,	On the W. embankment of a small tank about a mile E. of the sea-port town: sub-division Jambusar. The station consists of a pillar of masonry 3 feet in height. 1863.	21 59 11·86	72 43 24·37	§ 32 / 3	270
Tárápur Fort s.	Thána	Immediately W. of the sea-port town of the same name, on the creek so called: sub-division Máhím. 1829-32.	19 51 48·65	72 43 21·74	...	208
Tarbhán, XXX	Surat	*Vide* page 10—H.	21 0 34·13	73 6 16·97	† 140 / 2·7	85
Tarsári s. ... ... *Tarsowri H.S.*	Baroda State	Close to the state boundary between Baroda and Broach, about a mile W. by N. of the village of Tarsári, and 4¾ miles N. of Kim Railway Station of the B.B. and C.I. Line. The station consists of a solid, isolated, triangular pillar of masonry 5 feet in height, having a mark-stone in its upper surface and another below, surrounded by a platform of earth. 1863. Note.—When visited by the Levelling Party in 1876-77, the station was found in good order.	21 28 12·65	72 58 26·41	‖ 95·19 / 5	261
Tembla, X	Rewa Kántha Agency	*Vide* page 7—H.	23 15 8·95	73 55 14·93	¶ 767 / 5	10
Thána Church ... ... *Tanna Church Spire*	Thána	Top of spire of the church in the centre of the town. 1829-32.	19 11 57·7	73 1 15·0	83	225
Thána h.s. ... ... *Tana S.*	,,	In the island of this name, between the Tulsi and Pokaran lakes, about 1½ miles N.W. of Kalamshet village, and 4¾ miles N. of Bhándúp Railway Station on the G. I. P. Line: sub-division Sálsette. 1829-32.	19 12 42·12	72 58 52·53	1358	221 222
Trimbak h.s.	Násik	In the famous hill fort of this name, immediately S. of the town of Trimbak, a far-famed place of Hindu pilgrimage: sub-division Násik. 1829-32.	19 54 49·16	73 33 46·68	4246	183 184
Tringalvádi h.s.	,,	On the highest part of a flat hill so called, about 1½ miles S. by E. of Tringalvádi village, and 1½ miles N. of the town of Igatpuri: sub-division Igatpuri. The station consists of a platform of rubble enclosing a pillar of masonry. 1842-43.	19 42 43·06	73 35 58·06	§ 3238	59, 60 66

* This station appertains to the Karáchi Longitudinal Series. † To upper surface of circular pillar.
‡ For triangle fixing this station, see the Synoptical Volume of the Karáchi Longitudinal Series. § To upper surface of pillar.
‖ To upper surface of triangular pillar. ¶ To upper surface of circular, perforated pillar.

Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station / Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Tukái Hill Pagoda ... *Palsi H. Pag.*	Ahmednagar	On the S.W. peak of a small hill, about 2¼ miles S. of Vankute village, and 3¼ miles E.S.E. of Palsi village: sub-division Párner. 1829-32.	19 15 38·3	74 29 34·1	[2542]	251 252
Tukhed Hill ... ... *S.W. Hill*	Surat	About a mile E. of the village of the same name, the same distance N.W. of Páthal village, and 4¼ miles N.E. by E. of Nogáma on the main road from Kem to Mándvi: sub-division Mándvi. 1863.	21 21 28	73 14 5	[455]	281 282
Tukwása, III	Meywar Agency	*Vide* page 6—H.	23 56 14·66	74 5 39·93	* 1184 / 4·9	3
Tundaj House	Broach	Highest house about ½ a mile N.N.E. of the village so called, 1½ miles S.W. of Amanpur, and 2½ miles E. of Kora village: sub-division Jambusar. 1862-63.	22 6 47	72 46 0	...	315
Tundaj s.	"	On the N. bank of a small tank about 100 yards E. of a paka well, about 1½ miles S.W. by S. of the village so called, 1½ miles E. of Pánchkara, and 2½ miles N.W. by N. of Káva village: sub-division Jambusar. The station consists of an isolated pillar of masonry 5 feet in height surrounded by a platform of earth. 1863.	22 5 20·86	72 45 11·68	† 54 / 5	272
Uchak, XI	Rewa Kántha Agency	*Vide* page 7—H.	23 3 21·65	74 4 18·96	* 1238 / 5·2	11
Umarváda Tree	Broach	Palm tree immediately E. of the large village of the same name, about a mile W. of the B.B. and C.I. Railway Line, and 3¼ miles N. of Pándli Railway Station: sub-division Ankleshvar. 1863.	21 34 55	73 0 46	...	...
Umbargaon Tower ... *Uravra Peak*	Thána	Round tower in the town so called on the sea coast and at the mouth of the Varoli river, and about 4 miles N.W. by N. of Vevji Railway Station on the B.B. and C.I. Line: sub-division Dáhánu. 1829-32.	20 12 4·2	72 47 26·5	...	217
Uravra Hill Peak ... *Uravra Peak*	"	Centre of the largest rocky peak surrounded by a number of smaller rocks, about 1½ miles S.W. by S. of the principal village of Thákur, and 1½ miles N.N.E. of Karmeli: sub-division Panvel. 1839-40.	19 5 55	73 15 16	...	‡
Utiadara Tree ... ... *Umtiawadar B. Bur Tree*	Broach	Close to the state boundary between Baroda and Broach, about 1½ miles S.W. by S. of the village of Utiadara, and 1½ miles N. of Tarsári village which is ½ a mile W. of the B. B. and C. I. Railway Line: sub-division Ankleshvar. 1863.	21 28 24	72 58 29	...	...
Utúr Hill Mark ... ... *Otur S.*	Poona	On a high hill, at the trijunction of three villages, about 2 miles N. by W. of Manjarne, 3¼ miles N. of Udapur, and 1½ miles S.E. of Tekarvádi. The foot path from Udapur to Tekarvádi passes by the west of the station: sub-division Junnar. 1842-43.	19 19 15·50	73 59 49·15	[1050]	...
Vadápípla Hill Platform (helio.)	Rewa Kántha Agency	About a mile N.E. of the village so called, 1½ miles E.S.E. of Mander village, and 6 miles N. of the large village of Dudhia on the main road from Godhra to Jhálod: Devgad Báriya State. 1861-62.	22 58 24·86	74 3 20·02	1249	111

* To upper surface of circular, perforated pillar. † To upper surface of pillar.
‡ For triangles fixing this point, see the Synoptical Volume of the Bombay Longitudinal Series.

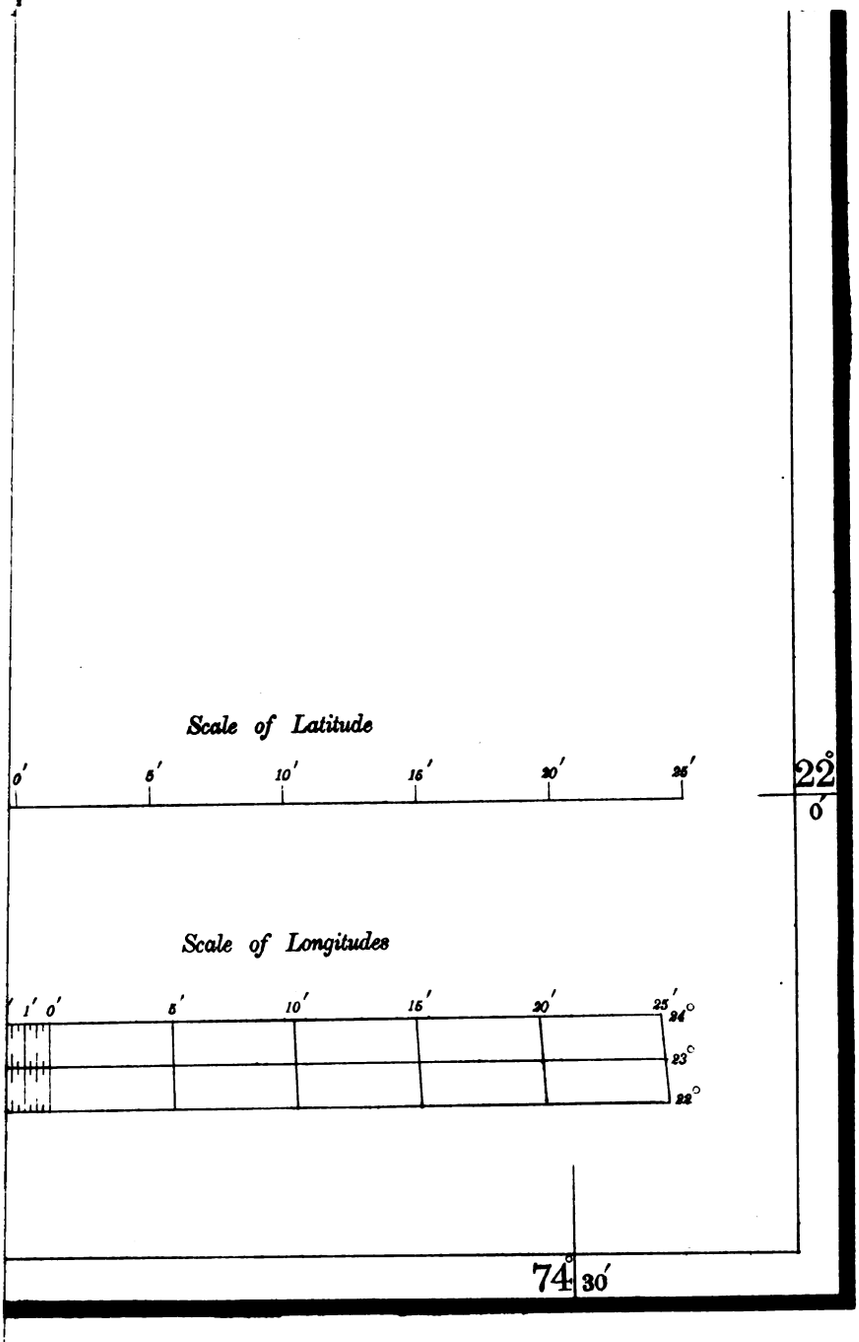
Name of Station or Point	District	Description	Latitude North	Longitude East of Greenwich	Height of Station — Height of Structure	No. of Triangle
			° ′ ″	° ′ ″	*feet*	
Vághera Hill	Násik	About 1½ miles S.W. by S. of the village of this name, the same distance W. by N. of Gorthan village, and 1½ miles S. of the Satti Ghát: sub-division Násik. 1829-32.	20 2 42	73 31 25	[3503]	198 199
Vágra Kacheri ... ... *Wagra Bungalow*	Broach	Centre of the building about ¼ of a mile S. by W. of the town: sub-division Vágra. 1863.	21 50 28·2	72 53 9·4	...	305
Vajrábái Hill Mark ... *Wajrabai S.*	Thána	On a conspicuous hill, about 2 miles N. of Keltan village, and 2½ miles S.S.W. of Devgad: sub-division Máhim. 1829-32.	19 31 56·01	73 4 53·34	1884	210
Vandra Hill	Panch Mahás Agency	1861-62.	22 19 26	73 39 26	...	135
Varandi Peak ... ... *Warwandi Peak*	Násik	About a mile W.S.W. of the village of this name, 2½ miles S. of Dákamba village, and 5 miles N.N.E. of the town of Násik: on the boundary between the sub-divisions of Násik and Dindori. 1845.	20 4 18	73 51 39	...	193
Vardhari, XV	Rewa Kántha Agency	*Vide* page 8—H.	23 5 32·78	73 30 12·73	* 556 / 5·8	15
Varoda h.s. ... ... *Warada Station*	Poona	On a hill, about 2 miles E.S.E. of Vádkal village, 2½ miles S.W. by W. of Pimpalgaon Joga, and 2 miles N.W. of Alme village: sub-division Junnar. 1829-30.	19 17 0·80	73 54 31·48	4641	†
Varsinde h.s. ... ... *Warsinda S.*	Ahmednagar	On a high, sharp-ridged hill at the N. edge of a plateau, about a mile N.N.W. of the village of this name, and 1½ miles S.W. by S. of Khalsinde village: sub-division Ráhuri. 1829-32.	19 26 8·35	74 30 45·85	[2397]	248 249
Varsinde Pagoda ... ... *Warsinda Pag.*	„	At the S. foot of the hill, and ¼ of a mile N.W. of the village of Varsinde: sub-division Ráhuri. 1829-32.	19 25 41·5	74 30 41·5	...	250
Varvand h.s.	Surat Agency	Dharampor State. 1829-32.	20 15 28·36	73 17 14·93	1988	151 152
Vatmái Hill Pagoda ...	Ahmednagar	On the eastern summit of the hill of this name, about a mile N. of the village of Sonoshi, 2 miles W. of Paregaon Khurd village, and 7 miles N. by E. of the town of Sangamner: sub-division Sangamner. 1844-45.	19 40 5·1	74 16 6·4	[2867]	241 242
Vijápur Hill Mark (helio.) ... *Jesur H.*	Baroda State	On the northern end of a small, low, isolated hill about 1½ miles E. of the village of this name, 2 miles W. of Kaliána village, and 4½ miles N. of the large village of Pándu. 1861.	22 44 21·26	73 25 11·01	305	124

* To upper surface of circular, perforated pillar.

† For triangles fixing this point, see the Synoptical Volume of the Bombay Longitudinal Series.

March, 1893.

J. ECCLES,
In charge of Computing Office.



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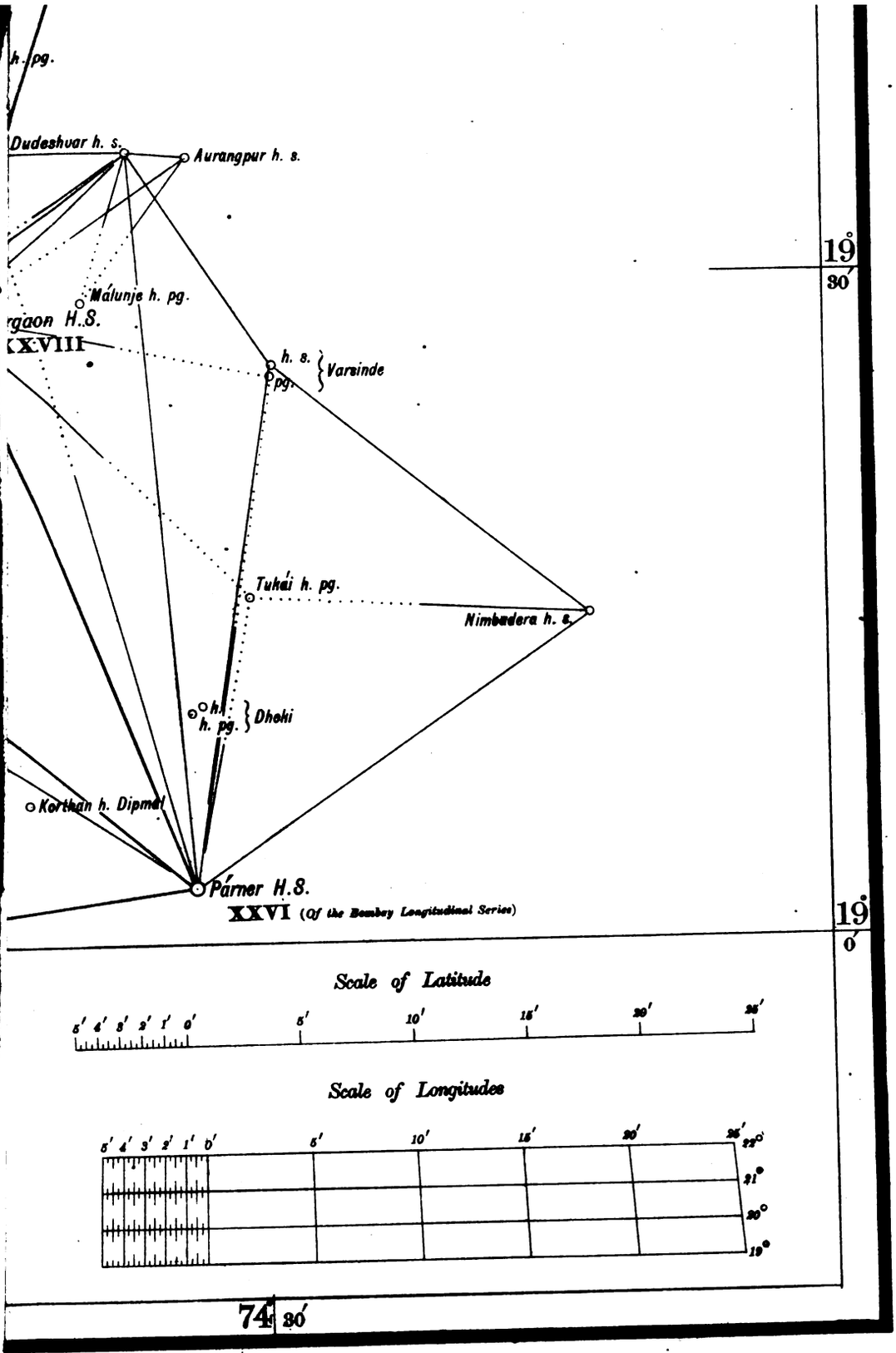

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An Account of the Measurement of two Sections of the Meridional Arc of India, bounded by the parallels 18° 3′ 5″; 24° 7′ 11″; and 29° 30′ 18″. By Lieutenant-Colonel Everest, F.R.S., &c., late Surveyor General of India, and his Assistants. London, 1847. (*Out of print*).

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