

BACK PAPER, No.

OF 18

FURTHER PAPER, No.

OF 18

READ AGAIN ORDER OF GOVERNMENT, DATED
189 , No. , MISCELLANEOUS.

ENCLOSURES.

CURRENT No.

STATEMENT WITH DITTO.

ORDER OF GOVERNMENT A A

LETTER OF GOVERNMENT.

STATEMENT WITH DITTO.

PAPERS NOT FILED UP, BEING MEANT FOR DESPATCH
IN ORIGINAL (not paged).

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ORDINARY, MS.

Mar DEPARTMENT.

G.O., DATED 10-10-95
No. 300

INDEXED.

When given for copying. 12/10

[Despatch Abstract.]

Comm. to the P. P. Co
+ to Mr. Welch, letter
from the S. of I forward-
ing copies of correspond-
ence between that Govt.
& the Surveyor. Genl. of
India regarding the
establishment of a
tidal observatory at
Mangalore.

T 16/10

BACK PAPER, No.

Mar 10 7-10-95: 294 f

FURTHER PAPER, No.

839
Mar 16 6-11-95: 317

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No. 2745

146-3

FROM

F. G. SLY, ESQ., C.S.,
Under-Secretary to the Government of India,

TO

The Surveyor-General of India.

Simla , the 24th September 1895.

Department of Revenue and
Agriculture.
(Land-Surveys)

SIR,

In continuation of the letter from this
Department No. 2484 dated 28th August 1895, sanction-
ing the programme of operations of No. 25 (Tidal and
Levelling) party for the years 1895-96 and 1896-97,
I am directed to forward an Extract from a letter
from the Government of Madras, recommending that regu-
lar tide tables should be prepared for Mangalore.
This is one of the stations mentioned in the programme
and I am to ask that early steps may be taken for the
examination of Mangalore to ascertain whether it is
suitable for the establishment of an observatory. A
report should then be forwarded on its relative im-
portance compared with the other stations for which
tidal observatories have been proposed.

I have &c,
Sd. F. G. Sly,
Under-Secretary.

(True copy)

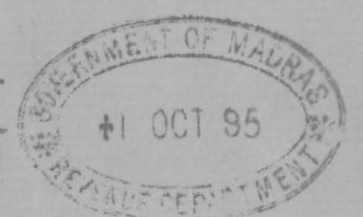
Archer

Registrar, Department of Revenue and Agriculture.

P.C.M.

Mar

No. 2743
146-2



FROM

F. G. SLY, Esq., C.S.,
Under-Secretary to the Government of India,

To

The Chief Secretary to the Government of Madras.

Department of Revenue and
Agriculture.

(Land-Surveys)

Simla, the 24th September 1895.

SIR,

With reference to the recommendation made in paragraph 4 of your letter No. 160 dated 5th June 1895, for the preparation of regular tide tables for Mangalore, I am directed to say that that Port is men-

Incorporated
in survey of
the harbour.

Endorsement
No. 18
58-12
dated 28th
Augt: 1895.

tioned in the programme of tidal observations for the years 1895-96 and 1896-97, a copy of which has been separately communicated to the Government of Madras.

2. I am also to forward a copy of a letter in which the Surveyor-General of India has now been asked to take early steps for the examination of Mangalore to ascertain whether it is suitable for the establishment of an observatory and also to report on its relative importance compared with other stations for which tidal observatories have been proposed in the programme referred to above.

I have the honour to be,

Sir,

Your most obedient servant,

F. G. SLY.

Under-Secretary.

1895
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Marine Dept

From

The Govt of India,
Rev: + agri dept

No. 2743
146-2

Dated 24th Sept 95

Recd: 1/10

Ref: 2/10

encl: one

Subject

Re tide tables for Mangalore

No. 271-S.S., dated Simla, the 21st June 1895.

From—COLONEL C. STRAHAN, R.E., Surveyor-General of India,

To—The Secretary to the Government of India, Department of Revenue and Agriculture.

File No. 120 of
1895.

Serial No. 1.

The proposed programme of operations for 1895-96 of No. 25 (Tidal and Levelling) Party is as follows:—

(a) Tidal observations will be continued at the undermentioned permanent and temporary stations, viz:—

Permanent Stations.

- | | |
|----------------------------|---------------------------|
| 1. Aden. | 5. Kidderpore (Calcutta). |
| 2. Karachi. | 6. Rangoon. |
| 3. Apollo Bandar (Bombay). | 7. Port Blair. |
| 4. Madras. | |

Temporary Stations.

- | | |
|-----------------------------|--------------------|
| 1. Maskat. | 4. Minicoy. |
| 2. Bushire. | 5. Trincomallee. |
| 3. Princess' Dock (Bombay). | 6. Diamond Island. |

The observations at the temporary stations of Minicoy and Trincomallee will be closed soon after 1st January 1896 on completion of the usual five years.

(b) That preliminary arrangements shall be made for the erection of observatories at:—

Port Albert Victor (Kathiawadar).

Perim.

Suez.

So far as the first is concerned, it is probable that the light-house, now under construction, in which the instruments are to be placed, will not be sufficiently near completion to allow of the instruments being erected there this year, but this is not certain, and hence it is desirable to enter it in the programme; I should mention that the instruments are the property of the State of Bhavnagar, and the observatory will be kept up at the expense of that State.

No. 2351, dated 9th September 1889, from Surveyor-General, to Revenue and Agricultural Department.
No. 544-S., dated 18th October 1889, from Revenue and Agricultural Department, to Surveyor-General.
No. 807-S., dated 2nd September 1890, from Revenue and Agricultural Department, to Surveyor-General.

With regard to the other two stations, I would refer you to the correspondence noted in the margin. From paragraph 5 of No. 2351, it will be seen that my predecessor, in accordance with despatch No. 25, dated 28th March 1889, from the Secretary of State, postponed

the question of establishing observatories in the Red Sea until the observations at some of the stations situated within what might be classed as Indian waters were completed and instruments were available. There are now two sets of instruments at liberty, and early next year there will be two more; I have the honour therefore to enquire whether the Government of India will now sanction the erection of observatories at Perim and Suez, according to the suggestion of Professor Darwin, a copy of whose letter on the subject was forwarded with No. 2351, dated 9th September 1889. The budget estimate for the current year will allow of the preliminary arrangements at Perim and Suez being made. I would also call attention to the other two stations, viz., Bangkok and Acheen, where it has been proposed to establish observatories. It is not

proposed, even if the sanction of Government is granted, to take any steps beyond perhaps visiting these stations this year, but with a view to communicating with the Governments concerned, it is desirable to have the question of their being included decided soon.

(c) The proposed levelling operations will commence at Raipur on the direct line between Bombay and False Point and be carried southwards to join the present season's levelling near the Vizagapatam tidal station connecting with trigonometrical stations of the Bilaspur meridional series, and forming the first instalment of the line between Vizagapatam and Allahabad, to which Colonel Hill in his Annual Report for 1893-94 drew attention as necessary to complete the general scheme of the levelling operations in India.

2. The programme for 1896-97, so far as can be foreseen at present, will be as follows:—

(a) Tidal observations will be continued at the stations enumerated in paragraph 1 (a), with the exception of Minicoy and Trincomallee, and with the addition of Port Albert Victor (if started) and of Perim and Suez, if sanction is given. It is not expected that any tidal observatories will be closed during 1896-97.

(b) If the necessary sanction is also given to establish observatories at Acheen and Bangkok, and they can be visited during the inspection season of 1895-96, observatories will also probably be started at these two places. Colonel Hill in his Annual Report for 1893-94 states that an observatory is required to the north of Bombay and another to the south near Mangalore, and that it would be advantageous to have stations on either side of the Malay Peninsula at about Latitude 10° near Victoria Point and Chumphau to compare the tides in the Gulf of Siam with those in the Bay of Bengal. If sanction for the eventual occupation of these stations be now given, the officer in charge of the party will be able to arrange to examine the localities during his inspection tour of 1895-96, so that the many necessary preliminary arrangements may be satisfactorily completed in time for the stations to receive their instruments in due course.

(c) Levelling operations will consist of the completion of the line between Vizagapatam and Allahabad which it is proposed to commence in 1895-96. It is believed that the nature of the ground is such that this will not be finished in less than two complete seasons.

No. 390-S. S., dated Simla, 15th July 1895.

File No. 58 of 1895.

From—COLONEL C. STRAHAN, R.E., Surveyor-General of India,

To—The Secretary to the Government of India, Department of Revenue and Agri-Serial No. 8.

I have the honour to submit, for the sanction of the Government of India, the programme of operations of the Survey Department for the seasons 1895-96 and 1896-97, so far as it can be made out at present. It has been drawn up in a condensed tabular form for ready reference, and it is desirable to supplement this by the addition of certain remarks and explanations regarding some of the parties.

2. The surveys in the Puri, Cuttack and Balasore districts, as well as other North-Western Provinces Traverse detached surveys in Bengal, having been completed,* and there being no more work at present in that Province for Nos. 2 and 8 Parties, it has been decided to transfer them elsewhere. Although the final orders of Government have not yet been received on this subject, I believe it is intended that they shall be employed on the traverse surveys in the North-West Provinces as I have shown in the statement. I have been informed that their programme will consist of the completion of the work already commenced by a detachment in the Meerut and Bahraich districts and the commencement of that in the districts of Bareilly, Azamgarh, Shahjehanpore and Kheri. These details are liable to alteration, as the programme has not been finally approved of by the North-West Provinces Government. The main fact, however, remains that these two parties will be transferred to the North-West Provinces.

3. The programme of work for Nos. 4 and 5 Parties in Bengal has been made out by the Director of Bengal Surveys and approved of by the Local Government, and no special remarks need be made on it.

4. The cadastral operations in Burma have for the last four years been carried on by three parties—two in Upper Burma and one in Lower. In Upper Burma it has been found that the Settlement Department cannot keep pace with the survey, and it has therefore been decided to transfer one of the parties, No. 12, to India, leaving No. 3 to continue the work in Upper and No. 7 that in Lower Burma.

5. There is enough work to employ this party this year, but the cadastral survey of Cachar will then be finished, and the question will arise next year as to what work is to be allowed to it. It has been ascertained that there is no more cadastral work for it in Assam, unless the permanently-settled tracts in Sylhet are taken up; so if it is to be kept in Assam, it will have to be employed on topographical work. The gaps left between the cadastrally-surveyed areas, more especially the course of the Brahmaputra, which has much altered since it was surveyed, might be filled in, or new topographical maps of Sylhet might be made, if there is no chance of cadastral surveys there, as the maps there are very old and in many cases the changes have been so great that it is impossible to trace the rivers up which the steamers now run; or again there is plenty of work in the Lushai Hills. The cost of such surveys would necessarily be an Imperial charge.

6. It was believed when the programme for 1894-95 was made out that there would be hardly sufficient work for this party for one season, even after being somewhat reduced in strength; it was therefore decided to transfer it in October next. It appears now however that the Commissioner of Settlements has asked for the traverse of nearly as many more zamindari villages as were surveyed by this party last season, and in addition there will be an area of about 200 square miles of lands excised from forest reserves. The programme of this party depends, therefore, on whether the

Chief Commissioner applies for the retention of this party for yet another year, and whether the Government of India will sanction it. Should the Chief Commissioner apply for it, I would venture to suggest its being allowed, as in the event of No. 12 being made into a topographical party, it would be desirable to avoid having to start two entirely new topographical parties this year. In consequence of the great reduction in topographical work that has taken place of late years, the Department now is very weak in experienced topographical surveyors, both European and Native; and as it takes sometimes two years or more to turn out a good plane table, it will be a matter of some difficulty to start two new parties at once. At the same time I consider it a matter of great importance that this branch should again be increased, so that an opportunity may be given of replacing those trained surveyors who have retired or died and have not been replaced by young hands for want of topographical work to train them in. It is very difficult to train men in the frontier surveys either in the North-West or North-East, and the officers in charge of those parties are all asking to be reinforced with trained men, but there are none to send them. The topographical branch has been allowed to run down to a most serious extent, and it is a matter that urgently requires attention. Whilst advocating the increase to the topographical branch for the purpose of training and keeping up a proper supply of experienced topographical surveyors, I do not wish it to be supposed that that is my only reason for recommending such a step. My predecessor, in a note dated 24th May 1894, pointed out the enormous areas which yet remain to be surveyed topographically; the grand total at that time amounted to upwards of 500,000 square miles, of which about one-third had never been properly surveyed at all, and the remainder had been only reconnoitred, or at least only roughly surveyed. In Madras there are 18,000 and in Rajputana 18,000 square miles which are unsurveyed; and in Hyderabad there are 80,000 and in Sind 28,000 square miles of very inferior survey not more than a reconnaissance. It will be seen therefore that there is ample work of an important nature for topographical parties when they can be started.

F. 46, 1895.
S. 2.

F. 153 of 1894.

7. This party has already been alluded to under the head of Burma Cadas-tral Surveys as being under orders for transfer. I recommend that this party should be reconstituted and sent to take up the topographical survey of either Sind or Madras, whichever is considered the more important. In the event of No. 9 being also made into a topographical party, both these Provinces can be taken up.

Central Provinces Forest Survey,
No. 14 Party.
Bombay Forest Survey, No. 17 Party.
Madras Forest Survey, No. 18 Party.
Burma Forest Survey, No. 20 Party.
Himalayas Topographical Survey,
No. 18 Party.
Burma Topographical Survey, Nos.
11 and 21.

8. The programmes of all these parties are made out in consultation with the Local Governments or the Forest Department and do not call for any special remark.

9. These two parties will be engaged in completing the determination of the difference of longitude between Greenwich and Karachi, which is now in progress. In last year's programme it was stated that both the work and the cost would be divided over two years. It is probable that the field work will be completed by November or December 1895 and the parties will subsequently be employed in the reduction of the observations—a work of considerable magnitude.

F. 153 of 1894.
S. 2.

10. The series connecting Assam with Burma having been nearly completed, it will be sufficient if one of the officers and half the establishment now attached to this party be left to finish it, whilst the other commences a series through Mekran. A really reliable series on which to base the topographical work, which is so rapidly extending to the west of India has long been a desideratum, but for many reasons it has not hitherto been possible to carry it out. I now propose that the senior officer

F. 153 of 1894.
S. 2.

with the other half of the establishment of No. 24 be directed to commence a principal series along the Mekran Coast starting from the Great Indus series near Karachi. There is every reason to believe that this division of the party into two sections will not cause any extra expense; the amount that is already estimated for the whole party working between Assam and Burma should suffice for it when divided into the two sections proposed; it is not possible to accurately estimate the contingent charges for work in a new country, but it is not improbable that they will be less in Mekran than they are in Burma.

F. 120 of 1895.
S. 8.

11. A letter has already been addressed to you entering, in detail, into the Tidal and Levelling Operations, No. 25 Party. proposed programme for this party, and it is therefore unnecessary to enter into the subject again in this letter.

Enclosure of letter from Surveyor-General of India, No. $\frac{590-F.}{S.}$, dated 15th July 1895. File No. 58. Serial No. 8.

PROPOSED PROGRAMME OF SURVEY OPERATIONS

FOR

1895-96 and 1896-97.

PROPOSED PROGRAMME OF SURVEY OPERATIONS

1895-96 and 1896-97

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Number and name of Party.	Programme for 1895-96.	Programme for 1896-97.
	<i>Revenue Surveys.</i>	
No. 1	Disbanded.	
No. 2, North-Western Provinces... (Traverse.) Transferred from Bengal. The detachment now working in Meerut and Bahraich will be absorbed into this party.	Completion of traverse in Meerut and Bahraich and commencement of traverse in Bareilly and Azamgarh.	Continuation of traverse surveys in North-West Provinces.
No. 3, Upper Burma (Cadastral.)	Continuation of the traverse and cadastral surveys in the districts of Katha, Upper Chindwin and the commencement of the cadastral survey of Myingyan, where traverse surveys have already been commenced.	Continuation of the cadastral surveys in the district of Myingyan and the completion of those in Upper Chindwin.
Nos. 4 and 5, Behar (Cadastral.)	Completion of the traverse survey in Singbhum. Continuation of traverse and cadastral surveys in Sarun, Champaran, and the commencement of traverse surveys in Darbhanga. Completion of cadastral survey in Mozufferpore.	Completion of traverse survey in Sarun, Champaran, Darbhanga and probable extension of traverse surveys into South Behar. Completion of cadastral survey in Champaran. Continuation of cadastral survey in Sarun.
Detachment Orissa	Revision of the maps and records of Khurda.	
No. 6, Assam ... (Cadastral.)	Completion of the cadastral survey of Cachar. It has also been suggested that a traverse survey of certain detached areas in Goalpara shall be done by this party, but this is still under consideration.	Under consideration. There will be no more cadastral or traverse work for the party in Assam.
No. 7, Shwegyin ... (Cadastral.)	Continuation of the cadastral survey of Shwegyin and a large scale survey of Rangoon town, partly on the scale of 50 feet = 1 inch and partly on 100 feet = 1 inch, which has been sanctioned by Government of India. The cost of survey proper will be defrayed from the Municipal and Port Trust Funds.	Completion of the cadastral survey of Shwegyin and the large scale survey of Rangoon and the commencement of the traverse survey in Toungoo.
No. 8, North-West Provinces (Traverse) Transferred from Bengal.	Traverse surveys in Shahjehanpur and Kheri.	Continuation of traverse surveys in North-West Provinces.
No. 9, Central Provinces (Traverse.) Under orders for transfer.	This party has been employed on traverse surveys in the Central Provinces, but is under orders for transfer; its destination and constitution are still under consideration. Information has, however, just been received that there is nearly, if not quite work enough to employ it for yet another season in the Central Provinces, though no official intimation has been given that the Chief Commissioner intends to ask for its retention.	Not known.
	<i>TOPOGRAPHICAL AND FOREST SURVEYS.</i>	
No. 10, Bombay ... (Topographical.)	Completion of the small remaining area (2,000 square miles) in sheets 349, 350 and 351 in Bijapur, and perhaps the large scale plan of the Secunderabad cantonments.	Not known.

Number and name of Party.	Programme for 1895-96.	Programme for 1896-97.
No. 11, Upper Burma (Topographical.)	Continuation of 1-inch surveys in sheets 360 and 361 and triangulation in Shan States.	Continuation of 1-inch surveys in Upper Burma.
No. 12, Magwe ... (Topographical.) Under orders for transfer.	This party has been employed in the traverse and cadastral surveys in the districts of Minbu and Magwe, Upper Burma, but is under orders for transfer to India. It has been proposed to reconstitute it as a topographical party to be employed in Sind, a resurvey of which is highly desirable.	Not known.
No. 13	Disbanded.	
No. 14, Central Provinces (Topographical Forests.)	Continuation of 4-inch topographical survey of 300 square miles in <i>Betul</i> , completing that district and of 400 square miles in <i>Damoh</i> . Triangulation of 500 square miles in <i>Damoh</i> and about 300 in some other district not yet named.	Continuation of 4-inch topographical surveys of forest areas in Central Provinces. Districts not yet assigned.
No. 15, Baluchistan (Topographical.)	The continuation of the survey along the Baluch-Afghan boundary, of the 6-inch survey around Mooltan, the extension of the survey in the Zhob Valley, the continuation of the triangulation required to connect the survey near Bandar Abbas and the Indian system and, if possible, the filling in of the gaps of 1/2-inch survey in the Mingal country, in the Bhitanni country and along the Gomal between Toi Khula and Damandi. The above programme has been approved of by the Military authorities.	Continuation of frontier surveys.
No. 16	Disbanded.	
<i>Northern Circle.</i>		
No. 17, Bombay ... (Topographical Forests.)	Detail survey on 8-inch scale of the Thana forests in talukas <i>Wada</i> and <i>Mabner</i> and triangulation in <i>Daham</i> taluka.	Continuation of surveys of forest areas in Bombay.
<i>Central Circle.</i>		
	Detail survey on 8-inch and 4-inch scales in talukas <i>Purandhur</i> , <i>Sikur</i> , <i>Bhinhadi</i> and <i>Indapur</i> , completing the forest areas in the <i>Poona</i> District. Detail survey on 16-inch scale of babul reserves in <i>Poona</i> and <i>Ahmednagar</i> . The triangulation of teak areas in <i>Akola</i> .	
<i>Southern Circle.</i>		
	Detail survey on 4-inch scale of about 600 square miles and continuation of triangulation in North Kanara.	
No. 18, Himalaya ... (Topographical.)	Continuation of the 2-inch topographical surveys in the Native States of <i>Mandi</i> and <i>Suket</i> . Continuation of the 4-inch topographical surveys in the high parts of <i>Kullu</i> and in <i>Kangra</i> . Also the continuation of the special Forest surveys asked for by the <i>Patiala</i> and <i>Sirmur</i> States. The former will probably be completed.	Continuation of the 2-inch and 4-inch topographical surveys in the <i>Simla</i> States.

Number and name of Party.	Programme for 1895-96.	Programme for 1896-97.
No. 19, Madras ... (Topographical Forests.)	Completion of the topography of the <i>North Arcot</i> District and the continuation of that of the <i>Salem</i> District.	Completion of topography of <i>Salem</i> and commencement of the <i>Nullamalai</i> Hills in <i>Kurnool</i> .
No. 20, Burma ... (Topographical Forests.)	Continuation of the 4-inch and 2-inch topographical surveys of forest areas in <i>Toungoo</i> and <i>Tharrawaddy</i> .	Continuation of the surveys of the forest areas in <i>Toungoo</i> .
No. 21, Upper Burma (Topographical.)	Continuation of the 1-inch topographical surveys of the Northern Shan States, especially of <i>Hsipaw</i> . The completion of the survey of the Burma-Siam boundary in the <i>Tenas-serim</i> Division.	Continuation of the 1-inch topographical surveys of the <i>Northern Shan</i> States.
<i>Geodetic and Trigonometrical Surveys.</i>		
Nos. 22 and 23, Asia and Europe. (Astronomical.)	Completion of the difference of longitude between <i>Greenwich</i> and <i>Karachi</i> .	Cannot be decided at present.
No. 24, Upper Burma (Triangulation.)	Completion of the Burma-Assam series of triangles and the commencement of the <i>Mekran</i> series.	Continuation of the <i>Mekran</i> series.
No. 25, India ... (Tidal and levelling.)	Tidal observations will be continued at the following stations: <i>Aden</i> , <i>Maskat</i> , <i>Bushire</i> , <i>Karachi</i> , <i>Apollo Bandar</i> (<i>Bombay</i>), <i>Prince's Dock</i> (<i>Bombay</i>), <i>Minicoy</i> , <i>Trincomallee</i> , <i>Madras</i> , <i>Kidderpore</i> , <i>Diamond Island</i> , <i>Rangoon</i> and <i>Port Blair</i> . It is also proposed that preliminary arrangements shall be made for the erection of observatories at <i>Port Albert</i> , <i>Victor</i> , <i>Perim</i> and <i>Suez</i> .	The observations at the same stations will be carried on except at <i>Minicoy</i> and <i>Trincomallee</i> , where the observatories will be closed; and, if sanction is given, observations will be commenced at <i>Perim</i> and <i>Suez</i> . The observations at <i>Port Albert</i> Aictor will also no doubt be started.
	Levelling operations to commence at <i>Raipur</i> and be carried southwards to join the <i>Vizagapatam</i> tidal stations, connecting with trigonometrical stations of the <i>Bilaspur</i> meridional series.	The completion of the line of levels between <i>Vizagapatam</i> and <i>Allahabad</i> through <i>Raipur</i> .

SURVEYOR-GENERAL'S OFFICE,

Simla, 15th July 1895.

CHAS. STRAHAN, Colonel, R.E.,

Surveyor-General of India.

1895.

File No. 120 of
1895.

GOVERNMENT OF INDIA.

Serial No. 2.

DEPARTMENT OF REVENUE AND AGRICULTURE.

LAND SURVEYS.

To

THE SURVEYOR GENERAL OF INDIA.

No. $\frac{2484}{120-2}$.

Dated Simla, 28th August 1895.

SUBJECT.

Programme of tidal and levelling operations for the two seasons, 1895-96 and 1896-97.

Proposed establishment of new tidal observatories at Port Albert Victor, Perim, Suez, Bangkok, Acheen, one to the north of Bombay, another near Mangalore, and at two stations on either side of the Malay Peninsula.

G. C. Press, Simla.—No. 641 R. & A. D.—30-8-95.—570.

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No. $\frac{2484}{120-2}$.

FROM

DENZIL IBBETSON, Esq., C.S.,

Offg. Secretary to the Government of India,

TO

THE SURVEYOR GENERAL OF INDIA.

Dept. of Rev. & Agri.
Land Surveys.

Simla, 28th August 1895.

SIR,

F. 120 of 1895. S. 1.

I AM directed to acknowledge the receipt of your letter No. 271-S.-S., dated 21st June 1895, containing the programme of tidal and levelling operations suggested by you for the two seasons of 1895-96 and 1896-97; and in reply to say that the proposals for both years, so far as levelling operations are concerned and the programme of tidal operations for the permanent and temporary stations mentioned in paragraph 1, clause (a) of your letter, are approved.

2. The further proposals regarding tidal observations on which orders are required are as follow:—

(a) That preliminary arrangements should be made in the year 1895-96 for the erection of observatories and for the commencement of work in 1896-97 at Port Albert Victor, Perim and Suez; but that the observatory should be set up at the first of these three stations in the year 1895-96 if the light-house now being constructed is completed in time; and

(b) That enquiries should be made with a view to establishing observatories in 1896-97 at Bangkok and Acheen, as well as at a station to the north of Bombay, and at another to the south near Mangalore; and also at two stations on either side of the Malay Peninsula at about Latitude 10° .

3. With regard to these proposals I am to say that the Government of India approve of your suggestion that Port Albert Victor should be entered provisionally in the programme for 1895-96, and they also sanction the establishment of an observatory at Perim. As regards Suez, Her Majesty's Secretary of State for India will be addressed with a view to arranging with the Egyptian Government for providing the necessary building and clerk, on the understanding that the

Government of India will supply the instruments required, and take the necessary measures for the inspection of the observatory.

The Secretary of State will also be asked to move the Foreign Office to communicate with the Governments of Siam and the Netherlands with a view to ascertaining whether they will establish observatories at Bangkok and Acheen and communicate the results to this Government or to Mr. Roberts, who prepares the Indian Tide Tables. It is not, however, proposed that these observatories should be inspected by an officer from India.

4. The Government of India have no objection to your proposals for the examination of the Malay Peninsula with a view to the eventual establishment of a station on either side. Victoria Point is a subdivisional station of Mergui, and it is probable that a site for the station opposite can be found on the other side in one of the Protected Malay States (without going to Siam territory) by arrangement with the Straits Settlements Government.

Enquiry may also be made as proposed regarding the suggested stations north of Bombay and near Mangalore.

I have the honour to be,

SIR,

Your most obedient Servant,

DENZIL IBBETSON,

Offg. Secretary to the Government of India.

1895.

GOVERNMENT OF INDIA.

DEPARTMENT OF REVENUE AND AGRICULTURE.

LAND SURVEYS.

To

THE SURVEYOR-GENERAL OF INDIA.

No. $\frac{2482}{58-12}$

Dated Simla, the 28th August 1895.

SUBJECT.

Programme of operations of the field parties of the Survey of India Department for 1895-96 and 1896-97.

G. C. Press, Simla.—No. 624 R. & A. D.—31-8-95.—542.

No. $\frac{2482}{58-12}$.

FROM
DENZIL IBBETSON, Esq., C.S.,
Officiating Secretary to the Government of India,

To
THE SURVEYOR-GENERAL OF INDIA.

Dept. of Rev. & Agri.
Land Surveys.

Simla, the 28th August 1895.

SIR,

I AM directed to acknowledge the receipt of your letter No. 390-S.-S., dated 15th July 1895, and in reply to say that, subject to the following remarks, the Government of India are pleased to sanction the programme of operations for the several field parties of the Survey of India Department, as proposed by you, for the field season of 1895-96. Orders on the programme for the year 1896-97 will be issued hereafter.

2. Nos. 2 and 8 parties may be transferred from Bengal to the North-Western Provinces and Oudh for employment on the traverse survey of districts which will shortly come under revision of settlement. A copy of a letter from the Local Government on the subject is forwarded for your information.

No. 1527, dated 11th June 1895.

3. The accompanying copy of a correspondence with the Government of Madras shows that a party is required in that Presidency for the survey of forest reserves. The Government of India will have no objection to the transfer of No. 9 party from the Central Provinces to Madras when it can be spared. In his letter No. 3529, dated 10th instant, the Chief Commissioner of the Central Provinces has asked for the further retention of this party for traverse work during the field season of 1895-96, and the Government of India have sanctioned his request.

To the Government of Madras, No. $\frac{1530}{58-4}$, dated 29th May 1895.
From the Government of Madras, No. 447, dated 13th May 1895.

4. No. 12 party may be transferred from Upper Burma to the Bombay Presidency to undertake the topographical survey of Sindh and to complete the

extended survey of the Indus delta, as suggested by the Government of India in their letter No. $\frac{698}{46-1}$, dated 5th March 1895, and accepted by the Local Government in letter No. 5331, dated 13th July 1895, a copy of which letter, with enclosures, and also of the reply* of the Government of India, is enclosed. The cost of this survey will be an Imperial charge. I am to ask whether the party will be required in Sindh and the Indus delta in the field season of 1896-97 as well as in that of 1895-96.

*No. $\frac{2460}{46}$, dated 24th August 1895.

I have the honour to be,

SIR,

Your most obedient servant,

DENZIL IBBETSON,

Officiating Secretary to the Government of India.

Circular No. $\frac{18}{58-12}$.

*† From Surveyor-General of India, No. $\frac{271-S}{S}$, dated 21st June 1895.

From Surveyor-General of India, No. $\frac{390-S}{S}$, dated 15th July 1895, and enclosure.

To Surveyor-General of India, No. $\frac{2484}{120-2}$, dated 28th August 1895.

‡ Government of Madras.
" " Bombay.
" " Bengal.
" " North-Western Provinces and Oudh.
" " Punjab.
Chief Commissioner, Central Provinces.
" " Burma.
" " Assam.
The Foreign Department.
" Military Department.
" Public Works Department.
" Inspector General of Forests.

COPY, with a copy of the letters marginally† noted, forwarded to Local‡ Governments and to the Departments of the Government of India, for information.

By order,

F. G. SLY,

Under-Secretary to the Government of India.

LIST OF ENCLOSURES TO SURVEYOR-GENERAL.

From the Government of the North-Western Provinces and Oudh, No. 1527, dated 11th June 1895.

To the Government of Madras, No. $\frac{1550}{58-4}$, dated 29th May 1895.

From the Government of Madras, No. 447, dated 13th July 1895.

To the Government of Bombay, No. 698-46-1, dated 5th March 1895.

From the Government of Bombay, No. 5331, dated 13th July 1895, and enclosures (map in original).

To the Government of Bombay No. $\frac{2460}{46-3}$, dated 24th August 1895.

From Chief Commissioner, Central Provinces, No. 3529, dated 10th August 1895.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

4 copy attached

Read Indorsement of the Government

of India, Department of Revenue and Agriculture, dated
28th August 1895, no $\frac{18}{58-12}$ forwarding to Local Governments
and to the Departments of the Government of India
for information a copy of the letter addressed to the
Surveyor-General of India, dated 28th August 1895 no $\frac{2482}{58-12}$

Order thereon, dated 17th September 1895, no 3775 Mis

communicated to the Board of Revenue
and to the Superintendent, Madras Survey.

(True Extract)

W. B. L. J. /
Ag. Asst. Secretary to Government.

To

The Board of Revenue, Land Revenue

" Marine Department v

" Superintendent, Madras Survey

Copy to the Political Department.

5

4

797

797
Govt. of {1895} Madras.
REVENUE.

To
The Marine Department

Dated

Recd.

Encl. 4



Mis. G.O., 17th September 1895, No. 3775

SUBJECT.

Coming to the Board &
to the Supdt. Madras survey, letter
from the Govt. of India regarding
programme of operations of the
field parties of the Survey of India
Dept for 1895-96 and 1896-97.

Marine Currents 778 & 797

Order of 10th Oct 1895 No. 300.

Communicated to the
Presidency Post Office
and to Mr. Walch.

with ref. to G.O. No.
159 Mar d/ 5 June '95.
c.w.
8.10.95

J.D.B.
8/10/5

28
9/10/95

To
The P. P. O. with (P.O.)
G. T. Walch Esq. } Despatch
with (P.O.) } 28/10

Tide Tables - Mangalore

[R. O.]
10

5,000-21-7-09.

MADRAS RECORD OFFICE.

Block No. II

Paper taken out of the Records from the charge of the Referencer,

Dept. Marine

Press
Mis.
Rout.

No. 300

, dated 10-10

1995

Back No.
Range.

Date taken out.	FOR WHAT PURPOSE.			Initials of Referencer.	Date returned.	Initials of attender.
	Department.	C. No.	Year.			
2/6/10	Marine	577	10	<i>[Signature]</i>	6-7-10	<i>[Signature]</i>
18-5-15	Marine	1052	15	<i>[Signature]</i>	25-6-15	<i>[Signature]</i>

