Public Works (189) D

G.O., No. 869
870.

Dated 16 October

[Despatch Abstract.]

Flood warning Stations -

approving the proposal of the Chief Engineer for Irrigation to abandon for the present the idea of establishing — on the Godavari, and desiring that a copy of these Nos be forwarded to the Govt of

Flood warning Stations -

Forwarding copy of Nos: approving proposal of the Chief Engr for Irrig for the present the idea of establishing on the Godavari —

[P. W. 16. 200—19-7-99.]

100/5

BACK PAPERS.

No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

No.	Department.	Date.	G.O.	No.	Department.	Date.

IRRIGATION.

Government {1899} of Madras.

PUBLIC WORKS.

Recd. } 1899. *Enclosures*

Regd. *Spare copies*

G.O., Nos. 869, 870 I., 16th October 1899.

OCTOBER.

Flood Warning Stations

Forwarding copy of proceedings approving the proposal of the Chief Engineer for Irrigation to abandon for the present the idea of establishing — on the Gódávari.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers :—

From O. C. LEES, Esq., Under Secretary to the Government of India, Public Works Department (Civil Works—Irrigation), to the Joint Secretary to the Government of Madras, Public Works Department, Irrigation Branch, dated Simla, 14th June 1899, No. 574 C.W.I.

I am directed to acknowledge the receipt of the Proceedings of the Government of Madras, No. 247 I., dated the 14th March 1899, approving the recommendation of the Chief Engineer for Irrigation for improving the system of flood warnings as regards the Gódávari river, and requesting that the Meteorological Department of the Government of India may be asked to take the necessary steps for giving effect to the arrangements proposed in paragraph 5 of the note by the Chief Engineer.

2. In reply, I am to say that the Government of India approve of the proposal to establish river gauge (or flood warning) stations on the Gódávari to furnish the earliest possible telegraphic information of the approach of floods likely to affect the weir or dam at Dowlaishweram.

Similar arrangements are already in force on several rivers in Northern India and also on the Tungabhadra and Kistna, and in all these cases the river gauge stations have been selected, established and maintained by the officers of the Public Works Department, and the data in each case are telegraphed direct to the head-quarters of the officer for the protection of whose works the river gauge stations are maintained.

As these arrangements have been found to work satisfactorily in Northern India and on the Kistna, I am to suggest that the same methods and arrangements should be adopted in the case of the Gódávari river.

3. The Government of India cannot approve or sanction any proposal for the transfer of this branch of flood warning work from the officers of the Public Works Department to the Meteorological Department, as there is at present no staff in that office to carry out the work.

4. I am to enclose for the information of the Government of Madras a copy of a note by Mr. Dallas, dated 2nd May 1899, giving the results of an examination of the rainfall in the Central Provinces and Berar in connection with the floods on the Gódávari in July and August 1896. While the rainfall at all the ten stations mentioned by Mr. Dallas will affect the gauge readings at Sironcha, it is evident that the floods at

Dowlaishweram depend also on the rainfall over the eastern catchment drained by the Indravathi, Saveri and Saleri, and also probably on that over the western area drained which falls in at Sironcha. Useful information as to floods and rainfall on this western branch might possibly be obtained by the establishment of a gauge at the new bridge on the railway line now under construction which crosses the Gódávari between Indore and Bolapur, information of gauge readings being wired from Bolapur, 7 miles from the bridge. A gauge at Sironcha and another lower down below the junction of the Indravathi would no doubt be useful as they would permit the flood readings at those points being correlated with the records of rainfall received from the stations on the catchment areas above, but until these stations can be connected with the telegraph system, the gauge readings will be of little value for the purpose of flood warnings.

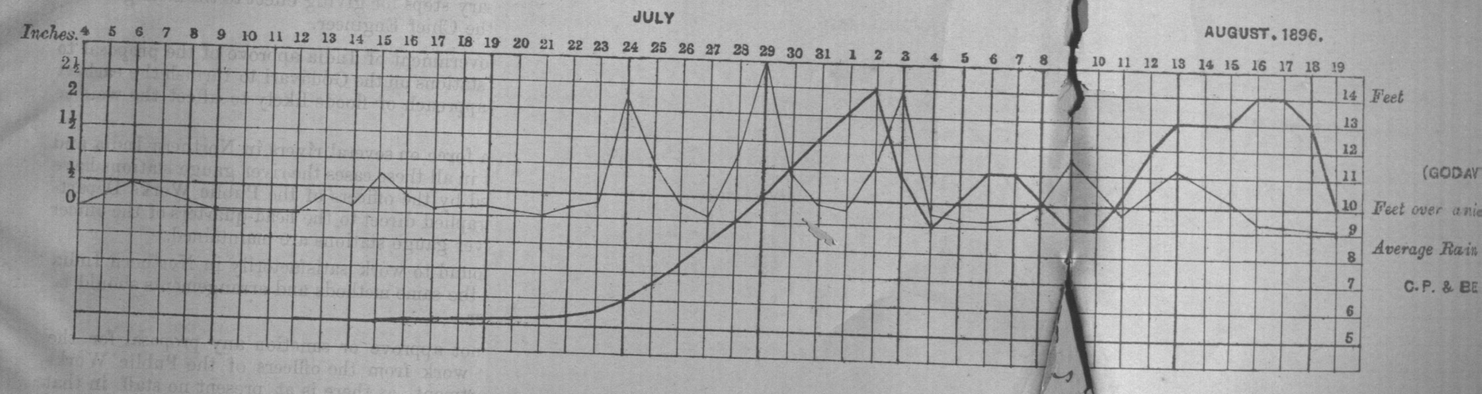
5. It is understood that useful warnings were received at Dowlaishweram from the Deputy Commissioner, Bhandara, when the river Weinganga began to rise, and arrangements might be made by the canal officers for obtaining similar warnings from the local authorities of heavy rainfall, or of rises in the river, at other points in the catchment area of the Gódávari which are connected with the telegraph system, and for collating the information thus received with the records at the gauge stations that may be established lower down the river.

ENCLOSURE.

NOTE on the Gódávari Floods, July and August 1896, by Assistant Meteorological Reporter to the Government of India, dated 2nd May 1899.

I have examined at the request of the Meteorological Reporter to the Government of India the rainfall of the Central Provinces and Berar in connection with the floods on the Gódávari in July and August 1896. The investigation shows that during the period July 4th to August 20th four storms gave heavy rain to the Central Provinces and Berar, viz., 25th and 29th July and the 3rd and 9th of August. The accom-

* The districts from which these values were obtained were Chanda, Bhandara, Balaghat, Seoni, Wardha, Nagpur, Chhendwara, Amroati, Ellichpur, and Akola.



ings which were to be informed of depressions crossing the north-east coast of the Bay during the months of July, August and September. This information, the present Chief Engineer considers too indefinite to permit of definite action to be taken. The only action which the Meteorological Department can take is to continue to give warning of the approach of storms likely to give heavy rain to the catchment area, leaving it to the Madras authorities to determine which branch or branches of the river exercises the greatest influence by placing gauges in appropriate places above and below some of the principal junctions.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

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From O. C. LEES, Esq., Under Secretary to the Government of India, Public Works Department (Civil Works—Irrigation), to the Joint Secretary to the Government of Madras, Public Works Department, Irrigation Branch, dated Simla, 14th June 1899, No. 574 C.W.I.

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4. I am to enclose for the information of the Government of Madras a copy of a note by Mr. Dallas, dated 2nd May 1899, giving the results of an examination of the rainfall in the Central Provinces and Berar in connection with the floods on the Gódávari in July and August 1896. While the rainfall at all the ten stations mentioned by Mr. Dallas will affect the gauge readings at Sironcha, it is evident that the floods at

Dowlaishweram depend also on the rainfall over the eastern catchment drained by the Indravathi, Saveri and Saleri, and also probably on that over the western area drained which falls in at Sironcha. Useful information as to floods and rainfall on this western branch might possibly be obtained by the establishment of a gauge at the new bridge on the railway line now under construction which crosses the Gódávari between Indore and Bolapur, information of gauge readings being wired from Bolapur, 7 miles from the bridge. A gauge at Sironcha and another lower down below the junction of the Indravathi would no doubt be useful as they would permit the flood readings at those points being correlated with the records of rainfall received from the stations on the catchment areas above, but until these stations can be connected with the telegraph system, the gauge readings will be of little value for the purpose of flood warnings.

5. It is understood that useful warnings were received at Dowlaishweram from the Deputy Commissioner, Bhandara, when the river Weinganga began to rise, and arrangements might be made by the canal officers for obtaining similar warnings from the local authorities of heavy rainfall, or of rises in the river, at other points in the catchment area of the Gódávari which are connected with the telegraph system, and for collating the information thus received with the records at the gauge stations that may be established lower down the river.

ENCLOSURE.

NOTE on the Gódávari Floods, July and August 1896, by Assistant Meteorological Reporter to the Government of India, dated 2nd May 1899.

I have examined at the request of the Meteorological Reporter to the Government of India the rainfall of the Central Provinces and Berar in connection with the floods on the Gódávari in July and August 1896. The investigation shows that during the period July 4th to August 20th four storms gave heavy rain to the Central Provinces and Berar, viz., 25th and 29th July and the 3rd and 9th of August. The accompanying diagram gives the *daily average rainfall* for the Central Provinces * and Berar and the height in feet of the water over the anicut.

* The districts from which these values were obtained were Chanda, Bhandara, Balaghat, Seoni, Wardha, Nagpur, Chhendwara, Amroati, Ellichpur, and Akola.

The most severe storm considered from the rainfall point of view was the 29th July when the average was 2·99″ and this was followed by the great flood (14 feet above the anicut) on the 2nd of August. There was further heavy rain on August 3rd when the average was 2·51″ which was followed by only a slight flood on the 6th and 7th (11 feet over the anicut). Moderate rain fell on the 9th (1·43″) and again on the 13th August (1·18″) and was followed by a tremendous flood lasting from the 12th to the 18th. Now it is important to notice that the flood on August 2nd, which succeeded the heavy rainfall of July 29th (2·99″) was much less than the flood which followed the lightish rainfall of August 9th (1·43″) and August 13th (1·18″). But while the principal rainfall on July 29th occurred in the more western districts of the Central Provinces, the principal rainfall on the two later dates occurred in the eastern districts of the Central Provinces. Hence it appears that while the Gódávari floods are due to heavy rainfall in the Central Provinces the rain which falls over the eastern districts and reaches the Gódávari by the Indravathi, Saveri and Saleri branches is the more important. Mr. W. C. Lewis says in his report, "I have come to the conclusion that rainfall in the west portion of the catchment area of the Gódávari has little effect on the floods," which bears out my investigations. Hence I think Sironcha would be little good and Chanda less as telegraphing gauge stations and that the proper place, if possible, would be somewhere past the junction of the Indravathi. The following were the dates on which warnings were sent from Simla to Dowlaishweram on this occasion:—

July 13th.	July 28th.	August 13th and 14th.
„ 23rd and 24th.	August 2nd.	„ 27th.

And they fully fulfilled the wishes of Mr. W. C. Lewis, who originated the system of warnings which were to be informed of depressions crossing the north-east coast of the bay during the months of July, August and September. This information, the present Chief Engineer considers too indefinite to permit of definite action to be taken. The only action which the Meteorological Department can take is to continue to give warning of the approach of storms likely to give heavy rain to the catchment area, leaving it to the Madras authorities to determine which branch or branches of the river exercises the greatest influence by placing gauges in appropriate places above and below some of the principal junctions.

To the Superintendent of Telegraphs, Madras Division, dated 4th July 1899, No. 171 M.
From the " " " 11th " " " 2961.
To the " " East Coast Division, dated 14th July 1899, No. 2067.
From the " " Nagpur Division " 20th " " " 189M.
" " " " 28th " " " 2401.

No. 169 I.

Note by the Chief Engineer for Irrigation.

The request made in the Proceedings of Madras Government, No. 247 I., dated 14th March 1899, to which the foregoing letter from the Government of India is a reply, was based on the suggestion of the Meteorological Reporter to the Government of India that the work of flood prediction and warning might be taken up by the Meteorological Department if certain observations were carried out continuously and systematically. The Government of India approves of the proposal to establish river gauge or flood warning stations on the Gódávari, but does not approve of the work of flood warning being undertaken by the Meteorological Department. It is suggested by the Government of India that the selection, establishment and maintenance of such stations should devolve on the officers of the Public Works Department as is already done in the case of the Kistna river and of several rivers in Northern India.

In the case of the Kistna it has been possible to establish a flood warning station within territory under the administration of the Madras Government, but in the case of the Gódávari such stations must all lie either in the Central Provinces or in Hyderabad. In the note of the Chief Engineer for Irrigation, published with Proceedings of Madras Government, No. 247 I., dated 14th March 1899, it was suggested that stations should be established at Chanda or Sironcha, both in the Central Provinces. In the note by Mr. Dallas of the Meteorological Department which accompanies the Government of India's letter, it is shown how in the year 1896 the severest flood at the Gódávari anicut followed moderate rainfall in the eastern districts of the Central Provinces, while very heavy rainfall in the western districts was followed by a flood at the Gódávari anicut much less severe. Mr. Dallas concludes that Sironcha would not be a good place for a gauge station, and Chanda still less so, and that the proper place, if possible, would be somewhere past the junction of the Indravathi with the Gódavari.

To be of any use for flood warning purposes the gauge stations must be not very far from a telegraph station and it is this requirement which renders it somewhat difficult to select suitable places on the Gódávari. The telegraph officers have been addressed and the accompanying railway map shows * all existing lines of telegraph within the Gódávari basin, the only extension at present in contemplation being one to Wun about 30 miles from Chanda. It will be observed that the only telegraph station in the eastern portion of the Gódávari basin is that at Jeypore. There is no telegraph station within about 60 miles of the junction of the Indravathi, where it is most wanted for the purpose in view, and the only other stations likely to be of service in reporting actual rises in the rivers are: Bhandara on the Weinganga, Chanda on or near the Ponganga, and Bolapur 7 miles from the new railway bridge crossing the Gódávari between Indore and Bolapur.

* In red lines.

The Government of India suggests that a gauge at Sironcha and another lower down below the junction of the Indravathi would no doubt be useful, as they would permit the flood readings at those points being correlated with the records of rainfall received from the catchment areas above, but adds that until these stations can be connected with the telegraph system the gauge readings will be of little value for the purpose of flood warnings.

Under the circumstances it is considered that the idea of establishing flood warning stations on the Gódávari must, for the present, be abandoned.

9th August 1899.

(Signed) W. HUGHES,
Chief Engineer for Irrigation.

ORDER—No. 869 I., dated 16th October 1899.

The proposal of the Chief Engineer for Irrigation to abandon for the present the idea of establishing flood warning stations on the Gódávari is approved.

2. Ordered that a copy of these proceedings be forwarded to the Government of India for information.

[Here enter No. 870 I., dated 16th October 1899.]

(True Extract.)

(Signed) W. HUGHES,
Joint Secy. to Government,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle.
" " " II "
" Revenue Department.

ENDORSEMENT—No. 870 I., dated 16th October 1899.

Forwarded.

(By order.)

(Signed) W. HUGHES,
Joint Secy. to Government,
Irrigation Branch.

Exd. T. K. Narayana Aiyangar.

Public Works (1899) Department.

CURRENT No. 7099

From The Chief Engineer for Irrig

Order

No. 169-I.

Dated 9-8-99

Received } 30-8-99

Registered

Enclosures Plans-Mk Volab
Sheets 45 4

Spare copies.

SUBJECT.

Flood warning stations
the Godavari - Note sight
for the present the abando
of the idea of establish

BACK PAPERS.

No.	Date.

FURTHER PAPERS.

No.	Date.

PUBLIC WORKS DEPARTMENT,

IRRIGATION BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the

READ the following

From Govt of India (Ext with Enclosure) No. 574 CW, dy 14.6.99

To Supt of Telegraphs, Madras Dr. No. 1711 dy 4.7.99

From do - 961 dy 11.7.99

From Supt of Telegraphs, East Coast Dr. 2067 dy 14.7.99

To Supt of Telegraphs, Nagpur Dr. 1894 dy 20.7.99

From do - 2401 dy 25.7.99

Note by the Chief Engr for I No 1694 dy 9.8.99

No: 869 Dy 16.10.99

4 Encls

DJ 98

This submitted for approval that the Note for orders may be converted into a Govt by Rs. & brought on Proc:

VCV 25/8

29/8

The proposal of the Chief Engr for Irrigation to abandon for the present the idea of establishing flood warning stations on the Godavari is approved.

2. Ordered that a copy of these Proc be forwarded to the Govt of India for

information.

Endorsement No: 870 Dg 16.10.99

Forwarded.

Issue

29/10/99

To

The Chief Engr for I. 9

Supdg Engr I 7

Do II 5

Retd Defct. 21

Nil 30

72

25/10/99

E.I. Form No. 4—200—9-4-97.

H.E.

1

Establishing flood warning stations on the Godavari.

PUBLIC WORKS DEPARTMENT,

IRRIGATION BRANCH,

READ the following:—

Letter from the Govt of India No. 574 Cw. I. dated Simla the 7th June 1899

Letter from Supdt Telegraphs & Dir. No. 2067 d. 14.7.99

Do Do to Supdt. Telegraphs Mysore Dr. No. 2401 d. 18.7.

No 169/199-8-99.

FOR ORDERS.

Issue 5P

WH

19599

Under by the Chief Engr for Irrigation

The request made in the Proceedings H.E. No 247 / 14.3.99

which the above quoted letter from the Govt of India is a reply was based on the suggestion of the Meteorological Reporter to the Govt of India that the work of flood prediction and warning might be taken up by the Meteorological Dept if certain observations were carried out continuously & systematically. The Govt of India approves of the proposal to establish river gauge or flood warning stations on the Godavari but does not approve of the work of flood warning being undertaken by the Meteorological department. It is suggested by the Govt of India that the selection, establishment, and maintenance of such

Stations should devolve on the officers of the P. Works dept. as is already done in the case of the Kistna river and of several rivers in Northern India.

In the case of the Kistna it has been possible to establish a flood warning station within Travelore under the administration of the Madras Govt. but in the case of the Godavery such stations must all lie either in the Central Provinces or in Hyderabad.

In the note of the Chief Engr for Irrigation published with P.W.D. No 247 I d. 14.3.85. it was suggested that stations should be established at Chanda or Sironcha both in the Central Provinces.

In the note by Mr. Dallas of the Meteorological dept. which accompanies the Govt of India's letter it is shown how in the year 1876 the severest flood at the Godavery anicut followed moderate rainfall in the Eastern portion of the Central Provinces

6P

while very heavy rainfall in the western districts was followed by a flood at the Godavery anicut much less severe. Mr. Dallas concludes that Sironcha would not be a good place for a gauge station and Chanda still less so and that the proper place if possible would be somewhere near the junction of the Indravati with the Godavery.

To be of any use for flood warning purposes the gauge stations must be not very far from a Telegraph station and it is this requirement which renders it somewhat difficult to select suitable places on the Godavery. ~~The accompg. map shows the places to accompanying map the places in the Godavery basin on a line of railway and at which there are Telegraph stations have been marked~~ The Telegraph officers have been addressed and the accompanying ~~Railway Telegraph~~ map shows* all existing lines of telegraph within the Godavery basin, the only extension at present in contemplation being one from to Wun about 30 miles from Chanda

* Flagged Q

* in red lines.

Wun

FOR ODRERS.

It will be observed that the only Telegraph station in the Eastern portion of the Godavery basin is that at Jeypore. Here is no telegraph station within about 60 miles of the junction of the Indravathi where it is most wanted for the purpose in view and the only other stations likely to be of service in reporting actual rises in the rivers are, Bhadrana on the Wainganga - Chanda on or near the Pangunga and Bolapur 7 miles from the new railway bridge crossing the Godavery between Indore and Bolapur -

The Govt of India suggest that a gauge at Sironcha and another lower down below the junction of the Indravati would no doubt be useful as they would permit the flood readings at those

Sir -

150 Copies has been received from the Survey Office - G.C. regarding Flood Warning Station

R.

16/10/99

points being correlated with the records of rainfall received from the catchment areas above, but adds that unless these stations can be connected with the Telegraph system the gauge readings will be of little value for the purpose of flood warnings. -

This subject for orders whether arrangements should be made for establishing gauges at Sironcha and lower down. - Presumably arrangements would have to be made with the Govt of the Central Provinces whose territory lies on the left bank of the river at these points as well as the Nizam's Govt on the right bank. -

If it be decided not to establish gauges at these points at present it is submitted for orders whether the Central Provinces should be addressed with reference to a proposed system of warnings being sent from Bhandara Chanda or some other station being a

Under the circumstances it is considered that the idea of establishing flood warning stations is the Godavari must for the present be abandoned

Ahd. A.H. 19.8.29

(½ foolscap). INDEX No. OF 189 -9

Public Works (1899) Department.

CURRENT No. 274 M

From The Supt of Telegraphs, Nagpur Divn, Jubbalpore

Order

No. 2407

Dated 28-7-99.

Received 3-8-99.

Registered

Enclosures one Telegraph map.

Spare copies.

SUBJECT.

Extension of Telegraph — State that an — to Wun is under contemplation and that no extensions to the rivers mentioned in this office Lr to him are under proposal.

SCB

Paper. DEJ

Map & CR & Strengths

RCW 3/8/99 To C.E.S. Lone

RCW attended to

3/8/99

Rl Please put up papers 5/8 Putnole 4/9.

And Company began brisc and also N.H. de Nizams Ter. with xperence warning being sent from Bolabun when de Godavery began brisc at de new railway bridge —

8/8/99

Rly 15 & 23 HE 11

BACK PAPERS.

No.	Date.
189 M	20-7-99
R 189 M	14-7-99
R 188 M T	24-7-99

FURTHER PAPERS.

No.	Date.
R 189 M	2-8-00

(½ foolscap).

GOVERNMENT TELEGRAPH DEPARTMENT.

INDEX No. OF 189 -9 ;

ABSTRACT.

PRECIS.

FROM

THE SUPERINTENDENT, Nagpur DIVISION,

To W. Hughes Esqr
Chief Engineer for irrigation

No. 2401 Dated 28th July 1899

(Place) Jubbulpore

Encs. one Recd.

CHIEF ENGINEER FOR IRRIGATION
2 = AUG. 1899
274 M

SIR,

With reference to your letter No. 189 M, dated the 20 of July 1899, I have the honour to return the Telegraph Map of India duly verified with the boundaries of this Dn marked in black ink and to state that at present an extension to Wun is under contemplation.

This place is shewn in red on the map.

2. No other extensions on the rivers mentioned are at present under proposal.

I have the honor to be,
Sir,
Your most obedient servant,

Superintendent,
Nagpur Division.

Wardha and Khamla will then [illegible] Wun

Papers
R 189 shows alterations
the map which is getting
torn

attended to

C G P—No. 874 T—10 396—50000

Public Works (1899) Department.

IRRIGATION BRANCH.

ISSUE No. 1894

To

The ~~Supt of Telegraphs~~
Nagpur Division
Jubbulpore

(Reply to letter No. , dated)

Dated 20-7-99

Despatched 24-7-99.

Enclosures * 3

* Particulars of Enclosures.

SUBJECT.

Telegraph map. Forwards copies of correspondence ~~by~~ letters with the — ~~and~~ a request to verify the map so far as it relates to his Div and to ~~map for~~ ~~and~~ if there is any prospect of the lines being extended in the near future.

E. I. Form No. 13—4,000—7-1-99

BACK PAPERS.

No.	Date.

Sent to Government with No. I.,
dated 189 .
Printed with G.O., No. I.,
dated 189 .

REMINDERS ISSUED.

No. 1, dated 189 .
" 2 "
" 3 "
" 4 "
" 5 "

KEEP-WITHS.

FURTHER PAPERS.

No.	Date.
R274 Rc	24-7-99

Note for L.
below — this letter may
then be put on with
the Telegraph
file — keep
the Railway
map

20/7/99

Copy also
Rec
21/7/99

R0189 M

To The Supt. of Telegraphs
Nagpur Divn —
Jubbulpore.

Sir,

I have the honour
to forward copies of
my letter No. 1711 M dy 4-7-99.
addressed to the Supt. of
Telegraphs Madras Divn
and of reply No. 2067
d. 14 July 1899 received
from the Supt. of Telegraphs
East Coast Divn bye the
visit to Telegraph mak
forwarded —
I have the honour to
request that you will
survey the mak so far
as it relates to your
Divn and inform me
if there is any prospect
of the lines being
extended in the near
future —

20/7/99

W.H.

Public Works (1899) Department.

CURRENT No. 259m

C&L Mining Co. Cmrs Otr 1917

From The Supt of Telegraphs East Coast Dn

Order

No. 2067

Dated 14. 7 — 99

Received } 19. 7. 99

Registered }

Enclosures 2 maps.

Spare copies.

SUBJECT.

Telegraph line along the Godavari & its tributaries — Forwards a map showing the — and states that there is no immediate prospect of the line being extended to the neighbourhood of the river mentioned in this office No 171 dt 99

Ca D.E.N.

1917

Secs 19/7/99

BACK PAPERS.

No.	Date.
2171 m	4·7·99
R 258/4 m	19·7·99

FURTHER PAPERS.

No.	Date.
R 274 m	28·7·99

(Foolscap).

GOVERNMENT TELEGRAPH DEPARTMENT.

INDEX No. OF 189 -9 .

ABSTRACT.

PRECIS.

FROM THE SUPERINTENDENT, East Coast DIVISION,

To The Chief Engineer for Irrigation Vizagapatam.

No. 2067 Dated 14th July 1899

(Place) Vizagapatam

Encs. Recd.

259 m

SIR,

With reference to your letter No. 171 m. dated the 4th of July 1899, ~~I have the honour to~~ to the address of the Superintendent of Telegraphs Madras Division which he has forwarded for me to reply to, I have the honour to send for your information a Copy of the Telegraph Map of India from which it will be seen what lines and Offices are in the neighbourhood of the Godaveri River and its tributaries.

2. The Map is Correct to date so far as the East Coast Dn. is Concerned, but this Division does not extend west of Jeypore, Duzzid, Bezwada and Cuttack; any reference to changes or extensions in the neighbourhood of Khanda and Bandara should be made to the Superintendent in Charge of the Nagpur Division, whose head-quarters are at Jubbulpore.

3. So far as the East Coast Division is Concerned, there is no immediate prospect.

O G P.—No. 402 T—17 10 96—30000

prospect of any lines of Telegraph being extended in the neighbourhood of the rivers mentioned in your letter.

I have the honor to be,
Sir,
Your most obedient servant,
E. Hudson.
Superintendent.

h

Public Works (1897) Department.

CURRENT No. 358/A M.

From Supt of Telegraphs, Madras

Order

No. 2961

Dated 11. 7 - 99.
Received 19. 7 - 99.
Registered
Enclosures
Spare copies.

SUBJECT.

Telegraph Line along the Godavari and its tributaries ____ Stating that this office No. 171 M/ 11. 7 - 99 has been transferred to the Supt of Telegraphs, East Coast Dn for reply.

BACK PAPERS.

No.	Date.
171 m	4-7-99.

FURTHER PAPERS.

No.	Date.
R 259 m	14-7-99
R 274 m	23-7-99

L 5c (½ foolscap).

GOVERNMENT TELEGRAPH DEPARTMENT.

INDEX No. of 189 -9 .

ABSTRACT.

PRECIS.

FROM THE SUPERINTENDENT, Madras DIVISION,

To The Chief Engineer for Irrigation Cochapubmund.

No. 2961 Dated 11th July 1899

(Place) Madras.

Encs. Recd.

258 m / A

SIR,

With reference to your letter No. 171 m, dated the 4th of July 1899, I have the honour to inform you that I have forwarded your letter to the Superintendent Telegraphs East Coast Division for reply as the area marked on the map is outside the limits of this Division

I have the honor to be,
Sir,
Your most obedient servant,
A. W. Boord
Superintendent.
Madras Division.

Reply from S.E. Div. Supt. forwarded -
13/7

Public Works (1899) Department.

IRRIGATION BRANCH.

ISSUE No. 171-A

To

The Superintendent of Telegraphs
Madras Division

(Reply to letter No. , dated)

Dated 4-7-99

Despatched 8-7-99

Enclosures *

* Particulars of Enclosures.

Part 4
3093/99

SUBJECT.

Gauge Stations on the Godavari River – Informs that the subject of establishing – for the purpose of flood warning is now under consideration and requests to furnish information as to the existence of telegraph Stations at the places noted & to mark the same on the accompanying map, also requests to state if there is any immediate prospect of any lines of telegraph being extended to the neighbourhood of the rivers mentioned

E. I. Form No. [illegible]—7-1-99

BACK PAPERS.

No.	Date.

Sent to Government with No. I.,
dated 189 .
Printed with G.O., No. I.,
dated 189 .

REMINDERS ISSUED.

No. 1, dated 189 .
„ 2 „
„ 3 „
„ 4 „
„ 5 „

KEEP-WITHS.

FURTHER PAPERS.

No.	Date.
R 1574	14-7-99
R 2744	28-7-99

...LD & CO. SPECIAL APPOINTMENT CALCUTTA.

H. E. THE VICEROY
THE LIEUTENANT-GOVERNOR OF BENGAL.

H.H. THE LIEUTENANT-GOVERNOR OF N.-W.P. AND CHIEF COMMISSIONER OF OUDH.

H. E. The Commander-in-Chief.

Importers of Pianofortes by the following celebrated makers, viz. :—

J. BROADWOOD & SONS J. & J. HOPKINSON.

No 171 In

...te Sup.t of Telegraphs

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...ing information
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Punes

Telegraph Wash

The wires are not shown on this but telegraph lines have been transferred to the accompanying railway track which shows wires

CHIEF ENGINEER FOR IRRIGATION. 3 - AUG. 1899 1274 M

Shigatse
Jangladie
Jangkajong
Mt. Everest
Mt. Kinchinjunga
Katmandu
Guntok
Pedong
Kalimpong
Damdim
Chalsa
Darjeeling
Mal
Nagrakata
Tundu
Pillan's Hat
Pankhabari
Panighatta
Naxalbari
Bijanbari
Bamandanga
Gerrbetta
Siliguri
Latiguri
Jalpaiguri
Haldibari
Tyinner
Kishenganj
Nilphamari
Darwani
Saidpur
Dinajpur
Parbatipur
Forbesganj
Araria
Purneah
Madhipura
Sonbursa
Katihar
Manikhari
Sahebganj
Rajmehal
Mimaserai
Malda
Tinpahar
Bhagalpur
Jamalpur
Lakhisarai
Shaikhpura
Nawadah
Jamui
Khaira
Bansi
Begusarai
Monghyr
Mokameh
Barh
Patna
Behar
Jehanabad
Arrah
Buxar
Dumraon
Dinapore
Karantadih
Ballia
Revelganj
Chapra
Sonpur
Hajipur
Samastipur
Reserha
Madhubani
Pandaul
Durbhunga
Supaul
Sakri
Raghopur
Mozufferpur
Turkaulia
Bairagnia
Motihari
Segowlie
Bettiah
Kasia
Padrauna
Raksal
Gopalganj
Deoria
Hathuewa
Bhatni
Burhaj
Turipur
Savan
Dorunda
Mashrakh
Maharajganj
Nathibhanjan
Rasra
Nasriganj
Agiaon
Dildarnagar
Buxar
Bhabhua
Sasseram
Delora
Tikari
Barun
Aurangabad
Gya
Hoseinabad
Shergholty
Nawadah
Bela
Jehanabad
Behar
Banki pur
Dumraon
Arrah
Buxar
Agiaon
Dildarnagar
Nasriganj
Mahanad
Bhabhua
Sasseram
Delora
Tikari
Barun
Aurangabad
Gya
Hoseinabad
Shergholty
Burhee
Giridih
Madhopur
Dumka
Nalhati
Azimganj
Jiagunj
Rampurhat
Murshidabad
Berhampur
Sara
Naogaon
Sultanpur
Sherpur
Seraggan
Ullapara
Bagura
Pabna
Kushtea
Kolab
Fa
Rajar
Dhulyan
Raghunathganj
Baidyanath
Deogarh
Garhwa
Daltonganj
Bagodhar
Palamau
Hazaribagh
Barakar
Gobindpur
Nirsachak
Dishargarh
Sitarampur
Ranchi
Dorunda
Purulia
Gangajalghati
Bankura
Burdwan
Bishnupur
Saiathia
Poradaha
Kalna
Katwa
Nadia
Krishnagar
Ranaghat
Kushtea
Kumarkhali
Goalundo
Jessore
Mugra
Harinaghat
Gopalganj
Rangaon
Tarakeshwar
Garbetta
Chandrakona
Ghatal
Midnapore
Kolaghat
Hooghly
Chinsura
Chandernagore
Serampur
Uttarpara
Howrah
Shibpur
Sibpur
Seoraphuli
Bhatpara
Garulia
Shamnagar
Chapra
Nawabganj
Barrackpore
Dumdum
CALCUTTA
Sonarpur
Canning
Hooghly Point
Diamond Harbour
Mud Point
Contai
Jellasore
Balasore
Sambalpur
Jharsogra
Rajkhunkoli
Sini
Chakradharpur
Chaibassa
Dharmasala
Jajpur
Chandabali
Alba
Kendrapara
Huticitola
False Point Light House
CUTTACK
Naraj
Jagatpur
Kendrapara
Khorda
Pipli
Puri
Russellkonda
Aska
Berhampur
Chatrapur
Gopalpur
Parlakimedi
Paruva
Palkonda
Tekkali
Rajam
Pondur
Narsannapet
Calingapatam
Gracacole
Bimlipatan
BAY OF
BENGAL
84°
86°
88°
90°
I
B
ED BY THE DIRECTOR GENERAL OF TELEGRAPHS, CALCUTTA,
of India Offices, Calcutta, July 1895.



‡ Interrupted since [illegible] February 1892: early restoration unlikely.

Litho., S. I. O., Calcutta.

INDIA

showing

TELEGRAPHS

Corrected up to 31st March 1897.

Scale 1 Inch = 64 Miles, or $\frac{1}{4,055,040}$.

100 80 60 40 20 0 100 200 300 Miles

92° 94° 96° 98° 100° 102° 104°

34° 32° 28° 26° 24° 22°

REFERENCES.

Telegraph Lines existing on the 31st March 1896 .....

.....Do.....constructed during 1896-97 .....

.....Do.....under construction or ordered .....

Government Telegraph Office open on the 31st March 1896 ◉AG

.....opened during 1896-97 ■Tulsipur

Telegraph Offices at Junction or Terminal Stations of Railway or Canal Systems, open on the 31st March 1896 (shown only at places where there is not a Government Telegraph Office) ■Tundla

.....Do.....do.....do.....opened during 1896-97 ■Tulsipur

* These are Kashmir State Telegraph Offices.

Tawang
BHUTAN
Tassgong
Bangbari
Halaigaon
Mangaldai
Barjuli
Balipara
Bindukuri
Sootia
Charali
Behali
Biswanathghat
Dhansiri
Namatigarh
Lakhimpur North
Nazira
Nepharting
Kokilamukh
Jorhat
Moiung
Dessangmukh
Sibsagar
Sonari
Salmara
Naxara
Texpur
Ranganadighat
Mossa
Nowgong
Salmara
Silghat
Bokahat
Golaghat
Amguri
Mariani
Titabar
Jakhalabandha
Furkating
Dimapur
Goalpara
Lakhipur
GAUHATI
Pelubari
Sonapur
Nellie
Rahea
Kohima
Lumding
Nungpoh
Shillong
Cherrapunji
Mankachar
Sherpur
Sunamganj
Narayandahar
Netrakona
Fenchuganj
Balegani
Ramgopalpur
Manumukh
Ishvarganj
Maulvibazar
Karimganj
Mudna
Kisharganj
Sylhet
Chhatak
Maimansing
Jamalganj
Kalaura
Barkola
Udharband
Kumbhir
Lakhipur
Silchar
Silcuri
Dwarband
Kulicherra
Jhulnacherra
Kolasib
Sairong
Aijal
Tiddim
Fort White
Kindat
Tammu
Kalemyo
Kalewa
Falam
Mingin
Yeu
Shwebo
Monywa
Myinmu
Sagaing
Myot
Myingyan
MANDALAY
Maymyo
Gangaw
Kan
Pakokku
Ramu
Cox's Bazar
Satkania
Patiya
Maheshkhali
Chattagong
Rangamati
Thandacheri
Demagiri
Lungleh
Fort Tregear
Jhalakati
Barisal
Nalchiti
Sahebganj
Nonkhali
Feni
Laksam
Majigonj
Madaripur
Baidarbazar
Comilla
Chandpur
Madanganj
Bhairab
Baxipur
Dacca
Nanyaseik
Kanaing
Myitkyina
Sadon
Waingmaw
Mogaung
Sima
Momein (Chinese Telegraph Office)
Tsonbo
Banmauk
Nampaung
Myothit
Bhamo
Shwegu
Katha
Pinlebu
Wuntho
Kawlin
Tigyaing
Sinkan
Namkham
Sikaw
Chinyuen
Maingmaing
Weiyuen-loo
Kunlon Ferry
Lashio
Thibaw
Muanglon
Kouhan
Semao
Muanglem
Kiangrung
Maing Kaing
Kengtung
Bernardmyo
Momeik
Mogok
Thabeikkyin
Kabwet
Kyaukmyaung
Kyaukse
Pakokku

E. I. Form No. ... —7-1-69

BACK PAPERS

FURTHER PAPERS.

No.

...LD & CO. SPECIAL APPOINTMENT CALCUTTA.

H. E. THE VICEROY
THE LIEUTENANT-GOVERNOR OF BENGAL.

H.H. THE LIEUTENANT-GOVERNOR OF N.-W.P. AND CHIEF COMMISSIONER OF OUDH.

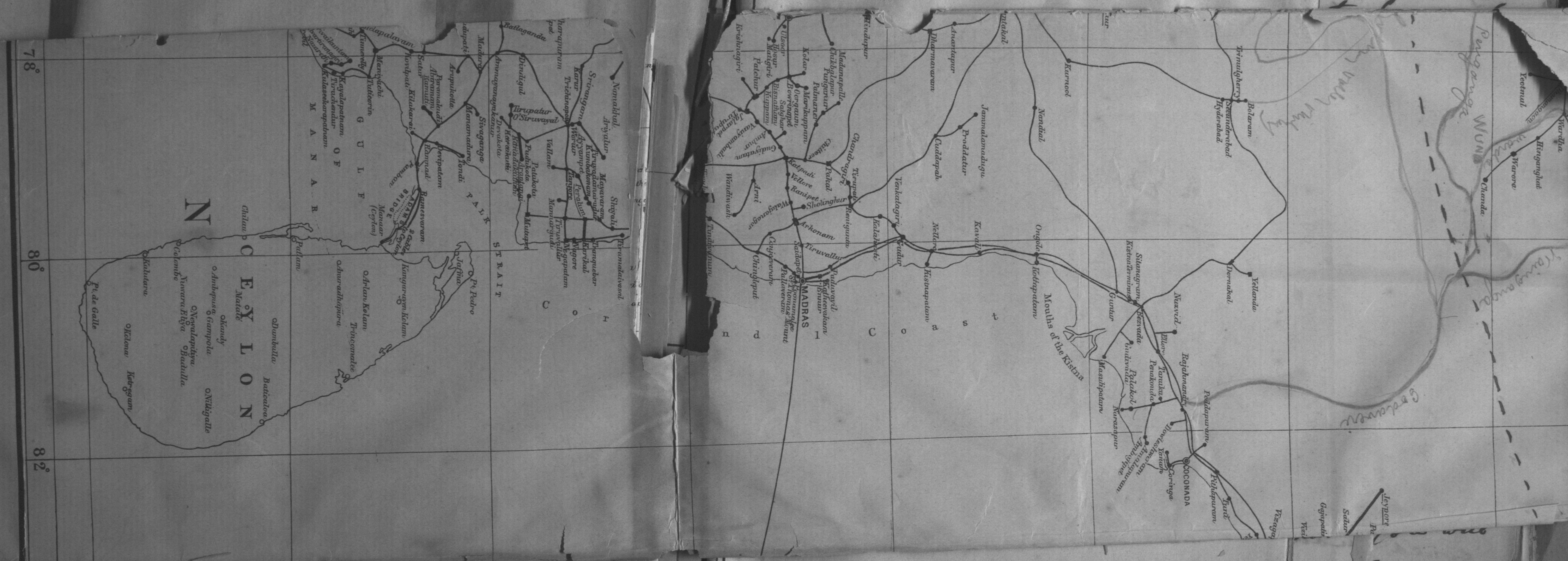
H. E. The Commander-in-Chief.

Importers of Pianofortes by the following celebrated makers, viz. :—

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J & J. Hopkinson.
J. Brinsmead & Sons.
M. F. Rachals & Co.

No 171 M

The Supt. of Telegraphs
Madras Divn



... supply are
... following information
... understand that
... Telegraph
... – Chanda
... tral Province

BACK PAPERS. FURTHER PAPERS.

No.

LD & CO. SPECIAL APPOINTMENT CALCUTTA.

H. E. THE VICEROY AND THE LIEUTENANT-GOVERNOR OF BENGAL.

H.H. THE LIEUTENANT-GOVERNOR OF N.-W.P. AND CHIEF COMMISSIONER OF OUDH.

H. E. The Commander-in-Chief.

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J. BROADWOOD & SONS.

J & J. HOPKINSON.

M. F. RACHALS & Co.

No 171 In

Telegraph Madras Dpt.

known to the Collector

stood that Telegraph Chauda Talk Pmnee

ISLANDS

78°

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82°

m No. ...—7-1-49

BACK PAPERS

FURTHER PAPERS.

No.

No 171 M

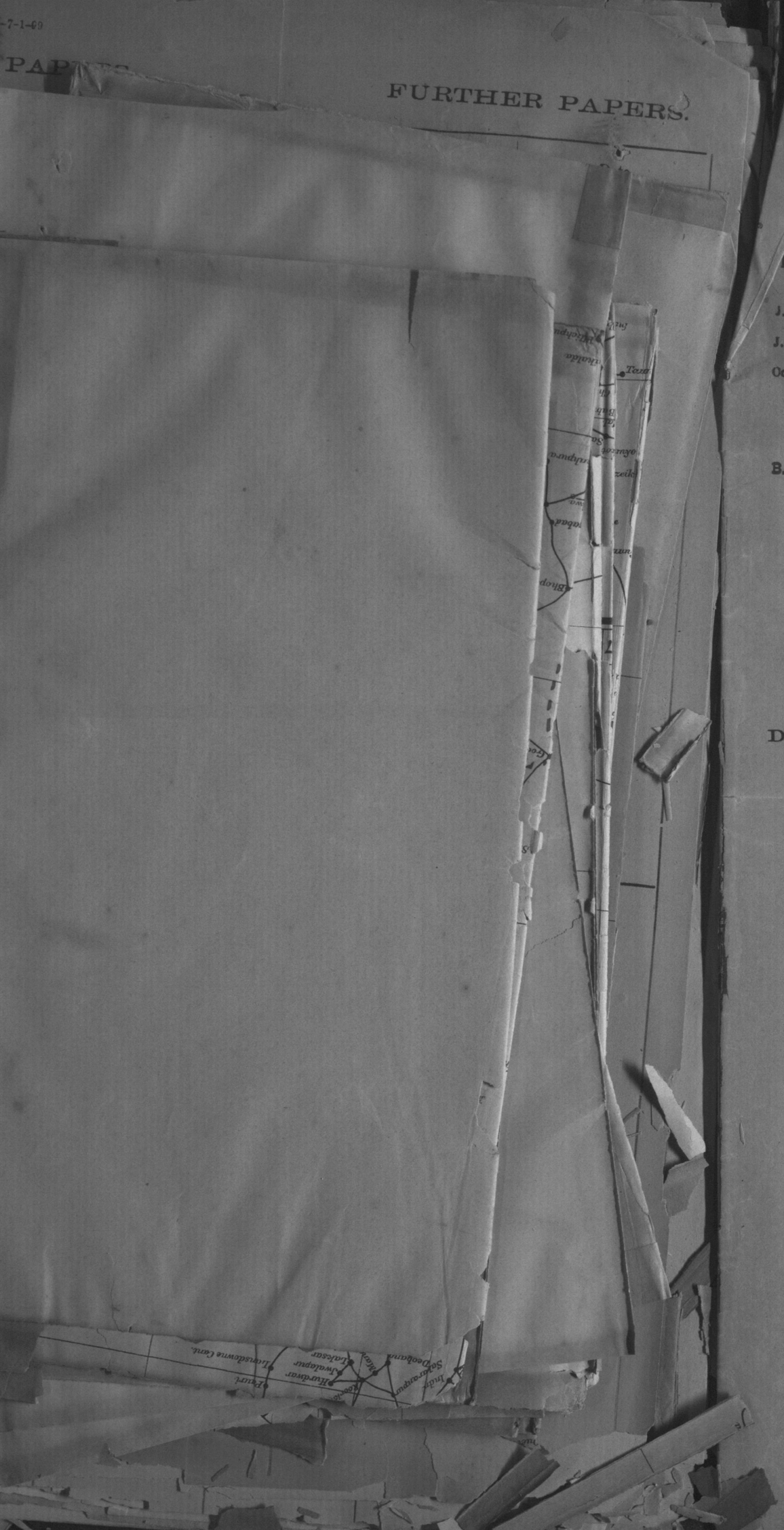


SPECIAL APPOINTMENT

-7-1-69

PAP

FURTHER PAPERS.



LD & CO. SPECIAL APPOINTMENT CALCUTTA.

H. E. THE VICEROY
THE LIEUTENANT-GOVERNOR
OF BENGAL.

H.H. THE LIEUTENANT-GOVERNOR
OF N.-W.P. AND CHIEF COM-
MISSIONER OF OUDH.

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SCHIEDMAYER & SOEHNE

&c., &c.

MUSIC AND MUSICAL INSTRUMENTS OF EVERY DESCRIPTION.

BAND INSTRUMENTS by Fontaine Besson & Co., Antoine Courtois, &c. &c.

BAJOS:—Dobson's, Dallas', The Astragal, &c.

CATALOGUES, POST-FREE.

HAROLD & CO.,

THE CALCUTTA MUSICAL DEPOT,
DALHOUSIE SQUARE. CALCUTTA

1/259m

NORTH BRITISH MERCANTILE
INSURANCE COMPANY.

—:o:—

FIRE—*ESTABLISHED* 1809—LIFE.

Total Invested Funds exceed £12,000,000 Stg

LIFE ASSURANCE WITH ABSOLUTE SECURITY

At Moderate Rates.

Policy for Rs. 5,000 payable at death only.		Policy for Rs 5,000 payable at age 55 or Death if it occur sooner.		Policy for Rs. 5,000 able at age 60 or Death if it occur sooner.	
Age next birthday.	Monthly premium.	Age next birthday.	Monthly premium.	Age next birthday.	Monthly premium.
	Rs. As P		Rs. As P.		Rs. As. P
25	11 8 0	25	15 7 0	25	13 13 0
30	12 12 0	30	18 6 0	30	16 0 0
35	14 3 0	35	22 13 0	35	19 1 0
40	16 1 0	40	30 1 0	40	23 10

Rates for other ages and other systems will be supplied on application

Non-Forfeiture Policies—Liberal Surrender Values

FIRE DEPARTMENT.

Property of nearly every description insured at the most favourable rates.

Total Revenue, 1895, £3,161,269 Stg

APPLY FOR PROSPECTUS.

Branch Office:—100, Clive Street, CALCUTTA.

HAROLD & CO.
CALCUTTA

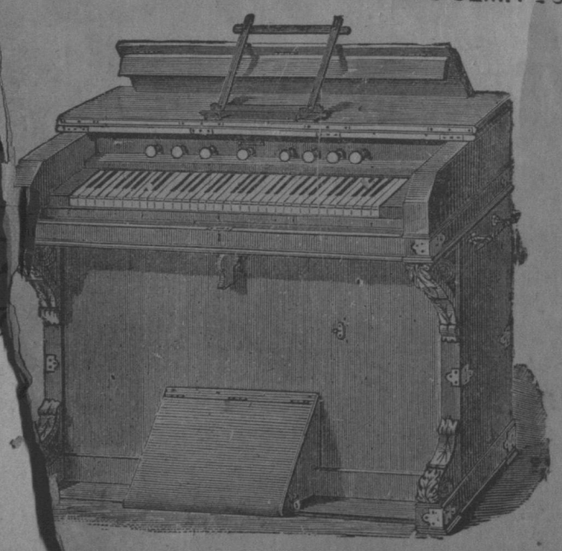
HARMONIUMS.

EVERY STYLE AND PRICE TO SELECT FROM,

MANUFACTURED

TO

UR EXPRESS ORDER FOR EXTREME CLIMATES.



STRATED CATALOGUES. POST-FREE.

INDIA
RAILWAYS.

Scale 1 Inch = Miles or 1 Cm. = Kms.

100 50 0 100 200

94 98 102

30° 28° 26° 24° 22° 20°

Telegraphs

known to

on to

for the

flood warnings

the

Gulf of Cambay



PAPERS.

No 171 W

To The Supt. of Telegraphs
Madras

Encls.
1 Rail. map

Sir

I have the honour to inform you that the subject of establishing gauge stations on the Godavery with a view to the issue of flood warnings has been under the consideration of Govt. and that orders have been issued for a few miles of station, and for the suitable time to keep me that you will kindly furnish me with the following information. It is understood that there is a Telegraph station at Chanda in the Central Provinces

No 171 Dr

To Telegraphic Telephonic & Telegraphic Messages Dr.

Sirdar.
1 mile 5 mails

To Share the honours
Share the
information you
Surgeon & Physician
Sanitation
Gordon
Portion of Gordon
in command of Gordon's
Coronation Oath
Date of pay
Station number
for

NORTH BRITISH MERCANTILE
INSURANCE COMPANY.
:o:
FIRE—ESTABLISHED 1809—LIFE.
Total Invested Funds exceed £12,000,000 Stg
LIFE ASSURANCE WITH ABSOLUTE SECURITY
At Moderate Rates.

Policy for Rs. 5,000 payable at death only.		Policy for Rs 5,000 payable at age 55 or Death if it occur sooner.		Policy for Rs. 5,000 able at age 60 or Death if it occur sooner.	
Age next birthday.	Monthly premium.	Age next birthday.	Monthly premium.	Age next birthday.	Monthly premium

REFERENCES

Standard Gauge, open { double line / single line
Do Do sanctioned or under construction
Metre Gauge open { double line / single line
Do Do sanctioned or under construction
Other Gauges, open
Do Do sanctioned or under construction

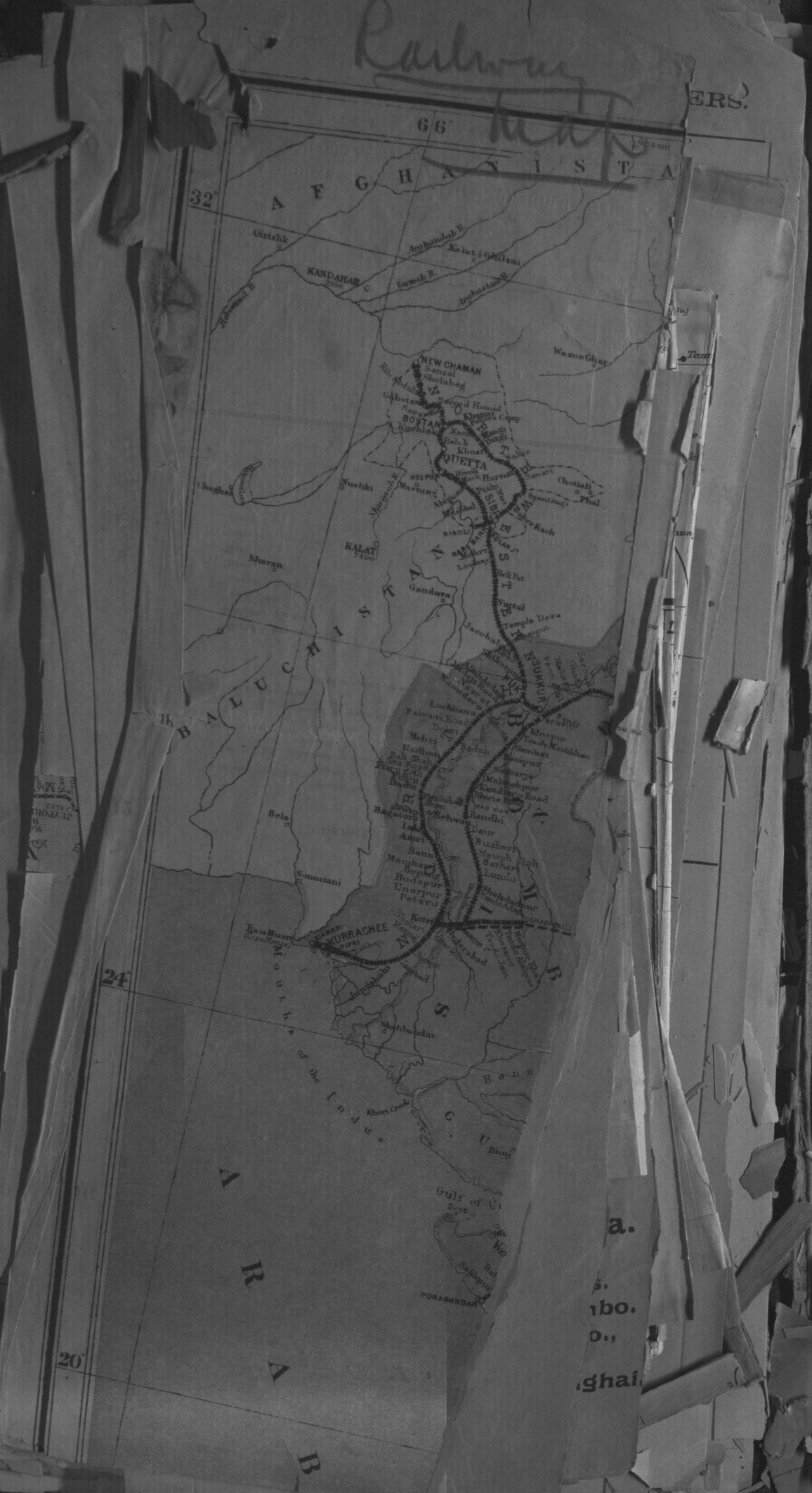
Junctions between two or more foreign lines
Junctions on home lines

Charter Company Granj
Ambeswar Nended
Cooch Behar
Gaekwar's Dabhoi
Kamra Dhanla
Morvi
Dongerpur Himalayan
Jaipur

12.

16.

PAPERS.



a.

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o.,

ghai

No 171 W

To The Supt of Telegraphs
Madras &c.

Sir

Encls.
1 rail. map

I have the honour to inform you that the subject of establishing Sangs stations on the Sind Sagar rail for the purpose of flood warnings is now under the consideration of Govt. A list of any suitable stations must be within a few miles of a telegraph station, and with a view to the selection of suitable places I have to request that you will if possible supply me with the following information. It is understood that there is a telegraph station at Chanda in the Central Provinces

not very far from
the river Penganga
a tributary of the
Godavery; is the
correct and are there
any telegraph stations
in the neighbourhood
of this river below
Chanda or in the
neighbourhood of the
following rivers below
the points named —
on the Wainganga
below Bhandara —
on the Wirravati
or on the Godavery
below Sironcha —
A railway map is
forwarded for reference.
~~Perhaps~~ and if you
could mark on the
map any telegraph lines that exist in the neighbourhood, it would be of assistance —
If such information is available in your office I have the honour to request you will inform me if there is any immediate prospect of any lines of telegraph being extended to the neighbourhood of the rivers I have named above —

4/7/99

Copy to Railway Office
6/7. to Director
Archives

Public Works (1899) Department.

CURRENT No. ~~5100~~

From

The Govt of India.

No. 574 C. W. D

Dated 14. 6. 99

Received 27. 6. 99

Registered

Enclosures 1

Spare copies

SUBJECT.

River gauge (or flood warning) Stations on the Godavari:
Stating that the Govt of India approve of the proposal to establish ——.

D E I.

W 99
20/6/99

LCR
20/6/99

[P. W. 23. 2,000—15-99-6.]

BACK PAPERS.

G.O.	No.	Department.	Date.
R 25 gh	9	14-7-99	
R 29 gh	9	24-7-99	

FURTHER PAPERS.

G.O.	No.	Department.	Date.

Note on the Godaveri Floods, July and August 1896,
by Assistant Meteorological Reporter to the Government
of India.

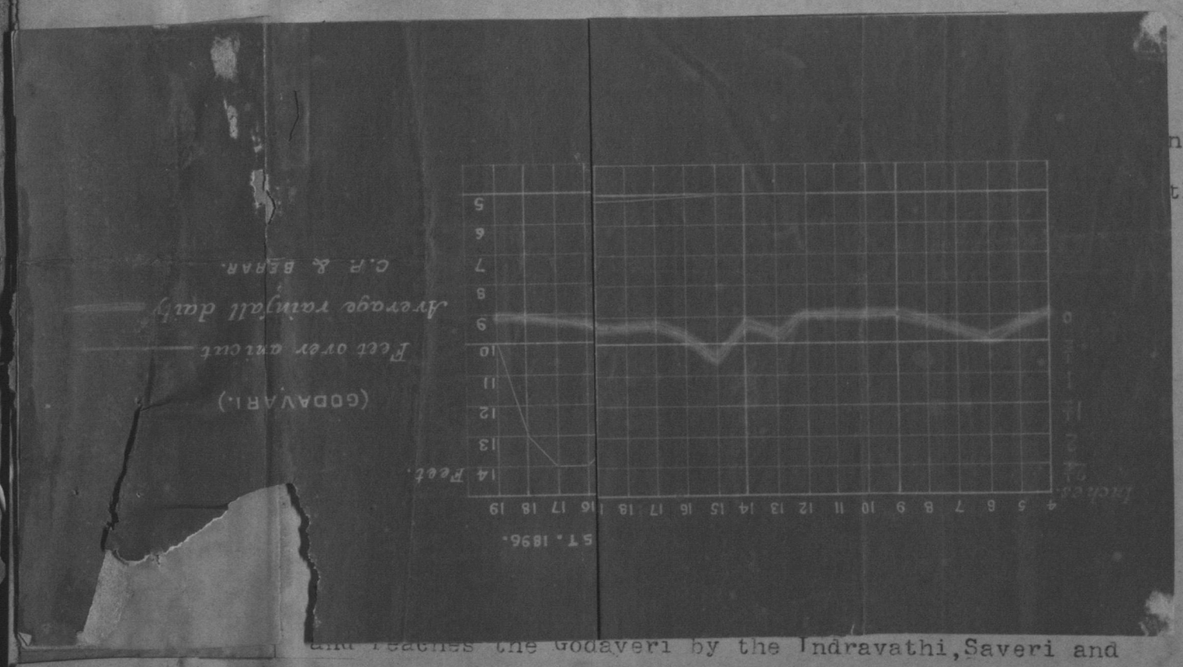
3 S.P.

--------ooo&&&ooo--------

I have examined at the request of the Meteorological Reporter to the Government of India the rainfall of the Central Provinces and Berar in connection with the floods on the Godaveri in July and August 1896. The investigation shows that during the period July 4th to August 20th four storms gave heavy rain to the Central Provinces and Berar viz 25th and 29th July and the 3rd and 9th of August. The accompanying diagram gives the daily average rainfall for the C.P.& Berar and the height in feet of the water over the anicut.

The most severe storm considered from the rainfall point of view was the 29th July when the average was 2.99" and this was followed by the great flood (14 feet above the anicut) on the 2nd of August. There was further heavy rain on August 3rd when the average was 2.51" which was followed by only a slight flood on the 6th and 7th (11 feet over the anicut). Moderate rain fell on the 9th

The districts from which these values were obtained were Chanda, Bhandara, Balaghat, Seoni, Wardha, Nagpur, Chhendwara, Amroati, Ellichpur, Akola.



and reaches the Godaveri by the Indravathi, Saveri and

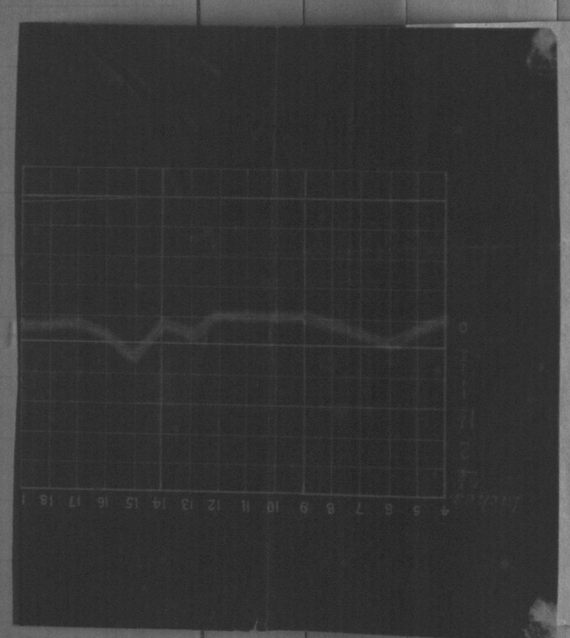
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BACK PAPERS.

G.O.	No.	Department.	Date.
R 25-9h			9.14-7-99
R 29-9h			9.24-7-99

FURTHER PAPERS.

G.O.	No.	Department.	Date.



RECEIVED IN THE SURVEY OFFICE, MADRAS ON 27 OCT 99

RECEIVED IN THE SURVEY OFFICE, MADRAS ON 19 OCT 99

3 S.P.

Note on the Godaveri Floods, July and August 1896, by Assistant Meteorological Reporter to the Government of India.

--------ooo&&&ooo--------

I have examined at the request of the Meteorological Reporter to the Government of India the rainfall of the Central Provinces and Berar in connection with the floods on the Godaveri in July and August 1896. The investigation shows that during the period July 4th to August 20th four storms gave heavy rain to the Central Provinces and Berar viz 25th and 29th July and the 3rd and 9th of August. The accompanying diagram gives the daily average rainfall for the C.P.& Berar and the height in feet of the water over the anicut.

The most severe storm considered from the rainfall point of view was the 29th July when the average was 2.99" and this was followed by the great flood (14 feet above the anicut) on the 2nd of August. There was further heavy rain on August 3rd when the average was 2.51" which was followed by only a slight flood on the 6th and 7th (11 feet over the anicut). Moderate rain fell on the 9th (1.43") and again on the 13th August (1.18") and was followed by a tremendous flood lasting from the 12th to the 18th. Now it is important to notice that the flood on August 2nd, which succeeded the heavy rainfall of July 29th (2.99") was much less than the flood which followed the lightish rainfall of August 9th (1.43") and August 13th (1.18"). But while the principal rainfall on July 29th occurred in the more western districts of the C.P. the principal rainfall on the two later dates occurred in the eastern districts of the C.P. Hence it appears that while the Godaveri floods are due to heavy rainfall in the C.P. the rain which falls over the eastern districts and reaches the Godaveri by the Indravathi, Saveri and Seleree

The districts from which these values were obtained were Chanda, Bhandara, Balaghat, Seoni, Wardha, Nagpur, Chhendwara, Amroati, Ellichpur, Akola.

Seleree branches is the more important. Mr. W.C. Lewis says in his report "I have come to the conclusion that rainfall in the west portion of the catchment area of the Godaveri has little effect on the floods", which bears out my investigations. Hence I think Sironcha would be little good and Chanda less as telegraphing gauge stations and that the proper place if possible would be somewhere past the junction of the Indravathi. The following were the dates on which warnings were sent from Simla to Dowlaishweram on this occasion:—

July 13th	August 2nd
" 23rd and 24th	" 13th and 14th
" 28th	" 27th

and they fully fulfilled the wishes of Mr. W.C. Lewis, who originated the system of warnings which were to be informed of depressions crossing the N.E. coast of the Bay during the months of July, August and September. This information the present C.E. considers too ~~xxxx~~ indefinite to permit of definite action to be taken. The only action which the Meteorological Department can take is to continue to give warning of the approach of storms likely to give heavy rain to the catchment area leaving it to the Madras authorities ~~xxxxxxxxx~~ to determine which branch or branches of the river exercises the greatest influence by placing some gauges in appropriate places above and below of the principal junctions.

Sd. W.L.D.
2.5.99

Pwd 1
7099/99

0-3
5100(S)

17

No. 574 C.W.I.

All communications should be addressed to the Secretary.

GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.
CIVIL WORKS.
Irrigation.

To

The Joint Secretary to the Government of Madras,
Public Works Department, Irrigation Branch.

Simla, the 14th June 1899.

Sir,

I am directed to acknowledge the receipt of the Proceedings of the Government of Madras, No. 247 I., dated the 14th March 1899, approving the recommendation of the Chief Engineer for Irrigation for improving the system of Flood Warnings as regards the Godavari river, and request-ing that the Meteorogical Department of the Government of India may be asked to take the necessary steps for giving effect to the arrangements proposed in paragraph 5 of the note by the Chief Engineer.

2. In reply, I am to say that the Government of India approve of the proposal to establish river gauge (or flood warning) stations on the Godavari to furnish the earliest possible telegraphic information of the approach of floods likely to affect the weir or dam at Dowlaishweram.

Similar arrangements are already in force on several rivers in Northern India and also on the Tungabadra and Kistna, and in all these cases the river gauge stations have been selected, established and maintained by the officers of the Public Works Department, and the data in each case are telegraphed direct to the head-quarters of the officer for the protection of whose works the river gauge stations are maintained.

As these arrangements have been found to work satisfactorily in Northern India and on the Kistna, I am

to

to suggest that the same methods and arrangements should be adopted in the case of the Godavari River.

3. The Government of India cannot approve or sanction any proposal for the transfer of this branch of flood warning work from the officers of the Public Works Department to the Meteorological Department,as there is at present no staff in that office to carry out the work.

4. I am to enclose for the information of the Government of Madras a copy of a note by Mr.Dallas,dated 2nd May 1899, giving the results of an examination of the rainfall in the Central Provinces and Berar in connection with the floods on the Godavari in July and August 1896. While the rainfall at all the ten stations mentioned by Mr.Dallas will affect the gauge readings at Sironcha it is evident that the floods at Dowlaishweram depend also on the rainfall over the eastern catchment drained by the Indravathi,Saveri,and Saleri,and also probably on that over the western area drained which falls in at Sironcha.Useful information as to floods and rainfall on this western branch might possibly be obtained by the establishment of a gauge at the new bridge on the Railway line now under construction which crosses the Godavari between Indore and Bolapur,information of gauge readings being wired from Bolapur, 7 miles from the bridge. A gauge at Sironcha and another lower down below the junction of the Indravathi would no doubt be useful as they would permit the flood readings at those points being correlated with the records of rainfall received from the stations on the catchment areas above,but until these stations can be connected with the telegraph system,the gauge readings will be of little value for the purpose of flood warnings.

5. It is understood that useful warnings were received at Dowlaishweram from the Deputy Commissioner ,Bhandara,when the river Weinganga began to rise,and arrangements might be made by the Canal officers for obtaining similar warnings from the local authorities of heavy rainfall,or of rises in the river,at other points in the catchment area of the Godavari which are

connected

connected with the telegraph system,and for collating the information thus received with the records at the gauge stations that may be established lower down the river.

I have the honour to be,

Sir,

Your most obedient servant,

O.C. Lees.

Under Secy.to the Govt.of India.

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Document accompanying.
by
Copy of note ~~xx~~ Mr.Dallas dated 2nd May 1899 referred to in paragraph 4.

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