

# Public Works (1898) Department.

RAILWAY BRANCH.

G.O., No.

585-86

DATED

18th April 1898

$\frac{40}{2}$   $\frac{10}{1}$   $\frac{65}{2}$

[Despatch Abstract.]

Report of Inspection of the Nilgiri Ry.  
Ordered that the Senior Govt. Inspectors —  
made during the month of April 1898, be  
forwarded to the Govt. of India, and the Agent  
for information.  
Forwarding the Senior Govt. Inspectors' —  
made during the month of April 1898.

Indexed. 22/4/98.

CHARLES BOURCHIER RENTAL GE

1755 AUGU

To Balance of last Account 465 32 —  
Current of this date " " —  
To the Amount of the Rent Roll 1595 24 —  
ending 31st August 1754 " "

SEPTENN

Ds.  
1755 APRIL 29.



## GOVERNMENT OF MADRAS.

## PUBLIC WORKS DEPARTMENT.

## Railway.

Read the following paper:—

## NILGIRI RAILWAY.

METRE GAUGE, 16 $\frac{3}{4}$  MILES.

*Report of an inspection made by the Senior Government Inspector of Railways, Madras, during the month of April 1898.*

My last inspection was made in April a year ago. Very considerable progress has been made since then; but so far from the line being ready for opening, as then thought likely, by the end of March 1898, it seems very little likely to be open before September or October next.

2. *State of progress.*—Formation is everywhere finished except for about 300 feet in all at three troublesome cuttings. Masonry is all complete. Of the bridging, 56 pairs of girders of from 20 to 80 feet span have been erected, and 26 more remain still to be erected. Platelaying has been done from mile 0 to 9 $\frac{1}{4}$ , from mile 11 to 13 $\frac{3}{4}$ , and from mile 14 $\frac{3}{4}$  to 15 $\frac{1}{4}$ . Total 12 $\frac{1}{2}$  miles laid and 4 $\frac{1}{4}$  still to lay. If it were not for the trouble with the three cuttings above referred to, these 4 $\frac{1}{4}$  miles might easily be laid and the line be opened by the end of June. But unfortunately there seems certain to be a good deal of trouble at the cuttings, and this means delay and uncertainty as to date of opening.

3. *The troublesome cuttings.*—These were referred to in paragraph 5 of last year's report. They are the Glenmore slip at chains 97–100; the cutting through the land slide at chain 264; and the sidelong cutting at chains 410–412. The cutting at chain 65, which was referred to as giving trouble in last year's report, has been treated as there recommended and seems all right. At the Glenmore slip, chains 97–100, Mr. Weightman has built about 300 feet of heavy retaining wall, and is heavily revetting the slope above it with dry stone. But slips from the top above the revetment are bound to go on until the ground slopes off to whatever it will stand at. It would be best to acquire a strip of the coffee estate above the slope, as far back as the ground seems likely to slip, and then to cut the eucalyptus trees on top and let it slip if it likes. The railway here is, I think, safe enough, or soon will be when the revetting is done. The whole side of the hill, through which the cutting at chains 261–264 runs, seems to be on the slide. It is an old talus of debris from the vertical cliffs perhaps 1,000 feet high above, and in the course of ages it had found its régime. But the opening of the deep cutting through it has had the effect of setting it on the slide. I think that it will be necessary here to shift the centre line further out, so that the depth of cutting may be minimized. I went perhaps 100 yards horizontally and 50 yards vertically off to one side of it, and found that the ground had fissured so that the whole of the land at the lower side of the fissure had sunk down perhaps 8 or 10 feet, nearly obliterating the railway cutting below. There are many other fissures, and all these will get soaked during the coming rains, and the cutting will most certainly be again and again wiped out. I do not believe that even a strong culvert tunnel will do any good unless the entire cutting above it be filled up level again. But that would be impossible, because the rains will be on long before this could be done, and the tunnel would certainly be crumpled up.

If the hill had been tunnelled originally with a true tunnel, not cut and cover, the slip would never have begun. But it is now too late to do anything of this sort. The part of the hill that stands up, on the outer or down-stream side of the railway cutting, is not on the slide, as its régime has not been upset by its being interfered with on its lower side. I recommend that the whole of this standing up outer piece of hill be cleared away level, and that the rails be carried as far out towards its outer edge as curves will permit. Then I hope that when the inevitable big slide of the upper part of the hill comes off there will be room between it and the rails to prevent the latter being interfered with. I do not think the sliding will extend to the part of the hill on which I propose now that the rails be laid. The great fissure above referred to has come across the line just at a 20 feet bridge and has of course wiped it out. This bridge must in any case be rebuilt, but now it will be rebuilt further down the hill. Some rather heavy retaining wall will also be necessary. I scarcely hope that Rs. 50,000 will suffice for this cutting, from first to last, over and above the original estimate. By the use of water, and by digging, Mr. Weightman has managed to roll down the hill two of the gigantic boulders at chains 410–412 referred to in last year's report: they seem to weigh 700 to 800 tons each. But there are three more of the same sort, and it is doubtful whether they are, or are not, buried sufficiently deeply in the clay hill side to prevent their coming out and rolling down on the line. Any one of them falling on the line will mean a month or two of traffic stopped. Mr. Weightman intends to explore beneath them by small headings, which if necessary will serve for the barrels of powder if the boulders must be got rid of.

OOTACAMUND,  
10th April 1898.

FRANCIS J. E. SPRING,  
Senior Govt. Inspector of Rys., Madras.

ORDER—No. 585 Ry., dated 18th April 1898.

Ordered that a copy of the inspection report be forwarded to the Government of India, and the Agent and Chief Engineer, Nilgiri Railway, for information.

[Here enter No. 586 Ry., dated 18th April 1898.]

(True Extract.)

FRANCIS J. E. SPRING,  
Joint Secretary.

To the Agent and Chief Engineer, Nilgiri Railway.  
" Consulting Engineer for Railways.

Ed. Shaik Karim.

RAILWAY.

Government {1898} of Madras.  
PUBLIC WORKS.

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*Recd.*

} 1898.

*Enclosures*

*Regd.*

*Spare copies*

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G.O., No. 585 Ry., 18th April 1898.

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APRIL.

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Report of Inspection of the Nilgiri Railway

Ordered that the Senior Government Inspector's — made during the month of April 1898 be forwarded to the Government of India and the Agent for information.

## GOVERNMENT OF MADRAS.

## PUBLIC WORKS DEPARTMENT.

## Railway.

Read the following paper:—

## NILGIRI RAILWAY.

METRE GAUGE,  $16\frac{3}{4}$  MILES.

*Report of an inspection made by the Senior Government Inspector of Railways, Madras, during the month of April 1898.*

My last inspection was made in April a year ago. Very considerable progress has been made since then; but so far from the line being ready for opening, as then thought likely, by the end of March 1898, it seems very little likely to be open before September or October next.

2. *State of progress.*—Formation is everywhere finished except for about 300 feet in all at three troublesome cuttings. Masonry is all complete. Of the bridging, 56 pairs of girders of from 20 to 80 feet span have been erected, and 26 more remain still to be erected. Platelaying has been done from mile 0 to  $9\frac{1}{4}$ , from mile 11 to  $13\frac{3}{4}$ , and from mile  $14\frac{3}{4}$  to  $15\frac{1}{4}$ . Total  $12\frac{1}{2}$  miles laid and  $4\frac{1}{4}$  still to lay. If it were not for the trouble with the three cuttings above referred to, these  $4\frac{1}{4}$  miles might easily be laid and the line be opened by the end of June. But unfortunately there seems certain to be a good deal of trouble at the cuttings, and this means delay and uncertainty as to date of opening.

3. *The troublesome cuttings.*—These were referred to in paragraph 5 of last year's report. They are the Glenmore slip at chains 97-100; the cutting through the land slide at chain 264; and the sidelong cutting at chains 410-412. The cutting at chain 65, which was referred to as giving trouble in last year's report, has been treated as there recommended and seems all right. At the Glenmore slip, chains 97-100, Mr. Weightman has built about 300 feet of heavy retaining wall, and is heavily revetting the slope above it with dry stone. But slips from the top above the revetment are bound to go on until the ground slopes off to whatever it will stand at. It would be best to acquire a strip of the coffee estate above the slope, as far back as the ground seems likely to slip, and then to cut the eucalyptus trees on top and let it slip if it likes. The railway here is, I think, safe enough, or soon will be when the revetting is done. The whole side of the hill, through which the cutting at chains 261-264 runs, seems to be on the slide. It is an old talus of debris from the vertical cliffs perhaps 1,000 feet high above, and in the course of ages it had found its régime. But the opening of the deep cutting through it has had the effect of setting it on the slide. I think that it will be necessary here to shift the centre line further out, so that the depth of cutting may be minimized.

By the use of water, and by digging, Mr. Weightman has managed to roll down the hill two of the gigantic boulders at chains 410-412 referred to in last year's report: they seem to weigh 700 to 800 tons each. But there are three more of the same sort, and it is doubtful whether they are, or are not, buried sufficiently deeply in the clay hill side to prevent their coming out and rolling down on the line. Any one of them falling on the line will mean a month or two of traffic stopped. Mr. Weightman intends to explore beneath them by small headings, which if necessary will serve for the barrels of powder if the boulders must be got rid of.

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10th April 1898.

FRANCIS J. E. SPRING,  
Senior Govt. Inspector of Rys., Madras.

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[Here enter No. 586 Ry., dated 18th April 1898.]

(True Extract.)

FRANCIS J. E. SPRING,  
Joint Secretary.

NILGIRI RAILWAY

To the Examiner, Guaranteed Railway Accounts.

Exd. Shaik Karim.

GOVERNMENT OF MADRAS.  
PUBLIC WORKS DEPARTMENT.

Railway.

Read the following paper :—

**NILGIRI RAILWAY.**

METRE GAUGE,  $16\frac{3}{4}$  MILES.

*Report of an inspection made by the Senior Government Inspector of Railways, Madras, during the month of April 1898.*

My last inspection was made in April a year ago. Very considerable progress has been made since then ; but so far from the line being ready for opening, as then thought likely, by the end of March 1898, it seems very little likely to be open before September or October next.

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\* \* \* By the use of water, and by digging, Mr. Weightman has managed to roll down the hill two of the gigantic boulders at chains 410–412 referred to in last year's report : they seem to weigh 700 to 800 tons each. But there are three more of the same sort, and it is doubtful whether they are, or are not, buried sufficiently deeply in the clay hill side to prevent their coming out and rolling down on the line. Any one of them falling on the line will mean a month or two of traffic stopped. Mr. Weightman intends to explore beneath them by small headings, which if necessary will serve for the barrels of powder if the boulders must be got rid of.

OOTACAMUND,  
10th April 1898.

FRANCIS J. E. SPRING,  
Senior Govt. Inspector of Rys., Madras.

No. 585 Ry., 18TH APRIL 1898.

ORDER—No. 585 Ry., dated 18th April 1898.

Ordered that a copy of the inspection report be forwarded to the Government of India, and the Agent and Chief Engineer, Nilgiri Railway, for information.

[Here enter No. 586 Ry., dated 18th April 1898.]

(True Extract.)

FRANCIS J. E. SPRING,  
Joint Secretary.

To the Agent and Chief Engineer, Nilgiri Railway.  
,, Examiner, Guaranteed Railway Accounts.  
,, Consulting Engineer for Railways.

ENDORSEMENT—No. 586 Ry., dated 18th April 1898.

Forwarded.

(By order.)

FRANCIS J. E. SPRING,  
Joint Secretary.

RAILWAY.  
Government {1898} of Madras.  
PUBLIC WORKS.

Recd. }  
1898. }  
Regd. } Enclosures  
Spare copies

G.O., Nos. 585, 586 Ry., 18th April 1898.

APRIL.

Report of Inspection of the Nilgiri Railway

Forwarding the Senior Government Inspector's — made during the month of April 1898.

2

No. 585 Ry., 18th April 1898.

GOVERNMENT OF MADRAS.  
PUBLIC WORKS DEPARTMENT.

Railway.

Read the following paper:—

NILGIRI RAILWAY.

METRE GAUGE, 16 $\frac{3}{4}$  MILES.

Report of an inspection made by the Senior Government Inspector of Railways, Madras, during the month of April 1898.

My last inspection was made in April a year ago. Very considerable progress has been made since then, but so far from the line being ready for opening, as then thought likely, by the end of March 1898, it seems very little likely to be open before September or October next.

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hill that stands up on the outer or down-stream side of the railway cutting, is not on the slide, as its régime has not been upset by its being interfered with on its lower side. I recommend that the whole of this standing up outer piece of hill be cleared away level, and that the rails be carried as far out towards its outer edge as curves will permit. Then I hope that when the inevitable big slide of the upper part of the hill comes off there will be room between it and the rails to prevent the latter being interfered with. I do not think the sliding will extend to the part of the hill on which I propose now that the rails be laid. The great fissure above referred to has come across the line just at a 20 feet bridge and has of course wiped it out. This bridge must in any case be rebuilt, but now it will be rebuilt further down the hill. Some rather heavy retaining wall will also be necessary. I do not believe that ~~one~~ <sup>half a lakh</sup> will suffice for this cutting, from first to last, over and above the original estimate. By the use of water and by digging, Mr. Weightman has managed to roll down the hill two of the gigantic boulders at chains 410-412 referred to in last year's report: they seem to weigh 700 to 800 tons each. But there are three more of the same sort, and it is doubtful whether they are, or are not, buried sufficiently deeply in the clay hill side to prevent their coming out and rolling down on the line. Any one of them falling on the line will mean a month or two of traffic stopped. Mr. Weightman intends to explore beneath them by small headings, which if necessary will serve for the barrels of powder if ~~they~~ must be got rid of.

DOTACAMUND,  
10th April 1898.

FRANCIS J. E. SPRING,  
Senior Govt. Inspector of Rys., Madras.

ORDER—No. 583, Ry., dated 18<sup>th</sup> April 1898.

Ordered that a copy of the inspection report be forwarded to the Government of India, and the Agent and Chief Engineer, Nilgiri Railway, for information.

[Here enter No. 586, Rv., dated 18<sup>th</sup> April 1898.]

(True Extract.

Under Secretary.

To the Agent and Consulting Engineer, Nilgiri Railway  
 „ Examiner, Guaranteed Railway Accounts.  
 „ Consulting Engineer for Railways.

Exd. Shaik Karim.

## RAILWAY.

## Report of Inspection of the Nilgiri Railway

Ordered that the Senior Government Inspector's — made during the month of April 1898 be forwarded to the Government of India and the Agent for information.

ENDORSEMENT—No. 586 Ry., dated 18th April 1898.

Forwarded.

(By order.)

Joint Secretary.

Forwarding the Senior Government Inspector's — made during the month of April 1898.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following

*Print* Report of an inspection of the Nilgiri Rly  
made by the Senior Govt Insp of Mys, Madras, during the  
month of April 1898.

Ordered that a copy  
of the inspection report be  
forwarded to the Govt of India,  
and the Agent and Chief Engineer,  
Nilgiri Railway for information.

N<sup>o</sup> 586. R. d. 18<sup>th</sup> April 1898.

Dec'd Forwarded.  
26/4/98

Agent S.C.E. Nilgiri Rly  
Examd. Attd. Rly Accts.  
Copy sent for Asst.  
25/4/98

FWS  
A

1898  
10.4.98

Plone  
7/10/98

Nitjin Railway

Metre gauge, 16 3/4 mls.

Report of an inspection made of the line from Inyanga to Ny. Graham during the month of April 1898.

My last inspection was made in April a year ago. Very considerable progress has been made since then, but so far from the line being ready for opening, in the thought that by the end of March 98, it seems very little likely to be open before September or October next.

2. State of Progress. Formation in two places finished except for about 300 feet in all at the troublesome cutting. Draining is all complete. Of the bridging, 56 <sup>three</sup> ~~four~~ <sup>four</sup> of girders of from 20 to 80 ft span have been erected, and 26 more remain still to be erected.

Platforming has been done from mile 0 to 9 1/2, from mile 11 to 13 1/4, and from mile 14 3/4 to 15 1/2. Total 12 1/2 miles laid and 4 1/2 still to lay. If it were not for the trouble with the three cuttings above referred to these 4 1/2 miles might easily be laid and the line be opened by the end of June. But unfortunately there seems certain to be a good deal of trouble at the cuttings, and this means delay and uncertainty as to the opening.

3. The troublesome cuttings. These were referred to in para 5 of last year's report. They are the Glenmore slip at chain 97-100; the cutting through the land slide at chain 264; and the sideling cutting at chain 410-412. The cutting at chain 65 which was referred to as giving trouble in last year's report, has been treated as there recommended and seems all right. At the Glenmore slip, chain 97-100, Mr. Wightman has built about 300 ft of heavy retaining wall, and is heavily settling the slope above it with dry stone. But slips from the top above the settling are bound to go on until the ground slopes off to whatever it will stand at. It would be hard to require a string of the coffee estate above this slope as far back as the ground seems likely to slip, and then to cut the macadamized track on top, and let it slope off at this. The railway here is I think safe enough, or soon will be, when the settling is done. The whole side of the hill, through which the cutting at chain 261-264 runs, seems to be on the slide. It is an old talus of debris from the vertical cliffs perhaps 1000 ft high above, and in the course of <sup>ages</sup> it has found its regime. But the opening of a deep cutting through it has had the effect of setting it on the slide. I went perhaps 100 yards horizontally and 50 yards vertically off to one side of it, and found that the ground had 'pinned'

24

*[Faint, illegible handwriting on lined paper]*

*[Faint, illegible handwriting on lined paper]*

as that the whole of the land at the lower side of the prism had sunk some 8 or 10 ft. of course much obstructing the ~~water~~ <sup>drainage</sup> railway cutting below. There are many other prisms, and all these will get filled during the coming rains, and the cutting will most certainly be again and again wiped out. I do not believe that even a strong culvert tunnel will do any good unless the entire cutting above it be filled up level again. But that would be impossible because the rains will be on long before this could be done, and the tunnel would certainly be <sup>run</sup> ~~crushed~~ <sup>cut and covered</sup> up. If the hill had been tunnelled originally with a true tunnel, not cut & cover, the slope would never have begun. But it is now too late to do anything of this sort. The part of the hill that stands up on the outer or down-stream side of the railway cutting, is not on the slide, and its regime has not been upset by its being interfered with on its lower side. I recommend that the whole of this standing up outer piece of hill be cleared away level, and that the rails be carried on far out towards its outer edge as far as will permit. Then I hope that when the inevitable big slide of the upper part of the hill comes off there will be room between it and the rails to prevent the latter being interfered with. I do not think the sliding <sup>will extend to</sup> ~~of the hill~~ <sup>the part of the</sup> hill on which I propose now the rails be laid. The great prism above referred to has once across the line just at a 20 ft bridge and has of course wiped it out. This bridge must in any case be rebuilt, but now it shall be rebuilt further down the hill. Some rather heavy retaining wall will also be necessary. I do not believe that Mr. Kelly's ditch will suffice for this cutting, from point to point, and also the original estimate. By the use of water and by digging. Mr. Wightman has managed to roll down the hill two of the gigantic boulders at chain 410-412 referred to in last year's report: they seem to weigh 700 to 800 tons each. But there are <sup>three</sup> ~~three~~ more of the same sort, and it is doubtful whether they are or are not buried sufficiently deep in the clay hillside to prevent their coming out and rolling down on the line. Any one of these falling on the line will mean a month or two of traffic stopped. Mr. Wightman intends to explore beneath them by small headings, which if necessary will serve for the removal of powder if they must be got rid of.

(Continued).

10-4-98

7.1.5.5.

See foot. Page 178. 2nd.