

(1) Number of pages 8
(2) Date of repair 31-3-44
(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No.	1843	Press
27 28		Mis.
Dated	3-8	1840.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
3rd August 1870.*

No. 27. Read the following Endorsement of the Under Secretary to the Government of India, Public Works Department, dated Simla, 30th June 1870, No 1,157-R. :—

Read the following Report from the Superintendent of the Geological Survey of India, to the Under Secretary to the Government of India, Home Department, dated Calcutta, 6th June 1870, No. 744.

I HAVE the honour to acknowledge receipt of your docket, No. 2,662-A., giving cover to copy of correspondence regarding the occurrence of coal in the Madras Presidency, and suggesting the offer of a reward of considerable amount for the discovery and proof of the existence of any workable seams of coal within that area, and requesting an expression of my opinion as to the wording of the advertisement in which such proposed reward should be announced.

2. As it is my decided opinion that there is the smallest possible chance of such deposits being found, it might perhaps be sufficient to say that I believe any such promise of reward can only result in the submission of a large number of the crudest and most useless proposals, which will be sent in from every side by every one, who, without examination and without knowledge, may fancy he has seen something which he presumes must indicate coal. While I cannot, therefore, support the proposition to issue any such announcement of reward, I am satisfied that, if it be proposed at all, it should be somewhat in the terms suggested by the Public Works Department, that it should be in the form of a payment per ton raised for the first ten years. I think eight annas per ton, or, at the outside, one rupee per ton, would be ample. But this should only be payable on the fact being proved *by the claimant* that coal does exist in workable quantity, and of workable quality. If the Government are to undertake to prove the truth or falsehood of all such dreamy assertions of the existence of coal, nothing can possibly result but an useless waste of time and money

3. I am convinced of this, not only by the general experience of the result of such offers, but even more by the grounds on which the offer is recommended by Major Shaw Stewart who may fairly be supposed to know more of the facts than others in the present case. This recommendation appears to me to be based on an entire misconception of the facts regarding recent discoveries of coal, and it may, therefore, be well briefly to indicate for the information of the Consulting Engineer for Railways in Madras, as well as others, how these matters really stand.

4. Major Shaw Stewart refers to a generalized statement of mine as to the geographical limits within which the great development of coal measures in India has been confined. That this was a very general statement he would have seen from the fact that the coals of Assam, Eastern Bengal, and many other places were excluded; and so far as the argument that the productive coal fields of India were confined to one belt across the Peninsula, it was of exceedingly little importance whether the southern limit was given as the 20° or as the 19° of North latitude. In fact, if Major Shaw Stewart had looked at the map which accompanied the report to which he refers, he would have seen that coal-bearing rocks were shown to extend below the 20° of latitude, and would also have seen that the country still farther to the south, was shown to be "unknown geologically,"

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and regarding which, therefore, nothing was ventured to be asserted. The southern limit of the coal-bearing rocks has since then been carried further to the south than was then (1867) known, but only within the limits then indicated as unexamined

5 Major Shaw Stewart is entirely correct in stating that great difficulty presents itself when any attempt is made to form general conclusions regarding the mineral resources of so vast a country. But this difficulty only arises from the impracticability of actually seeing this vast area, and the necessity of trusting to the information of others. There is no real difficulty in determining the facts wherever we can examine the country

6. Major Shaw Stewart also quotes from reports of mine stating that "coal had been found in the borings in the Chanda District, at places where its existence was entirely unknown and unsuspected." It was clearly not unknown or unsuspected by the Geological Surveyors, as they selected these points at which the borings were put down. But it was asserted that it could not possibly exist there by so-called practical Engineers, the very class whose aid Major Shaw Stewart would now invoke.

7. The Consulting Engineer for Railways goes on to argue that because coal has been found at Midnapore under laterite, and because a considerable portion of the Madras Presidency presents a surface formation of laterite also, he is unable to see that the "discovery of coal should be a more improbable event here than at Midnapore."

8. We are not in any way responsible for the statements or descriptions given in a newspaper; but those quoted by Major Shaw Stewart certainly do not represent the facts correctly. The seam of coal (the thickness of which by the way is as yet quite unknown) does not "underlie" a thick superficial deposit of laterite, in the ordinary and proper sense of the term. It occurs in a series of beds of sandstones, &c., of totally distinct age from the laterite, which had been disturbed, broken up, and very largely denuded or worn away before the nearly horizontal beds of the laterite and lateritic clays were spread over them. That is the continuity or position of one formation is not the slightest clue to the continuity or position of the other. The lower rocks which crop up in the neighbourhood are not crystalline as stated. The crystalline rocks show a long way to the west. But wherever there is any trace of rocks under the laterites, those rocks are sandstones, which have become much impregnated with iron from the laterite above, and have therefore lost a good deal of their distinctive character. Major Shaw Stewart says, "so far as I know, a discovery of coal under such circumstances is without precedent." But so far from this being really so, coal has not only been known but worked for many years in the eastern end of the Raneegunge coal field under exactly similar circumstances, the only difference being that the covering or thickness of the laterite above is much less than at Midnapore. In other respects the cases are analogous.

9. Undoubtedly, "similar discoveries may be looked for elsewhere under similar geological conditions." But, although there are in the Madras Presidency vast tracts of country in which the geological formation of the surface is also laterite, there is not, that I am aware of, any single locality where there is the slightest reason to suppose that this laterite covers up and conceals coal measures

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below. There is no place where such coal measures appear in the adjoining country, or in any of the sections. At Midnapore, there is, at a limited distance to the north, the extensive and rich field of Raneegunge, which is all covered up with laterite at its eastern limit; and, again, in the south, similar sandstones, &c., appear near Cuttack, rendering it beyond any question more probable that if any distinct formation did occur under the laterite, and above the crystalline rocks that formation would certainly be the coal-bearing rocks. That such was fully anticipated by the Geological Survey is evident from their persistently recommending trial borings to be carried out through the laterite to the east, although the vastly increased thickness of this lateritic formation to the south (150 feet in places,) and the impossibility of obtaining any data that would justify calculation as to chances would have prevented our urging any trials immediately near Midnapore. In truth, the meeting with the coal was the most perfect chance, the boring just reached the lower formation at the edge of the surface of the slightly inclined bed of coal; and had it so happened that the boring for water had been put down ten yards to the west, it would, in all probability, have never touched the coal at all. Such was the uncertainty in making any such trials, even though the firm conviction may have existed of the probability of the coal measures being there.

10. But there is not *as yet known* a shadow of evidence that any similar conditions exist anywhere in the Madras Presidency.

11. The Geological Survey of India is fully alive to the vast disadvantages under which Southern India labours, as compared with Bengal and Central India, from the want of coal. And we, therefore, look with great interest to the examination of the valley of the Godavery, where coal has been traced at no very great distance from the boundary of the Madras Presidency. So important does this appear that arrangements are now in progress to push on the examination of that country with as much expedition as possible. This would have been done before now, but that hitherto this part of the map of India has been a perfect blank; and it is only within the last few months that we have received the newly completed topographical survey, which will now enable us to take up that district.

No. 3,110

Copy forwarded to the Public Works Department, with reference to its communication, No. 763-R., dated the 5th ultimo, and with the intimation that this department concurs in the views expressed in paragraph 2.

By Order of the Governor General in Council.

(Signed) W. M. SOUTTAR,
Offg. Under Secy. to the Govt. of India.

SINLA,
28th June 1870.

Copy of the foregoing forwarded for information to the Government of Madras in the Public Works Department, (Railway,) with reference to its Nos. 1,006 and 1,376, dated the 11th April and 2nd June 1870, respectively.

(Signed) A. H. VAUX,
Under Secretary.

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3rd August 1870.

No. 28

ORDER THEREON, 3rd August 1870, No. 1,843.

RAILWAY, No. 5.

COMMUNICATED to the Acting Consulting
Engineer for Railways in continuation of
G. O., No. 1,375, dated 2nd June 1870.

(True Extract)

Colonel, R E.,

Secretary to Government

To the Acting Consulting Engineer for Railways.
.. Editor's Table

Ed E. C Shunker.

JW. Sept

No 1843

Proceedings of the Madras Government
Under date the 3rd Aug 1870
Read the following

Under
From the Secretary to the
Govt of India

(Here enter No. 1157 of 30 June
1870)

Communicated to
the Acting Consulting
Engineer for Railways
in continuation of G. O.
No. 1375 dated 2nd June 1870

I am to send the
in the 2nd Edition

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The Consulting Engineer
for Railways
Editor's Table.

Respect 5/8/70.

✓ No 2643.

Govt. of {1870} Madras.

PUBLIC WORKS.

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for Railways.*

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Mar 27-28

Cal. Government,
 Cal. ~~Govt~~ from the Govt.
 of India forwarding a copy
 of a report by Mr. Aldham
 on the subject of Spera
 ven and for the discovery
 of workable seams of
 coal in the Madras Presi-
 dency, communicated to
 the Government for Rail-
 ways -