

The plan of covering the outer armour of submarine telegraph cables with hemp served with tar or a tarry compound originated with Sir Charles Bright and Mr. Latimer Clarke, and was designed in consequence of experience having shown that where a submarine cable became buried in sand or mud, the sheathing remained intact; but where it was exposed, the iron armour was entirely destroyed in many places. It is supposed this destruction resulted from veins of copper at the bottom of the sea, from sulphuret of copper or iodine held in solution, or from black sulphuret of iron, arising from the decomposition of animal matter. Any of these being electro-negative to the iron sheathing, a battery couple would be set up, and the electro-positive sheathing rapidly disappeared. The hemp and tar are to protect exposed pieces of the cable, as the mud and sand would protect those portions covered by them.

If it should be decided to adopt the Atlantic model for a submarine telegraph cable for the deep-sea portion of the line between New Zealand and Australia, lengths of much heavier cable would be required at the landing places; the difference would however only extend to the armour, the core would be the same throughout. The length and weight of the shore ends can only be determined after survey.

As to the cost of a submarine electric cable of the pattern I have described, I am not able to speak with any assurance of accuracy at this distance from the home markets.

I have, &c.,

W. H. FLOYD,
Electrician, N.Z. Telegraphs.

15th August, 1872.

22. *The Chairman.*] You think that it is very necessary to have accurate soundings taken?—In order to put down a line with any degree of safety, previous soundings are indispensable.

23. After a cable has been well laid down, is it liable to go wrong?—The first cable successfully laid at any great depth was in the year 1865, so that sufficient time has scarcely elapsed to form an accurate opinion on the point.

24. In the event of going wrong, can it be easily picked up?—So long as the iron armour or outer protection remains intact, there is no great difficulty.

APPENDIX.

1.

Mr. W. GRAY to the CHAIRMAN, Telegraph Cable Company.

SIR,—

General Post Office, Wellington, August 17, 1872.

I have the honor, by direction of the Hon. the Postmaster-General, to forward to you the enclosed copy of a letter just received by him from Mr. Audley Coote on the subject of a Submarine Telegraph Cable to connect New Zealand with Australia.

I have, &c.,

W. GRAY,
(*pro* Secretary).

The Chairman, Telegraph Cable Committee.

Mr. AUDLEY COOTE to the HON. the POSTMASTER-GENERAL.

SIR,—

Hobart Town, Tasmania, 30th June, 1872.

I have the honor of again addressing you on the subject of the Submarine Telegraph Cable to connect New Zealand with Australia.

I have now, on behalf of the projectors of the Australia and New Zealand Telegraph Company, Limited, to submit for the approval of your Government the following terms for the construction and laying of the proposed cable:—

I am prepared to undertake, on behalf of the projectors of the Australian and New Zealand Telegraph Company, to construct, lay down, and maintain a Submarine Telegraph Cable to connect New Zealand with Australia, upon being guaranteed by the Government interest at the rate of $5\frac{1}{2}$ per cent. per annum on the sum of £450,000 for a term of fifty years.

A contract has been entered into with the India Rubber, Gutta Percha, and Telegraph Works Company to make and lay the cable.

With regard to the Directors of the Company it is almost needless for me to refer to their position, they are so well known in the commercial and telegraph world, namely, Charles Trotter, Esq., John W. McLaren, Esq., Abrm. Scott, Esq., James Alexander, Esq., S. W. Silver, Esq., Neil Bannatyne, Esq., Matthew Grey, Esq., and several others who have taken an interest in this undertaking.

The Solicitors for the Company in London are Messrs. Hargrove, Fowler, and Blunt, who command the requisite confidence in financial circles.

I have now the honor to inform you I have full power to negotiate and sign contracts with your Government, and shall be glad to forward to you copies of my credentials and powers, so that any and every inquiry you may deem necessary may be made into the stability and financial resources of the gentlemen with whom I am associated.

I shall be glad if the Executive will consider this proposal at an early date, and, if required, I shall be happy to supply any further information in my power.

I have, &c.,

The Hon. the Postmaster-General, Wellington, New Zealand.

AUDLEY COOTE.

2.

Mr. W. GRAY to the CHAIRMAN, Telegraph Cable Committee.

SIR,—

General Post Office, Wellington, 3rd October, 1872.

I have the honor, by direction of the Hon. the Postmaster-General, to forward to you the