

transported from one place to another, even into the forest, and close to the standing timber that is to be treated.

When elevated reservoirs and the cold treatment is decided on (it may be that such treatment would be sufficient to satisfy all ordinary demands), barrels to hold water, and barrels containing the chemicals, may be hoisted into the tops of trees, and, while hanging there, flexible tubes could be brought from them to the timber to be treated, giving about a pound pressure for every thirty inches the timber is below the hydraulic head.

If creosote oil can be forced into the centre of a heavy stick of timber by bringing a pressure on both ends at the same time, I think it will find its way into a stick under 30 or 40 feet of hydraulic head when applied at one end, while the other end is left open as a vent for the water that was left in to run out.

I have an abiding faith in the preservation of any timber that has been well purged of its albumen, and the pores filled with any inorganic matter that can be made insoluble in them. Also that some of the light, cheap, and coarse-grained woods can be made for railway purposes, by chemical treatment, about as good as the harder and more costly woods treated in the same way.

I do not know the extent of your forests, or the size of your trees, but feel satisfied from specimens I have that you possess some good timber, that can be easily and cheaply preserved by the process I have named.

I will send to you with this some specimens of your woods, which I have sawed and prepared myself for use under the microscope; they should be dissolved from the papers, washed, and fastened on to glass strips, that light may be transmitted through them when viewed under the microscope, to see the structure and the form of the capillaries.

I have now written for you much more than I intended when I commenced to write, much more than you can possibly care to read; but the subject is important, and becoming more so as the uses for wood increase, the forests disappear, and we become more interested in economic arts. I beg you to refer this letter to your Engineer for observation and criticism. If due attention is paid to all I have written, it may lead to useful experiments, and result in saving to your new colony many thousands of pounds sterling.

The Under-Secretary for Public Works, Wellington.

I have, &c.,
W W EVANS.

P.S.—I forgot to mention that I have seen the reports of the Commissioner appointed by the Royal Academy of Sciences, of Amsterdam, to examine into the history of the teredo, and the best means of preserving timber in marine works against his ravages. I have read an account of the experiments conducted by this Commission, and I am aware of the failure of all of them as against the teredo, except those in which they used creosote oil. I knew that they used two chemicals, in connection with the Boucherie process, and failed to keep the teredo out; but I cannot see that they attempted in the first place to wash out the albumen that filled the capillary tubes, and gave sustenance to this worm, poisoned or not poisoned. This Commission was composed of Messrs. Vrolik, Harting, Buysing, Van Ordt, and Von Baumhauer. Their reports are published in French, and it may be in English also; they should be read by all engineers in charge of harbour works.—W W.E.

No. 7

Mr. W W EVANS to the UNDER-SECRETARY for PUBLIC WORKS, Wellington.

SIR,—

New York, 3rd March, 1881.

I enclose a paper I have written for you on the preservation of timber. I beg you to excuse its shabby appearance; my clerks have injured it in taking copies by hektograph, and I have no time to get it copied again. Since writing this paper, I have seen Mr. Young, General Manager of the American Wood Preserving Company, representing the Thilmany process. He informs me that he can treat timber for 16 cents per cubic foot, and can furnish a complete apparatus for \$50,000, to have a copper cylinder 100 feet long. I have also seen Mr. Andrews, representing the Hayford improved creosoting process. He informs me that he can furnish a complete apparatus for \$20,000, and that the cost per cubic foot will depend on the cost of creosote in New Zealand. He asks me if you have creosote, also, if you have extensive forests.

The Under-Secretary for Public Works, Wellington.

I have, &c.,
W W EVANS.

No. 8.

The ASSISTANT UNDER-SECRETARY for PUBLIC WORKS to Mr. W W EVANS, New York.

SIR,—

Public Works Office, Wellington, 21st April, 1881.

I am directed by the Minister for Public Works to acknowledge the receipt of your letter of the 3rd March, forwarding a report on the various methods of preserving timber, and to express the Minister's thanks, and also those of the Engineer in Charge, North Island, to whom the report has been referred, for the very interesting and exhaustive information which you have furnished on the subject.

W W Evans, Esq., New York.

I have, &c.,
CHARLES T. BENZONI,
Assistant Under-Secretary for Public Works.