

been known that no connexion exists between the tubes laterally ; and this is shewn by the interesting experiment of stopping up or shutting off certain of the sap-tubes at the end of the tree, leaving exposed such as form a word : which word, or name, by the injection of a coloring liquor, can be driven from one end of the tree to the other ; so that wherever the tree is cut through, the name appears distinctly in colored letters on the exposed sections.

This experiment is interesting, not only in a scientific point of view ; but it shews that none of the processes hitherto used, wherein lateral pressure is involved, can force any preserving liquor into a tree without a degree of violence, which must injure the fibre of the wood, and destroy its strength and use for many purposes.

The advantages which would result from expelling the sap and replacing it by an antiseptic fluid, have been long known ; and the idea of effecting this by applying the fluid under pressure at the end of a piece of timber is not new, having been suggested and patented many years ago by Mr. Bethel. But the means then used did not accomplish the object in such a manner as to admit of its commercial application. Hence the more expensive process of creosoting has been adopted ; where the timber is totally immersed in the oil, under pressure, a method which does not permit the sap to escape.

By the old process of violent pressure, the preserving liquor is forced at right angles to the tubes through the woody fibre of the tree, injuring its strength as well as its capability, in railway sleepers, for example, to resist the wear of the chairs ; consuming at the same time an unnecessary amount of the preserving liquor, without (whatever pressure may be applied) thoroughly impregnating the timber, while one-sixth or one-eighth of the force only is necessary by the new process, and the portion alone requiring the preservative infusion, viz. the soft matter between the rings, is impregnated, the woody fibre remaining unbroken and undisturbed.

Another important advantage in Dr. Boucherie's process, is derived from the simplicity and moderate cost of the apparatus, which, for operations on a small scale, will not exceed £10 or £15, and for a railway of two hundred miles, under £50.

The practical application and entire success of this invention in Europe will be seen by the printed official reports. The first of these was made, by order of the French Government, in the year 1850, the second in 1852, and the third in 1856 : being an abstract from the official jury report of the Exposition Universelle of 1855, whereby it will be seen that the distinguished honor of one of the large gold