

Methods of Preserving Wood:

Botanical Essay.

M.A.L. Oct. 30th, 1886.

Everything is in a state of destruction or of decay. In vegetable as well as in animal life, life itself is generally sufficient to maintain elements against decay; although in time, everything tends to dissolution, if not to permanent destruction.

The cause of decay in any matter is due to the action of organized ferments, fungi or bacteria, therefore in order to preserve wood, it is necessary to so prepare the wood, as to destroy these bacteria ^{and} ~~or~~ fungi. Those methods are the best that accomplish this result most uniformly and effectually throughout the wood.

The methods of preserving wood may be classified under three heads, First By Torrefication, Second, By the pen-

etration of liquids and solids in solution, and Third: By covering the surface of the wood with some mineral matter. The general results aimed at by these three methods, are to make the wood stronger, less combustible, more flexible, less liable to warp, and; in other ways, to increase the value and usefulness of wood.

Under the first head, or Torrefication, we have two processes, ~~which~~ with which we are more or less familiar, First by seasoning the wood, and second by charring the outside surface. Lumber as you all know is seasoned by being subjected to a high temperature, until all the moisture is expelled. It makes the wood less liable to warp or check, and seasoned wood is much easier worked than green wood. All wood is seasoned

that is used where a good, strong, and durable job is necessary.

The preserving qualities of the charring process, are due to the facts, that creosote, one of the best antiseptic agents, is formed in the ^{cells} pores of the wood; and that it prevents injury from gnawing animals. This process of preserving wood, therefore is very valuable in India and other countries, where insects are destructive to wood. It is the most effectual remedy against dry-rot.

Charring is accomplished by slowly scorching the outside of the wood, either by slowly passing a flame over every part, or by passing the wood through a tube, filled with flames. But in whatever way wood is charred, it must first be thoroughly seasoned, or it will only hasten decay. This process is used extensively through out Europe. Posts, that are to be placed in the ground, piles, railroad-ties &c. are generally charred. The piles on which the City

of Venice is built, are all preserved in this way. The Royal William one of the most long-lived ships in the British Navy ~~was~~ had her timbers slightly charred, and France has twenty-one vessels preserved in this ^{manner} same way.

The penetration of liquids and of solids in solution is secured in a number of ways, too numerous for me to mention. By injecting a liquid or a solid in solution, into wood, ^{it} fills the ^{dugs and} pores cells of the wood and so prevents the absorption of moisture while the metallic or non-metallic salts in the substance injected, destroys the bacteria ~~and~~ fungi. In older times oil was injected into wood was considered the best preserving agent and Linseed Oil had the preference. At present common salt is considered about as good as any, and is placed in ships when building, but it is liable to dissolve and thus cause a corrosion of the iron fastenings. Sulphate of iron

or green vitrol tends to increase the durability of wood. In ship-yards, the wood that is not to be used for some time is generally sunk below the surface of the water and in this way they keep out the bacteria and fungi floating around in the air.

The most common method of preserving wood, is, after ^{it is} being seasoned to cover the wood with a coat of paint, or varnish or some other substance. These substances fill the cells of the wood and form a thin coat of hard substance on the surface through which bacteria or fungi can not enter ~~the wood~~. It also keeps out the moisture. It is this process that is applied to all our houses vessels &c. and is found to very effectual in its results.

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