ON ROTTING WOOD.

We condense the following from an interesting lecture recently given by Prof. Wm. H. Brewer, of Yale College, before the New Haven Board of Health:

It is well known that all woods contain certain nitrogenous, organic compounds, known chemically under the general name of *albuminoids*, and that these substances are active in inducing and favoring rot. All chemical methods for the preservation of timber from decay look towards getting this nitrogenous portion into some less soluble condition, or into some combination less liable to chemical change. When green wood is well soaked in cold water, a considerable quantity of such albuminoid matter is dissolved out, remaining in solution in the water. This solution, even when very dilute, is extremely putrescible—more so, indeed, than any person would deem possible, until he had tried the experiment. The fact is as true of the hardest woods, as maple and locust, as it is of soft wood.

To illustrate: If a few pieces of such green wood be carefully freed from bark and all foreign dirt, and put into the purest cold water and let stand at the ordinary temperature of 60° or 70° Fahr., the water soon begins to become turbid or opalescent; this opalescence increases, in two to four days a thin pellicle forms on the surface, active putrefaction sets in, along with an abundant growth of ferments, and the liquid soon becomes peculiarly and pungently stinking. The odor naturally varies with the kind of wood used, but in all cases it is very rank, fully as much so as the same amount of *animal* matter in solution. The intensity and rapidity of putrescence vary, of course, with the temperature, the kind of wood, and the degree of concentration of the solution.

As in the case of other putrefaction, what the gases are which produce the exhalations, we are entirely ignorant. It is probable that they are organic compounds of simpler molecular constitution than the albuminoids which furnished the necessary elements.

If kept long enough, and of sufficient concentration, there is an abundant fungoid growth in the solution, and if kept in the light it grows darker in color, gradually becomes sour to the taste and smell, but continues offensive in odor for a long time; in bottles partly filled, it continues to smell bad for two years. Where the solution is kept in the dark, the odor seems more offensive than if the decay goes on in the light.

In the free air and full sunlight (the condition to which piles and various other wooden structures and vegetable matter in swamps are subjected) along with the putrescence, a white fungus growth begins on the surface of the wood, which rapidly becomes slimy. This forms much more abundantly on the ends of the grain of the wood than on either the radial or tangential sides. If the solution is poured from the wood and kept in a separate vessel, and in the light it grows dark, as already described, but the fungus growth goes on, modified, of course, by the temperature and the degree of concentration, or until the decay has become complete.

If the wood continues to be placed in successive portions of clean water, the soluble matter continues to be extracted for several months, even if the blocks be very small, and the tendency towards putrefaction grows less and less. Finally, however, the soluble matter appears to be removed, the water then remains clear, and the wood ceases to be covered with fungus growth, at least to any visible extent.

Timber, when thoroughly water-seasoned, is known to be very durable, and it is probable that it is so merely because of the removal of the soluble and putrescible albuminoids.

Experiments tried with the same woods in sea water, and in brackish water (made by mixing two measures of fresh water with one of sea water), show similar sanitary results; they are even actually intensified. The turbidity begins sooner in sea water than in fresh; the film on the surface is more abundant, and the smell is more disgusting. Heart-wood and sap-wood act essentially alike in this matter, the difference is one of degree rather than of character.

The suggestiveness of these facts is almost too obvious to need comment, and yet I will add a word. Vast quantities of wood and vegetable matter, decaying in water or in swamps, are too common.

If piles about our wharves and similar structures do not smell so badly, it is merely because the solution is more dilute. The decay goes on, however, and so with vegetable matter decaying in swamps, sawdust in ponds, and so on to the end of a long chapter. The trouble has sometimes been attributed to the obvious gases evolved, notably to light carbureted hydrogen, which one may see bubbling up, with nitrogen and carbonic acid, through the water of ponds, where sawdust, or vegetable matter, is decaying on the bottom. As I have maintained in a paper read at a previous meeting of this association, I cannot believe that either of these latter gases of decay seriously affect health. These latter experiments on woods only confirm the views then expressed.

The exhalations of swamps, or of vegetable matter decaying in still water is universally regarded as unwholesome, in climates where for a part of the year, at least, the wear the is as warm as we have it. So far as I know, there is no exception to this on the whole earth, and hence the general sanitary bearing of the observations here recorded need not be further argued.

Proposed River between Manchester and Liverpool.—A meeting has been held in Manchester for the purpose of considering the expediency of the proposal for the construction of a tidal navigation for seagoing steamers between Manchester and Liverpool. At this meeting Mr. Hamilton Fulton, the engineer, explained the nature of the proposal, and stated that the length of the channel between Manchester and Liverpool would be about 36 miles. The minimum width of the navigation would be 200 feet, and the minimum depth at low water spring tides would be 10 feet, or about two feet more water than exists at low water over the bar at the mouth of the Mersey. A basin would be provided at Manchester end of 81 acres with 16,000 lineal feet of well-constructed wharves, and all requisites for shipping accommodation on a large scale. The estimated cost of the undertaking is £3,500,000. Mr. George Hicks, of Manchester, presented a statement as to the probable revenue, which, if realized, would give a large return upon the proposed outlay. Owing to the inability of several members of Parliament and others to attend, the further consideration of the subject was adjourned.

Chicago's Tunnels.—Chicago is much dissatisfied with the tunnels built under the river which divides that city, with the object of relieving the blockade of vehicles in the streets. When they were built, 12 feet of water was considered enough, but vessels have increased so much in size since Chicago was made a port of entry, that ships and steamers are constantly "bumping" or scraping their keels on the arches of the tunnels aforesaid. The shallowness of the river is so serious a drawback to shippers of grain, coal and lumber, that tearing up and rebuilding the Washington street tunnel is strongly urged. This is a warning to large cities, lest they build streets in such a manner that ships are compelled to sail over the heads of those who frequent the public thoroughfares.

Washing Compound for Clothes.—The German washerwomen use a mixture of two ounces turpentine and one ounce spirits of ammonia well mixed together. This is put into a bucket of warm water, in which one-half pound soap has been dissolved. The clothes are immersed for 24 hours and then washed. The cleansing is said to be greatly quickened, and two or three rinsings in cold water remove the turpentine smell.

THE FEET IN WINTER.

Sometimes in washing the feet in warm water a great deal of scurf or whitish soft substance may be scraped from the soles. This is dead skin, dried perspiration, and other accumulations, all resulting from a want of personal cleanliness. These accumulations occur most in winter, when washing the feet is neither as convenient nor agreeable as in summer time. Many persons suffer from cold feet, simply from a neglect to keep them clean. Few suffer thus in summer time, one reason for which is that the skin is moist, the pores are open, a free evaporation takes place, and the blood is invited to the surface. In winter the skin is dry, harsh and cold. To keep them constantly warm and comfortable is indispensable to good health, and to do this the surface must be brought to the condition of summer—that is, must be soft and somewhat moist, instead of being harsh and dry. This may be soon brought about by soaking the feet in warm water for half an hour at a time daily, using most freely a very stiff brush, with good soap. After the skin has become soft and smooth, a good washing with soap and warm water twice a week during cold weather will greatly contribute to a healthful condition of the feet as well as to personal comfort. If the feet are kept unexceptionably clean, and are nevertheless inclined to be dry, considerable benefit will be derived by rubbing into the soles every morning a little sweet oil, 20 or 30 drops to each sole, with the palm of the hand, patiently and well, the object being to secure by artificial means, that softness and moistness which is known to favor evaporation and invite thither the flow of blood. If in addition, the feet were placed in cold water regularly every morning (when not unwell) not over two inches deep, and remaining in not over half a minute in cold weather, then rubbed briskly dry with a coarse cloth, next with the hands, all followed by a brisk walk or stamping for a minute or two, or until they begin to feel comfortably warm after the cold bath, an improvement in the condition of the feet would be secured in a reasonably short time, which would largely compensate for the trouble taken.—*Hall's Journal of Health.*

Pitting in Small-Pox.—Somebody has ascertained the curious facts, in small-pox, that poor people are pitted least, rich people are pitted most, and no classes are pitted under their dress. Poor people have less light in their homes; the rich have plenty of light, and under the dress there is of course less light than in either case. The explanation according to this observer, is a scientific one. The sunlight consists of three primary colors. The red, the blue and the yellow rays have distinct and characteristic properties: the yellow gives light, the red gives heat, and the blue gives actinism. Now, the pus of variolar pustules absorbs, by its yellow medium, the actinic rays, which results in corrosion of the tender flesh at the base, thus leaving pits.

Importance of Sleep.—A medical man, discoursing upon sleep, makes this remark: "One man may do with a little less sleep than another; but, as a general rule, if you want a clerk, a lieutenant, a lawyer, a physician, a legislator, a judge, a president or a pastor, do not trust your interests to any man who does not take, on the average, eight good, solid hours of sleep out of every twenty-four. Whatever may be his reasons for it, if he does not give himself that, he will snap some time just when you want him to be strong."

To prevent rust from forming in a tea-kettle, keep an oyster shell in the bottom; and when water is wanted, pour off without agitating the vessel. Be careful also not to let the water stand in the vessel when not in use.