

The Nation's Ash Heap

Franklin H. Wentworth, Secretary of the Boston Fire Prevention Association and one of the world authorities on fire prevention gave an interesting address before the Fire Insurance Brokers' Association a few days ago. The meeting which was presided over by Mr. Peter W. A. Burket was very largely attended. Mr. Wentworth stated that last year in Canada and the States \$317,000,000 worth of property was destroyed, the highest figure since 1906 when the San Francisco conflagration took place. He quoted figures to show that over 60 per cent of the fires which occurred were due to carelessness, while faulty building construction, lack of proper inspection and other similar causes made up a very large proportion of the remaining loss. The speaker deplored the lack of interest taken in our fire loss by the ordinary business man. On this continent the ordinary business individual when he reads that a fire has occurred continues to read until he learns that it was insured, then folds up his paper with a satisfied air with the statement that "the property was insured."

"If the loss could be paid for out of the pockets of the inhabitants of Mars or Jupiter there might be reasons for our indifference," continued Mr. Wentworth. "We forget that insurance companies are not philanthropic institutions but that they pass on the losses they sustain to the public. We as individuals pay for the carelessness of our neighbors. The heavy losses of the nation

come out of all the pockets of the people." Continuing, Mr. Wentworth said that in Europe a different attitude was taken regarding the responsibility for fire. There, a man who caused a fire was made to pay for any loss his neighbor sustained unless he could prove that he had taken all necessary precautions to prevent a fire. He suggested changes in our laws which would cause them to be modelled after the European plan. He also recommended the adoption of fire inspection, arguing that fire prevention was less expensive than fire extinction and was of such a nature that it could be readily conducted by the fire department of any city.

Life insurance was on an actuarial basis, and was reasonably secure, but fire insurance was a gamble, always facing the conflagration risk. He pointed out that while many buildings were well erected, the windows and window frames were left in so dangerous a state that a bad fire was invited to spread before the firemen could get to work. He strongly advised the use of metal frames, wired glass windows and iron shutters, which would greatly reduce the liability of fire-spread. He argued that the municipalities should take this up and insist upon such installations, as they would much more than pay for their initial cost.

Another thing Mr. Wentworth emphasized was the danger to congested districts from the encircling ring of residences, with wooden shingles,

which aided in spreading fires, and which he characterized as a city's "funeral pyre." He considered that some action should be taken to see that these shingles were either replaced or so treated that they would not be a menace in case of fire.

As to the increase in fire losses, Mr. Wentworth said it was probably due to the growth of urban centres, and especially the increasing use of gasoline and the manufacture of explosives and other war supplies, so that there was no reason to take a pessimistic view of the situation.

Mr. Groves Smith, of the Canadian Commission of Conservation, also spoke, pointing out that Canada had a fire loss of over \$33,000,000 from some 17,000 fires. He also quoted figures to show that 65 per cent of the total fire loss in Canada had been caused by less than 5 per cent of the fires. He argued that more drastic legislation should be passed for the purpose of punishing the people who are careless in regard to fire.

Another important matter was the matter of insurance agents. Statistics showed that there were 690 insurance agents in Montreal, including 150 professional insurance men who knew their work, and the rest street car conductors, notaries, and all sorts of people who knew nothing about fire insurance, but were willing to take a risk with as little work as possible. This, he argued, should be altered, with provision that every licensed fire insurance agent should know his business, and be in position to see that it was properly carried out.

Vegetable Tanning Materials

Their Formation and Use

The art of converting raw hides and skins into leather is the tanning trade. This conversion is accomplished by the action of certain vegetable or mineral products called tanning-materials. The mineral tanning material is chrome, a product but recently discovered and used. The vegetable tanning materials are many and varied and they have been in use since man became an intelligent animal, although the scientific use of them has but recently been discovered and is not yet completely understood. It is with the latter or vegetable tanning-materials that we are about to deal.

The different vegetable matters that are used for tanning contain a peculiar compound called tannin. This compound occurs in all parts of plants but is most often secreted in that part of the plant least used as a living agent, i.e., the bark of the trunk or root, the husk or rind of the fruit or the heart-wood and sometimes, though not often, in the leaves and roots. This tannin has the property of converting a hide or skin, which will readily decay, into leather, which is proverbially resistant, by combining with the substance of the hide.

A plant is not suitable for use as a tanning agent, however, merely because it contains tannin. There are many other modifying conditions first to be fulfilled to enable it to be made use of. The first and most general condition is that it must contain at least ten per cent of tannin. Then there is a certain non-tannin extractive matter which is useful in "filling" the leather which it must contain. It must be free from undesirable coloring matters and there are also other factors that are taken into consideration. Although the ten per cent tannin qualification is a widespread and important one there are exceptions to it as for example in oak and chestnut-wood. These contain but three or four per cent of tannin and yet they are very widely used. The whole of the soluble matter is extracted in these

instances and concentrated until it becomes solidified and thus an extract containing as much as thirty per cent is secured.

The principal tanning-materials are oak bark, oak wood, galls, valonia, hemlock bark, birch barks, chestnut bark, chestnut wood, willow barks, wattle barks, divi-divi, sumac, canaigre, quebracho, myrabolans, gambier, mangrove bark and mallet bark.

Oak bark was at one time practically the only tanning material used in the United Kingdom for heavy leathers and is still used to a very great extent. The restricting factor of late years has been the lower priced materials of exotic origin in competition with the oak bark tannin which is collected only from felled trees and thus is very limited in quantity. Oak bark is sold in pieces about three feet long called "long rind bark" or in chopped pieces called "hatched bark." The English oak bark contains from twelve to fifteen per cent tannin and is the richest of any. Supplies of oak bark are derived from Belgium, Holland, France and Sweden as well, the best of which comes from Belgium.

Galls are excrescences which appear on the gall oak from punctures produced by the gall insect. They contain from forty to fifty per cent of tannin.

Valonia consists of acorn cups of the valonia oak which are picked by hand when the acorns have fallen and dried in the sun. The valonia oak is widely distributed over Asia Minor and the Balkan Peninsula. This material contains from twenty-five to thirty per cent of tannin and is replacing oak bark in the manufacture of sole leather.

Hemlock bark contains from seven to ten per cent of tannin and gives a reddish leather. This extract is largely used in Canada and the United States where it is produced. It is becoming scarce in the United States, but Canada has a large supply left and exports a considerable amount of

"hemlock extract" to European countries. The Canadian extract contains from twenty-eight to thirty per cent of tannin.

Birch barks produce but a low percentage of tannin and, although used in some countries are not exported. The white birch bark is collected and used in Scotland and in Russia. This bark contains about ten per cent of tannin and a pleasant smelling oil as well which is absorbed by the hide. The fragrant odor of "Russia" leather is due to the presence of this oil. Birch bark produces a soft light-colored leather much used in the manufacture of boot "uppers."

Sumac is the product of the leaves of a shrub cultivated in Sicily and growing wild in Austria and the Balkans. The leaves are dried and ground until a fine powder is produced. It is exported in this form. Sicilian sumac contains from twenty-three to twenty-seven per cent of tannin and is used in the production of soft, light-colored leathers. It has no equal in the production of this kind of leather.

Canaigre is the product of the root of a plant growing wild in Mexico and the southern United States and is now cultivated for its root in those countries. The roots are cut into slices, dried in the sun and made into "canaigre extract" which contains from twenty-six to thirty per cent of tannin. This extract produces a firm, heavy leather of a bright orange color.

Quebracho is the product of a South American tree grown on an enormous scale in the Argentine Republic. The name of the tree is a corruption of the Spanish word for "axe-breaker" and was given the tree in consequence of the exceptional hardness of its wood. The wood contains about twenty per cent of tannin and yields a firm but rather reddish colored leather. It is imported into this country in the form of extract and widely used.

Myrabolans is an Indian tanning material grown especially for export. It consists of the unripe fruits of a tree grown in Madras and the Central Provinces. The fruits, when full grown, but still unripe are collected and dried in the sun.