

most valuable competitors, or even by Douglas fir, which, in this particular district, is only a medium grade timber, the forest will be improved. The great danger from this infestation is not so much the loss of the larch, but the increased fire hazard. Over contiguous areas of a hundred or more square miles the larch forms ten to thirty per cent. of the forest. Should this timber be killed, as appears likely, the danger of destructive fire will be greatly increased, and it will be practically impossible to check a fire which escapes into a forest containing such a large proportion of dead timber.

The appearance of large areas affected by insects, as this one appears to be, suggests that the great fires of the past in the western forests have, perhaps, been fed to the maximum destructive pitch by 'bug-killed' timber.

No remedy for a large scale insect attack has yet appeared possible. Perhaps parasites may be introduced which will hold in check the insects most destructive on yellow pine, white pine and larch, the three western species most affected. If such parasites are not found it is likely that we may look for some seriously destructive beetle attacks. The insects are present, and it only requires a combination of conducive natural conditions to prepare a wholesale devastation of some districts. Their spread is probably encouraged by the absence of birds in British Columbia and the increased number of favorable breeding grounds, which are being provided in the weakened trees of clearing and logging operations.

The study of destructive forest insects by the Entomological Division is welcomed in British Columbia.

### LOWER OTTAWA FOREST PROTECTION.

The Lower Ottawa Forest Protective Association, which was organized last spring, has had a very active season, due to the dry periods of May, July and August. The association employs 49 permanent rangers, four inspectors, and as many temporary labourers as may be required for the control of individual fires. During the dry spell in May more than 500 extra fire fighters were on duty at one time in the employ of the association. Since the organization of the association the area protected by it has been increased by 2,000 square miles, through the accession of new members. The total area now guarded is 11,812 square miles, or upwards of 7,500,000 acres. The association has recently secured convictions against 40 settlers in the Ste. Agathe, Mont Laurier, and Maniwaki districts for setting fires without permits, and it is expected that these convictions will result in greater

care with such fires in the future. In all probability the excellent results secured by the Lower Ottawa and St. Maurice associations will lead to the formation of similar associations in other sections of the country.—Clyde Leavitt in *Conservation*.

### SALT WATER PRESERVES TIMBERS.

*Professor John Macoun's Observations Confirmed.*

In replacing a railroad trestle recently burned along the north shore of Great Salt Lake, engineers have just found that the piles are still perfectly sound, after 43 years of service. Looking for the cause, since these were only of local pine and fir, they found the timbers were impregnated throughout with salt from the lake.

The first transcontinental telegraph line, built before the railroad, extended west from Salt Lake City through the prosperous mining camps of Eureka, Austin and Virginia City. When the railroad was built the telegraph line was transferred to follow its right of way, and the old poles sawed off at the ground. An engineer who recently examined the butts left in the ground in the salt desert near Fish Springs found that, although fifty years had passed since the poles were cut off, the old butts were perfectly sound.

Telephone and electric companies in the Salt Lake Valley have used the local salt for preserving poles. When set up about 75 pounds of salt is placed around the pole on the ground. This method cannot be used, however, when the pole is on or near a lawn, or in any place where vegetation is desired.

It is pointed out that the reason why the waters of Salt Lake act as a strong preservative, as distinguished from ocean waters, is because the lake water is so much saltier, being practically a saturate solution. Preservation with salt is of no use in ocean piling against the attack of teredos and other marine borers.

Experts in the forest service who have been investigating the preservative treatment of timber offer the suggestion that ties and poles which have been immersed for some time in the waters of the lake ought to be impervious to decay if the salt is not leached out by the action of the elements. It has been suggested that this can be guarded against, for example, by painting the butt of the pole with a coat of creosote, which will keep out the moisture and keep in the salt.

In this connection it is interesting to note that for many years Prof. John Macoun, of the Canadian Geological Survey, has advocated this method of preserving timber. In the Summary Report of the Geological Survey for 1908, page