

Conservation

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Controlling Insect Pests of the Forests

Defective Trees Usually Attacked. Proper Slash Disposal Reduces Loss

The bark-beetle constitutes the chief insect enemy of our coniferous forests. Forest fires are spectacular, and the results are immediately and strikingly noticeable, but competent authorities are of the opinion that the annual loss caused by the depredations of this and other forest insects which are widely distributed throughout the country is greater in the aggregate than the loss due to forest fires. The methods to be adopted to control the outbreaks of these serious enemies of our forests depend upon a knowledge of the species of bark-beetles concerned. Different species have different habits, and as control measures are based upon their habits it is necessary for the forester to be able to recognize the various species that are to be found affecting our timber and shade trees. In addition to the more evident outbreaks where large numbers of trees die each year in the infested area, there is a very large and often unrecognized annual loss due to the normal activities of forest insects. Everywhere throughout the forest, injured, withrifty, and over-mature trees are attacked and killed by various species of bark-beetles and wood-borers; and, when large areas are considered, the normal loss from this cause is so very great that it demands serious consideration. When coniferous trees die without any apparent external injury, examination usually shows that their death has been caused or hastened by bark-beetles or other insects. When slashings are allowed to lie, the fresh bark and wood serve as a breeding ground for many destructive insects, and it is, therefore, only to be expected that the annual crop of scattered dying trees will be abnormally large in the neighbourhood of bodies of neglected and rotting slash.

In addition, nearly all these scattered dying trees are completely destroyed by "borers" (boring beetles) during the few years following their death, and they become an absolute nuisance, since, even though the limit is being logged, it is often considered profitable to collect the scattered dying trees. Properly conducted slash burning will almost invariably reduce the amount of this annual loss, and it must be regarded as a most valuable line of insect control.—J. M. Stine, Dominion Entomological Branch.

More Than 2,000,000 H.P. Electric Energy Generated in Canada

Report to be Issued by the Commission of Conservation Gives Complete Analysis of Number of Plants, Sources of Energy and Ownership of Plants

That there is upwards of 2,000,000 horse-power of electrical energy generated in Canada is demonstrated in the report on *Electric Generation and Distribution in Canada* about to be issued by the Commission of Conservation. The investigation into this subject has extended over a number of years and has been a most comprehensive one. Two of the principal points to bring out are the large part water-power plays in the production of electricity and the fact that over three times as much power is produced by privately-owned plants as by those publicly owned.

Water Power Predominates

There are, according to the report, 565 electric generating plants in Canada, with an aggregate capacity of 2,107,743 h.p. These supply 752 distributing systems, which serve 973 localities. Classified according to the prime-movers used, these plants are divided as follows:

270 hydro-electric, aggregating-----	1,806,618 h.p.
201 steam plants, aggregating-----	288,202 h.p.
49 gas plants (nearly all producer-gas), aggregating-----	8,157 h.p.
45 oil or gasoline engine plants, aggregating-----	4,766 h.p.

These figures give a very fair idea of the power situation, and show the unquestionable predominance of water-power. In the Maritime Provinces, steam and water-power predominate with the former in the ascendancy. In Quebec, Ontario and eastern Manitoba, water-power is the dominating source of power, every large centre and most of the smaller ones being supplied by electricity produced from water-power. In the Middle West, large plants are steam operated, while the smaller ones use internal combustion engines. In British Columbia and western Alberta, water-power again predominates, but the generous coal supply in certain districts also permits considerable steam operation.

In the large hydro-electric installations, the report says, the type of plant is of the most up-to-date and substantial construction, but the same, unfortunately, cannot be said of many of the small plants, particularly the older

ones. Old, leaky dams and inefficient types of water-wheels in bad repair are often the real causes of shut-downs attributed to lack of water. Likewise in the large steam plants, efficiency is shown but this is not generally true of the smaller ones. For the prairie provinces where fuel and the cost of generation are high in price, the report suggests that it would be more economical to generate electric power in large central steam plants and distribute it over transmission lines.

More Privately-Owned Plants

The report shows that there are 207 municipal or publicly-owned plants of (Continued on page 6)

Immigrants Should Receive Assistance

What Intelligent Guidance of Intending Settlers Has Done in Wisconsin

If there is any one case in which the purchaser alone and unaided frequently is unable to pass judgment, it is in the case of the buyer of land. Very often, indeed, the purchaser is well qualified and neither asks nor requires any assistance in buying land. This would hold particularly with respect to old settled sections. But the cases where the purchaser cannot safely follow his own judgment are so numerous as to have great social significance. If land is not wisely selected, there is waste of labour power and of capital, and a serious public interest is involved. California affords conspicuous illustration of the difficulties of wise selection of land, and especially so in the case of land used for raising fruit. One piece of land may be highly productive and planted with citrus fruits, and another piece a few rods off, looking much like the first land, may be far inferior. Pieces of swamp lands in Wisconsin which superficially look alike differ widely in regard to present fertility and lasting qualities.

There is a public recognition of the needs of assistance in the selection and cultivation of lands in the soil surveys undertaken at the expense of the federal government and of the states, but these do not give the settler all the help he requires. Probably in north-

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Selecting Varieties For Spring Sowing

It Pays to Sow Varieties of Grain of Proved Excellence. Seed Should be Prepared in Good Time

Now is the time to prepare the supply of seed for the spring sowing. If known and suitable sorts are now being grown on the farm, it is a matter of thorough cleaning and grading the seed in readiness for the spring drive. This is a job which should be given attention now while you can wear a coat and not left until spring when there may not be time to do it properly or, as often happens, it may not be done at all.

Many farmers do not know what variety they are sowing. It makes an astonishing difference in farm profits whether you are sowing a variety suitable to your farm or not. If you do not know what you are sowing, you had better secure a few bushels of some variety that has proved its worth either at Guelph College, or at the Central Experimental Farm, Ottawa.

It is a matter of indifference whether the same variety stands at the top at both places. In oats, the "O.A.C. 72" has given good results at Guelph, while the Banner is recommended at Ottawa. In barley, the "O.A.C. 21" is giving splendid satisfaction at Guelph and elsewhere. The leading variety at either place is likely to be much better for you than the unknown or mixed sort you may be sowing. If you have to buy, it might be well for you to consider a change which has been made in the regulations of C.S.G.A. to encourage purchasers of registered seed. The following paragraph is taken from a circular issued by the C.S.G.A.:

"Grain harvested from a crop grown from Registered Seed may in turn be registered providing it is up to standard, is not more than three generations removed from 'Elite Stock Seed' and that it has been properly inspected both while growing and while in the sack prior to shipping. Since registered seed brings more per bushel than does ordinary seed, the financial advantage which may be realized from sowing this kind of seed is obvious."

It is immensely worth while to you to sow clean and well graded seed of varieties of proved excellence. Act now, and know what you sow.

—F. C. N.

Canada collects a revenue of about \$6,000,000 every year from her forests. Of this sum, the forests of British Columbia contribute one-third.