Value of Aircraft for Forest Patrols

Experience of Past Season Proves that Improved Methods of Conservation are still Necessary

One direction in which forest protection will probably be improved is through the use of aircraft. During the past season, an experiment along this line has been maintained by the St. Maurice Forest Protective Association, in co-operation with the Quebec Government, using seaplanes loaned by the Royal Canadian Naval Air Service. Similarly, in the Northwestern states, forest patrols by aircraft have been maintained, through co-operation of the U.S. War Department with the National Forest service.

While these experiments have not yet produced absolutely conclusive results, they at least indicate clearly that aircraft will have an important place in forest protection in the future, provided the question of expense can be met. One point seems very clear, and that is that no matter what the cost may be, within reason, it will be much less than the average annual loss sustained by forest fires. In the United States, the proposal is that the Federal Government adopt definitely the policy of full co-operation with state and private forest protective agencies. It being assumed that a National Air Service is to be maintained in any event, assignment to forest patrol would constitute an extremely useful activity when personnel and equipment are not needed for national defense. Under such an arrangement, with the Federal Government assisting through the assignment of aircraft and aviators, the additional cost for an effective aerial patrol could be brought well within reason. Existing agencies can well afford to incur more expense in forest protection than they are now doing, provided the results are commensurate with the increased costs, and that this would be the case with aerial patrol now seems reasonably well established. It is probable that smaller machines than those thus far used for this purpose would prove preferable, because much cheaper in first cost as well as in maintenance and operation. Full co-ordination between the air force and the ground staff would of course be a prime essential. Look-out towers have many times proved their value in the detection of fires; an aeroplane or seaplane would take the place of many such towers.

The systematic mapping of the country, by aerial photography, is another closely related activity, the possibilities of which are receiving consideration in both Canada and the United States. In Canada, it is receiving the attention of the Royal Canadian Naval Air Service, the Geodetic Survey and the Geological Survey. The St. Maurice Forest Protective Association, using the machines loaned by the Naval Air Service, and with the co-operation of the Geological Survey, is now experimenting along this line.—*Clyde Leavitt.*

AN EXPENSIVE LUXURY

Do You Require 20 Times Your Weight of Water per Day?

In Montreal, the daily quantity of water consumed weighs 12 times as much as the entire population of the city. In other words, every individual may be said to consume 12 times his own weight of water. In Toronto, the weight of water consumed is 10 times that of its population; in Hamilton, 13 times; in Ottawa, 17 times; in Quebec, 15 times; in Halifax, 17 times; in St. John, 21 times.

As a contrast with the above figures, the daily weight of water used in Winnipeg is less than 5 times that of its population; in Brandon, 7 times; in Regina, 4 times; in Saskatoon, 6 times and in Moose Jaw, nearly 5 times.

One of the commonest causes of over-consumption is the policy adopted by our eastern cities of supplying water on the flat rate with absolutely no control of the individual consumption or waste. In the Prairie Provinces, on the other hand, we find a much lower consumption which, of course, is due to the fact that, in that section, the charges are usually made on the meter basis.—*L. G. Denis.*

Canning and Drying with Electricity

Electric Ovens and Fireless Cookers Prove Economical

Experiments have recently been carried out by the United States Department of Agriculture to ascertain the best methods of using electricity in the home for preserving, canning and drying fruit and vegetables.

By using the hot plate of an electric range in exactly the same way as a coal or gas stove an excellent product was obtained but the cost was too high. A second series of tests was made, in which the oven of the electric range was used, thus obtaining the sterilization temperature by baking instead of boiling. The water bath was omitted and the cans were placed on a rack in the oven. By these means a reduction in the cost was effected.

The electric fireless cooker proved the most efficient method of all, the cost being only one half that of the oven method. When employing this apparatus, the material is blanched and packed as usual, the jars are placed in the cooker and the electricity is turned on full strength until the thermometer registers 180 deg. The switch may then be turned down to the lowest heat, as 40 watts has been found sufficient to keep the jars at the sterilizing temperature.

The reason for the much more economical operation of electric ovens and fireless cookers is to be found in the fact that the source of heat and the articles being cooked can be enclosed together in an air-tight space, while with fuel ranges a large amount of heat is unavoidably lost into the air.

Drying of vegetables was also tried, using first the oven of an electric range, then a combination of range and electric fan and, finally, the fan alone. The cheapest way is to make use of the residual heat left in the oven following some cooking operation. This is sufficient to start the drying process, then, when the oven is nearly cool, the door is opened and an ordinary electric fan is placed near by. This soon finishes the drying process and also prevents the oven from rusting.—*L. G. Denis.*

French Legislation Aids Water Powers

Coal Scarcity in France Leads to Vigorous Policy of Hydro-electric Development

Long before the war, the French Government realized the great value of water-power resources and undertook a thorough investigation of the 'white coal' of that country. War conditions had the effect of further accentuating the importance of water-powers to the nation. Several large hydro-electric developments were rushed to completion and proved invaluable in assisting war production.

The proposed new French law respecting new or dormant water-power possibilities is of interest as it shows that the measures now in force in Canada are far from being too drastic in maintaining public control over the utilization of our water-powers. This is especially the case because in Canada hydro-electric power is essential to the full development of some of our other valuable resources.

The new French law provides the same treatment for all water-powers, including power from tides, and the importance of the purpose for which the power is to be used is the primary consideration in determining the relation between private rights and public authority. As compared with the old law, the water-power lessees on state-owned streams are given additional facilities in return for the rentals paid to the public treasury. Private streams are subjected to state authority so far as power utilization is concerned and the lessees are given certain rights in derogation of the privileges of riparian owners. The law applies to water-power utilization of 500 k.w. and over, the leases being for a period of 75 years, the works and buildings becoming state property at the end of said period on payment of adequate compensation.

In support of the new Act, it was urged that, owing to the serious shortage of coal in France, nothing should be left undone to secure the maximum amount of power from streams. In the coalless provinces of Ontario and Quebec the displacement by hydro-electric energy of coal imported from the United States reduces the unfavourable balance of trade which is so heavily against us.—*L. G. Denis.*

Lumbermen Favour Survey of Forest

Pledge Support to Commission Conservation in Taking Inventory of Timber Resources

The Canadian Lumbermen's Association represents one of Canada's greatest primary industries—an industry directly dependent upon the exploitation of a natural resource. As a business organization it clearly recognizes that permanent prosperity is bound up with an administrative policy that will ensure continuous production of raw material on our forest areas. One of the first essential steps is to ascertain as definitely as possible the extent and character of our existing timber stand. At its last annual meeting, therefore, the Association passed the following resolution extending its strongest approval and support of the forest survey now being conducted by the Conservation Commission.

Whereas an accurate survey of all standing timber in Canada, showing the various kinds of lumber, the quality, location and accessibility, together with available means of transporting same to the nearest market, also a report of all cut-over lands which are suitable only for forest growth, with the extent and location of same, would be most valuable information, not only to lumber operators, but to the various Dominion and Provincial governments, thus enabling said governments to develop to the fullest extent a permanent forest policy which would have the effect of conserving the great natural resources contained in Canada's forests;

Be it therefore resolved: That the Canadian Lumbermen's Association assembled in St. John, N.B., at its eleventh Annual Convention urge upon the proper governmental authorities to provide adequate financial assistance, and clothe the Commission of Conservation with the necessary authority, for the purpose of accomplishing the end in view.

The greatest factor in the adoption of practical conservation methods is to have the unqualified support of public opinion. It is extremely encouraging to know that the business interests engaged in the exploitation of Canadian forests are not desirous that either governmental or commercial policies should be of a hand-to-mouth character. Our forest areas must be kept productive in perpetuity.