

The most important improvement in forest fire-fighting equipment has been the portable gasoline pump. These pumps, which each weigh from 45 to a little over 100 pounds, can be carried to a fire by canoe, motor boat, automobile, aircraft, pack saddle or back pack. They can deliver efficient water pressure as far as seven thousand feet from a water supply and, when used in relays, at a much greater distance. Smaller hand pumps are also used effectively in many cases.

In addition to these improved measures, the enactment of legislation has tended to reduce the fire menace. The establishment of closed seasons for brush burning, and seasons during which permits are required for setting out fires and for travel in the forest during dangerous dry periods, have been of enormous value as preventive measures.

Since its beginning in 1900, the Canadian Forestry Association has played an important part in securing popular co-operation in reducing the fire hazard. By means of its attractive magazine, which has a circulation of over 16,000, by railway lecture cars and motor trucks provided with motion picture equipment, and by co-operation with radio broadcasting stations and the press, the Association reaches a large proportion of the population of the Dominion. Special efforts are made through the schools, by specially appointed junior forest wardens and other means, to educate the younger generation as to the value of the forests, the devastation caused by fire and the means of preventing such destruction.

Prepared lectures illustrated by slides and films are distributed to volunteer lecturers and other educational work is carried on in schools and at public meetings. The various governmental forest authorities also carry on forest conservation publicity work independently and in co-operation with the Canadian Forestry Association.

Another interesting development in forest protection has been the establishment of special meteorological stations for the study of the effects of weather conditions on the fire hazard, and the broadcasting of special forecasts of hazardous fire weather.

### Subsection 3.—Scientific Forestry.

Up to the present, the practice of forestry in Canada has consisted chiefly in the administration and protection of existing forest areas. About 35 square miles is now being planted out annually, largely in connection with farmers' woodlots, shelter belts, and reclamation work, while several commercial reforestation projects have been carried on by paper companies and by the Ontario Government on denuded Crown lands. The great forestry problem in Canada, however, is the management of Crown forests, first under provisional and later more intensive working plans, so as to ensure a sustained yield. To this end, forest research activities are now assuming great importance. Silvicultural investigations are receiving marked attention both from the Dominion services and some of the provincial services.

About 250 technical foresters find employment either under the Dominion and provincial forest services or with paper and lumber companies. In addition to administrative work, these men carry on forest surveys either for the estimation of timber stands and making of maps, or to determine natural growth and repro-