

over 100 pounds, can be carried to a fire by car, canoe, motor boat, automobile, aircraft, pack saddle or back pack. They can deliver efficient water pressure up to 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, legislation has also 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.

None of these measures would be effective without the support of the general public, and in 1900 the Canadian Forestry Association was founded, its chief object being the securing of popular co-operation in reducing the forest fire hazard. This Association now has a membership of 32,000 and an income of \$136,000, mostly secured by voluntary private subscription. Fifteen of the Association's paid lecturers tour the country, using special railway lecture cars and motor trucks equipped with self-contained motion picture equipment, showing special films taken by the Association. Two high class sporting and outdoor magazines, one in French and one in English, are published monthly by the Association as educational media. 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 different Dominion and provincial forest authorities also carry on extensive publicity work independently and in co-operation with the Canadian Forestry Association.

Another interesting development in forest protection has been the establishing 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. Some 35 square miles is now being planted out annually, largely in connection with farmers' woodlots, shelter belts, and reclamation work, although several commercial reforestation projects are being 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 service and some of the provincial services.

Some 200 technical foresters find employment either under the Dominion and provincial forest services or in many of the paper and lumber companies. In addition to administrative work, these men carry on forest surveys either for the estimating of timber stands and making of maps, or to determine natural growth and reproduction conditions and factors. They also direct any planting or nursery work and the regulation of commercial logging operations along forestry lines.