

The simplest form of patrol is carried on by men, generally travelling in pairs, on foot, on horseback or in canoes. The fire protective systems in use throughout Canada have been improved by the following measures:—the extension of roads, trails and portages; the building of telephone lines throughout the forest; the establishment of lookout towers and stations; the use of air craft for detecting and reporting incipient fires and carrying men and supplies to fires already started; patrol by automobiles, boats and railway speeders; maintenance at strategic points of cabins for accommodation of patrolmen and supplies for fire-fighting; the use of portable forest fire pumps and the establishment of fire lanes and cleared fire guards through the forest and around fire hazards. In addition to these, certain legislative enactments have tended to reduce the fire menace. The establishment of closed seasons for brush-burning by settlers during the dangerous dry periods has proved efficacious, and the recently enacted laws for Quebec and New Brunswick, whereby all travelling in the woods during the fire season is regulated and restricted, have been of enormous value as preventive measures. Wireless telephones are now being employed; the practice of fire weather forecasting and the use of special hat lights for night fire fighting have also been introduced by the Dominion Service.

### 3.—Scientific Forestry.

The practice of forestry in Canada has consisted chiefly in the administration of existing forest areas. What little reforestation or afforestation has been done has been largely in connection with farmers' woodlots, shelter belts and reclamation or soil fixation, although some commercial reforestation has been undertaken by pulp companies. During recent years investigatory or forest research work has assumed considerable importance. The object of this work is to secure an inventory of Canada's timber resources, to ascertain the best methods of securing continuous production of desirable species by natural means and the economic possibilities of establishing forest by artificial means. In addition to silvicultural research, investigations are being carried on for the purpose of determining the best methods of forest utilization or the converting of standing timber into saleable commodities.

Technical foresters are employed by the Dominion and Provincial Forest Services and by many pulp and lumber companies. In addition to administrative work, these men carry on forest reconnaissance and intensive forest surveys for the purpose of estimating and mapping standing timber and determining conditions affecting growth and reproduction of existing forests. They also direct experimental planting and experimental regulation of commercial logging operations. The Dominion Forest Service employs a special staff for forest investigatory work, and has established experimental forest stations at Petawawa, Ontario, and at other points throughout the Dominion. The work is done in co-operation with the provincial services and with pulp and lumber companies, and is also conducted on Dominion forest reserves. The forest products laboratories, established by the Dominion Forestry Branch in connection with McGill University, at Montreal, and the University of British Columbia, at Vancouver, carry on investigatory work in forest products, covering the strength, durability and other mechanical, physical and chemical qualities of Canadian woods, methods of seasoning, preservation from decay, and chemical utilization in the pulp and paper and wood-distillation industries. The province of Quebec is organizing, under the Provincial Forester, a Bureau of Forest Research, supported by a generous annual appropriation. Much credit is due to the forestry departments of some of the pulp companies in Canada for pioneering work in forest research.