the consumption trend for wood is upward, the costs of wood at the mills have also been increasing and this has led to increased mechanization and, in turn, to entirely new technologies of logging and product transfers. These changes have put pressure on the traditional methods of wood measurement, and the Department has adopted or is further testing alternative practices including (1) tree length scaling, (2) weight scaling, (3) sample scaling, (4) measurement of log diameters to the full inch, and (5) log grading. In addition, the data and the invoicing of licensees are being computerized.

Certain parts of the Crown forests remain under-developed. For such areas, the Economics Unit has undertaken feasibility studies and has had a principal role in getting new firms to establish. Other functions of the Unit include co-operation in expanding the available statistical information for the forestry sector, development of economic guides for timber management, analysis of current manufacturing costs and market prices, evaluation of the impact of policy decision and economic services to other Branches.

Protection.—The area under organized forest protection in Ontario totals 179,900 sq. miles and includes the main central band of accessible forests. This area is organized into 21 fire districts and further subdivided into 54 chief ranger divisions for the purpose of forest protection. South of this area, in the highly developed agricultural counties of southern Ontario, the municipalities are responsible for fire control; the vast inaccessible areas to the north of the fire districts, totalling some 147,000 sq. miles, do not support significant stands of merchantable timber and, except for communities or other special values, are not protected. Within the five districts, agreements were in effect in 1966 with 214 municipalities and 234 timber licensees for the prevention and control of forest fires. An agreement was also in effect with the Federal Government for the protection by the Ontario Department of Lands and Forests of 873,000 acres of Indian lands in the province. The average annual number of fires for the 1957-66 period was 1,489 and the average annual burn was 143,708 acres.

Forest fire detection is accomplished through a combined lookout-tower and aerial patrol system as well as reports from the public. During 1966 an experimental sferics-radar system was used to plot lightning storm movement in northwestern Ontario with the objective of delineating areas requiring intensified detection for lightning fire coverage. Also, 300 northern Ontario Indians were recruited and trained to provide a readily available body of skilled forest fire fighters at various key centres. Prescribed burning for hazard reduction and site preparation purposes was carried out on 21 burns covering 4,535 acres. The new water-bombing system, utilizing the interior of aircraft floats to carry the water load, was applied on 135 fires. At the end of the year, the fleet consisted of 29 Beavers, 10 Otters, one Twin Otter and one Super Widgeon; five helicopters were leased during the fire season. The communications system included 320 ground stations, 352 lookout-tower radios, 15 patrol vessel radiotelephones, 579 mobile radiotelephones, 1,218 portable fireline radios, 41 aircraft radio installations and 60 portable aircraft radiotelephones.

Forest pest control was carried out on about 11,500 acres of Crown-owned or Crown-managed forest lands in 1966. The main effort was concentrated on the white pine weevil, the European pine sawfly, the white pine blister rust and the fomes root rot. To provide additional skilled labour for removal of diseased elm trees, the Department initiated and co-ordinated an interdepartmental project to train 55 young Indian men for this work.

Manitoba.—The administration of Manitoba forests is controlled by the Forestry Branch of the Department of Mines and Natural Resources. The Province is divided into four regions, each under a Regional Director who is responsible for the field administration of forests in his region. The Regional Director works under policy guidelines established by the Forestry Branch, relating to timber disposal reforestation and fire protection.

The Forestry Branch co-ordinates control measures for the propagation, improvement and management of the forests, the harvest of forest products, and forest inventory surveys. Two nursery stations are maintained to supply stock for reforestation of denuded Crown