

Management.—The original function of the Timber Branch was to arrange for the orderly sale of timber and this important function is still carried out along traditional lines—operators are granted a licence to cut specified timber for which they pay stumpage at contractual rates on the measurement (scale) of products removed. However, the details and techniques of utilization are undergoing constant improvement. Although Ontario's forest-based industries have long been a Canadian leader in terms of diversity of products and value of shipments, there is still a surplus of timber over actual cutting in the province. To ensure the continuing supply of timber of the type required by industry, an effective management policy has been conceived. Continuing forest inventories, using aerial photographic methods in which the province pioneered, provide an up-to-date record of the forest wealth, showing the species and other characteristics of stands and their geographical distribution. Inventory data are then applied to management planning; the province has been divided into 205 management units, each homogeneous with respect to forest and use patterns. Long-term plans set out regulations on the volume and location of cuttings and include programs for regeneration and tending that will sustain yields. As of 1967, 149 plans (71 Crown, 52 company, and 26 agreement forest) were completed for approximately 155,000 sq. miles.

The Timber Branch is also responsible for the maintenance and improvement of forest production on Crown lands. It operates 10 forest tree nurseries (with their supporting tree seed collection, treatment, and storage plant), currently geared for an annual output of 60,000,000 units. In addition to plantings by Departmental staff, regeneration agreements have been signed with all major licensees under the terms of which they assume responsibility for the conduct of projects, receiving payment at an agreed rate for work completed. Other annual silvicultural measures include the direct seeding of 9,000 acres, scarification and other treatment for natural regeneration on 20,300 acres, and stand improvement treatment (cleaning, thinning, pruning, etc.) on 47,200 acres.

Over the past few years, the Research Branch has been developing a "tubeling" approach to planting, as a conventional planting substitute possessing greater flexibility both in nursery production and in length of planting period per year, so that unforeseen conditions, such as large burns, can be stocked promptly. Briefly, the procedure is to place 200 open-end, split plastic tubes (about $\frac{1}{2}$ " \times 3") in a tray, add soil, seed and covering material, and germinate in portable plastic-covered greenhouses. The tubes and seedlings can be inserted intact into the ground at a rate of about 250 per man-hour. The technique was made operational in 1966 and 17,000,000 tubelings of various species were planted. During 1967 the objective was the planting of 25,000,000 tubelings.

For half a century, Ontario has had enabling legislation that permits municipalities to place abandoned and submarginal agricultural lands, to which they have acquired title, under agreement with the Department of Lands and Forests, which undertakes to plant and manage the properties for a specified period of time—usually 50 years. Nearly 200,000 acres currently under such agreements have been managed intensively, the plantations receiving regular thinnings. The trees removed are in demand for pulpwood, posts, poles and sawlogs, making the undertakings financially attractive. In addition, the properties that are close to centres of population are acquiring tremendous value as recreational areas.

Owners of private land may purchase planting stock for forestry purposes from government nurseries at nominal prices and may also receive free professional advice on any forestry matter, including silviculture, harvesting and marketing. Under the Woodlands Improvement Act, 1966, it is possible to have planting and improvement work carried out completely under government direction and mainly at its expense. In return, the owner is required to meet a few modest demands that ensure his good faith.

In Ontario, the utilization of timber crops, the processing of forest products and the distribution of commodities of wood to markets are functions of private enterprise. Primary mills licensed in 1966 and supplied principally from provincial forests include 26 pulp and paper mills, 28 veneer and plywood mills and 890 sawmills of all types. Although