

trout and certain warm water species into areas where preliminary study seems to indicate that the environment was suitable. To a large extent the indiscriminate planting of fish has been discontinued. A fish hatchery is operated at Fort Qu'Appelle for the hatching-out of pickerel, rainbow, brown and lake trout, and two experimental ponds have been built. The purpose of these ponds is to study, under controlled conditions, the introduction of warm-water species from the United States. An experimental hatchery has been established at Lac la Ronge, where Arctic grayling and lake trout eggs have been hatched. An Arctic grayling spawn-camp has also been established in the Fond-du-Lac River, near Black Lake and a pickerel spawn-camp is located on the Montreal River, near Lac la Ronge.

The management of the provincial water areas has been placed on a scientific basis. In 1947 a large-scale biological program was undertaken and more than 100 water areas have since been studied. The main emphasis has been on the study of productivity of the various water areas as well as the inter-relationship of the species and life histories. In so far as known facts will permit, the management of the various lakes has been placed on a sustained-yield basis. Experiments are in progress on the introduction of non-native species into suitable water areas. Where sport-fishing pressure has increased, such as on Lac la Ronge, Last Mountain Lake and Amisk Lake, a creel census has been established and the annual harvest is recorded. A Fisheries Laboratory was established in 1949 at the University of Saskatchewan and a permanent biologist was added to the staff. Approximately 12 graduate and undergraduate biological students of the University are employed each summer on biological surveys.

Progress has also been made on technological research. At Prince Albert a pilot plant was established where experimental smoking and canning is conducted. As a result of this research work, the sales of smoked fish in the Province has increased very considerably. A Research Committee was established at the University of Saskatchewan to study certain aspects of the canning of inland fish, particularly the problem of the muddy flavour which appears to be present in the summer-caught fish from Last Mountain and Primrose Lakes.

The Fisheries Branch has conducted a program of education designed to acquaint people of the Province with the importance of scientific research and the necessity of certain regulations governing the administration of fisheries. Under the scientific program, three 16 mm. colour and sound films have been made on sport fishing during the past three years.

**Alberta.**—Commercial and game fishing are administered by the Fisheries Branch of the Department of Lands and Forests.

Regulations under the Fishery Act (Alberta) designed for improvement in the packing, handling, processing, storage and quality of commercial fish have been well received and supported by the Alberta industry. In line with a policy for producing good-quality fish, lakes in which whitefish are infected with the pike tapeworm and do not meet the quality standard have been closed to commercial fishing.

Biological surveys of many lakes and streams over the past ten years have provided an opportunity to observe the result of past management policies. It was found that the classical tenets of trout-stream management, including close seasons, legal minimum, feeder stream closure, and hatchery plants, were inadequate or incorrect. A new management plan featuring the 'following' of smaller tributary