SPECIAL REPORTS.

No. I.—ON THE USE OF SEINES IN INLAND WATERS.

By Professor Prince, Commissioner of Fisheries.

Among many measures that have been taken for the preservation of the fish wealth of our inland lakes and rivers, the establishment of close seasons, affording protection to breeding fish, the liberal stocking of waters with fry from the Government hatcheries, and the regulation of modes of fishing by mesh restrictions and the like, have proved of direct and substantial benefit. Without such regulations our vast fresh water fisheries would already have been wholly depleted. Canadian fishermen on the lakes readily recognize the value and utility of the fishery laws of the Dominion, and an eminent United States authority* testified not long ago to "the greater prolificness of the Canadian waters at the present time in whitefish and trout" when comparing the north and south shores of Lake Ontario.

It cannot be denied that measures still remain to be taken to further aid in the recuperation of our fisheries. While protecting full grown fish when about to spawn it is forgotten that protection, too, is necessary for the fry, when newly hatched and during the first months of their existence. The destruction of very young and immature fish which were of little or no value to the fishermen, is a source of danger.

The fact needs no demonstration that our fisheries really ultimately depend upon the welfare and abundance of young fish. Anything detrimental to them in their early and defenceless stages affects injuriously the fisheries as a whole. If the young be injured or destroyed the supply of adult fish in the future will diminish or cease. Artificial fish-culture, moreover, being carried on upon an extensive scale and vast quantities of young fry deposited annually, these cannot adequately benefit the fisheries if the liberated schools are disturbed or devastated. Scientific observation has shown that the minute and defenceless fry of the greater number of valuable fishes, fresh-water and marine, resort to comparatively shallow water during the first months of their existence. The surface of the sea in certain areas has been found to be alive with swarms of delicate young fish, and the shallow waters in our lakes and rivers are the favourite haunt of multitudes of young. This is so for many reasons. The light and warmth necessary for rapid growth are furnished there. At greater depths the water is cold and comparatively dark. Further, safety from the attacks of larger fish is better secured than in deeper water. Some fish are found to prefer shingly beaches, where pebbles abound, affording crevices for shelter when danger is near; others choose a smooth sandy bottom, especially in sheltered bays and creeks, over which they roam in search for minute food, chiefly infusorians, minute crustaceans, molluscs, &c. The schools of diminutive fish in such regions are of the most varied character including worthless as well as valuable species. A fine-meshed naturalist's seine, used in Lake Erie, captured in one haul, very small bass, lake herring, pike-perch or pickerel, and various kinds of suckers and shiners. At certain seasons the shores swarm with small lake herring in the post-larval stage, somewhat larger and more active than the delicate and helpless larval stage. Fishery Overseer Boismier (Detroit River Division) refers* to the abundance of young fish in the shallows of Detroit River and Lake St. Clair. "It is stated," he says, "that millions of young fish are destroyed by parties seining for minnows in shallow bays." It is also said that

*Dr. Hugh M. Smith, Bull. U. S. Fish Commission, 1890 p. 185.
*Report of the Department 1896, App. G., p. 191.