

of the nation's losses in the same manner, and from the same causes as the public notifications of more than a thousand wrecks in the year testify. Is it not a duty then to endeavor, by such means as science puts into our hands, to lessen the number of such calamities, and shall we not unite our efforts with those of the public-spirited American who gives us the aid of his abilities and his immense experience in the laudable enterprise.—*Ohio Farmer*.

II. Papers on Natural History.

1. SCHOOL BOYS AND BIRDS IN AUSTRALIA.

The Board of Education for Victoria, in their annual report to the Governor, for 1861-62, thus refers to the discouragement which they have given to the school boys' cruel habit of destroying birds: "Considerable mischief having been caused by the wilful destruction of birds and plants by children, we have issued a circular calling the attention of teachers to the subject; and in the case of our model schools, we have directed that the masters shall frequently assemble the children, for the purpose of pointing out to them the wrongfulness of such conduct; and we have further ordered, that any boy so offending shall be expelled from the school."

2. LECTURE ON THE UTILITY OF BIRDS.

Mr. A. Rimmel delivered a lecture in the Lecture Room of the Natural History Society of Montreal, on the 13th of February, 1863, on "The Utility of Birds to Agriculture, and the desirability of endeavoring to prevent their destruction on the Island of Montreal." The lecturer commenced by reading a portion of documents issued by the Minister of the Interior for France, in favor of the preservation of birds inimical to the insects destructive to the field, orchard and forests. The larvæ of the beetle were injurious to plant life, as they eat all day and night, consuming twice their own size in a day. The usefulness of the lady-bird was next touched upon in reference to its destruction of plant lice, and service in the green-house. After giving a brief account of some of the calamities produced by the ravages of caterpillars in the Old World, the lecturer declared that America had suffered from the destructiveness of insects as much as any country. The winter here was favorable to their life, the weevil and other insects taking shelter in the earth from birds which were always too few in spring for the multitudes of the former. The damage done by the caterpillar on the Island of Montreal was immense; it formed upon trees a small ring, every one of which contained 300 caterpillars. He (the speaker) had counted upon one tree 100 rings, which would give 30,000 insects. The driving away of birds had in many instances been productive of ruin to fields and orchards which were then swarmed with insects. The robin was a most useful bird in England, on account of the number of insects it destroyed. A weevil would deposit 70 to 90 eggs in a grain of corn, and one weevil would destroy a whole ear, so that 3,300 grains of corn might be saved in one day by one bird. The crow had been looked upon as an enemy of grain, but it was known that its search was for the larvæ of the wireworm and such other pests. The lecturer next spoke of the value of the fly-catcher and wood-pecker, which was an enemy to the small green caterpillar that infested the currant bushes. Last season was very destructive to the apple trees around Montreal, and he had no hesitation in saying the absence of birds was the principal cause. All the trees on the outside of his (the lecturer's) orchard had been destroyed by caterpillars, which came over in one night. The owl and Canada robin were very useful birds, and should not be exterminated. The wholesale destruction of birds on the Island of Montreal was strongly condemned, as it precluded the hope of ever getting rid of insects. Every morning guns might be heard firing, at the Mountain, and although it was said birds were not in all cases killed, yet it was worse to scare them, as the noise drove away others. The lecturer concluded an instructive lecture by suggesting that the Mountain be taken within the city limits, and that the present law against using firearms in this city be enforced. This he had no doubt, would be the best means of preventing the mischievous and wanton destruction of our feathered benefactors.

3. PROTECTION OF INSECTIVOROUS AND OTHER BIRDS, BENEFICIAL TO AGRICULTURE.

Mr. Joly has introduced the following excellent Bill into the House of Assembly. We sincerely hope it will pass—and if passed, enforced. The Hon. Mr. Portman introduced a bill of similar tendency last year. (See *Journal of Education* for August, 1862, page 119.)

Whereas, the destruction of insectivorous birds is prejudicial to agriculture, and the killing and capture of singing and other small birds is an useless and cruel practice; Therefore, Her Majesty, &c., enacts as follows:

1. It shall not be lawful to shoot, destroy, kill, wound or injure, or to attempt to shoot, destroy, kill wound or injure, any kind of bird whatsoever, save and except eagles, falcons, hawks, wild pigeons, ortelans, snow birds and king fishers,—between the first day of March and the first day of August in any year.

2. It shall not be lawful to take, capture, buy, sell, expose for sale or have in possession, any kind of bird whatsoever, save and except the kinds above excepted; or to set either wholly or in part, any net, trap, spring, snare, cage, or other machine or engine, by which any kind of bird whatsoever, save and except the kinds above excepted, might be killed or captured, between the first day of March and the first day of August in any year.

3. It shall not be lawful to take, injure, destroy, or have in possession, any nest, young, or egg of any kind of bird whatsoever, except of eagles, hawks, falcons, and kingfishers, between the said first day of March and the said first day of August in any year.

4. The violation of any provision of this Act shall subject the offender to the payment of a penalty of not less than one dollar and not more than ten dollars, to be recovered in a summary manner by summons before one Justice of the Peace, who shall award the penalty, the offender may be condemned to pay the prosecutor, with all fees and costs incurred; and in default of immediate payment thereof, the offender shall be forthwith imprisoned in the nearest common jail, for a period not less than two and not more than twenty days at the discretion of such Justice.

5. Any person may seize on view any bird unlawfully possessed, and carry the same before any Justice of the Peace to be by him confiscated; and every person is authorized to destroy all nets, traps, snares, cages, or other machines or engines, set wholly or in part, whereby any kind of bird whatsoever, save and except the kinds above excepted in the first section of this Act, might be unlawfully killed or captured.

6. No conviction shall be annulled or vacated for any defect in the form thereof or for any omission or informality in any summons or other proceedings under this Act, so long as no substantial injustice results therefrom.

7. The present Act, and all its provisions shall be so construed as not to annul or vacate any provision of the Game Acts of Canada, or any amendments thereto.

4. BIRTH OF A SALMON.

The fish lies in the shell, coiled round in the form of a bow, and the greatest strain being at the back it is the first part that is freed; and, after a few struggles, the shell is entirely thrown off with a jerk. The appearance of the fish at this stage of its being is very interesting; what is to be the future fish is a mere line, the head and eyes large, the latter very prominent. Along the belly of the fish, from the gills, is suspended a bag—of large dimensions in proportion to the size of the fish. This bag contains a yolk, which nourishes the fish for six weeks, after which it must be fed. For a few days after hatching, the two dorsal fins are apparently joined, and the two pectorals are very large in proportion to the rest of the animal. The little creature, not requiring to seek its food, moves very little, and, when it does, swims mostly on its side, owing to the large size of the bag, which gradually becomes absorbed, and in a short time the fins get separated, and the fry assumes the general aspect of a fish. In its first stage it is translucent, but in a short period it takes on the parr color, and the transverse bars can be easily seen, and the tail begins to get much forked. At the bag stage of their existence they are very easily injured; a displaced stone in the gravel in which they are lying, coming against them, destroys them; and although they are no longer the prey of insects, all kinds of fish and fowl are their enemies, and great must be their destruction in rivers where their enemies are numerous. As we have previously stated, in about six weeks the bag is absorbed, and the fish is a fingerling, or parr, from one inch and a half to two inches long.—*Experiments in Artificial rearing in the Bag.*

5. NEW SALMON RIVER IN IRELAND.

A fish-walk has been made for two miles over the ground between Lough Corrib and Lough Mask, in the county of Galway, at a cost of £650. By this means salmon are now enabled to pass up and down freely. The *Galway Express* says:—"Within the past four weeks Mr. Miller has collected and deposited no less than 770,000 salmon ova in the streams of Lough Mask; in addition to this large supply, Mr. Miller has conveyed forty adult salmon alive a distance of twenty-three miles in a large tub of water, and, by frequently