

three and four hundred adult salmon, weighing from six to sixteen pounds each. It is doubtful, indeed, whether in any other part of the world a more wonderful or pleasing exhibition can be enjoyed at one sight of such numbers of large salmon as were enclosed within this small space. This extraordinary display is not of long duration, lasting only about a fortnight, generally during the last week of October and first week of November. Such an interesting feature, in connection with the institution, caused our artist to make a particular sketch of the pond with its finny occupants.

No. 11 gives views of the several shapes of the eggs during incubation, and the growth of the embryo.

EXPLANATION OF NO. 11.

- No. 1 shows the young ova developing the head (magnified);
 No. 2 shows ditto developed (magnified);
 No. 3, the head and body of the fish developed (magnified);
 No. 4, young ova before the developing in natural size;
 No. 5 shows the ova of the natural size, after the vital principle has been developed. The body of the fish in this stage has a pinkish tinge and the eyes are very large.
 No. 6, the shell of the ovum just burst, and the head of the fish protruding from it.
 No. 7, the state of the ovum shown after the bursting of the shell, when the pulsations of the heart become visible.
 No. 8, the shell just thrown off, the tail dropping, about a third part of the shell, which is transparent, is fractured by the fish in its exertions to extricate itself. Before the shell is broken the tail envelopes the yolk which is seen attached to the body of the fish.
 No. 9, the tail in a short time becomes straight, and the fish more lively; the mouth assumes a distinct form, and the lower and pectoral fins, which are quite transparent, are in motion simultaneously with the actions of the heart, which beats from 60 to 65 times in a minute.
 No. 10 is a magnified representation of No. 7, the fish adhering to the shell, which is partly broken.
 No. 11 represents No. 9 magnified; the heart is before the pectoral fins, under the throat.
 No. 12 is a still more enlarged view of No. 9, showing the direction in which the blood circulates, as seen by a microscope.

The blood flows from under the body of the fish through the blood-vessels, ramified along the sides of the back, and is then collected into the large vessel which runs along the front and bottom of the bag, communicating directly with the heart. An equal quantity of air, or some transparent matter, circulates with the blood. The blood is drawn by the heart from the large vessel alluded to, and thrown in regular pulsations into the vessels of the head and throat, where it assumes a dark colour. The rays of the gills are visible, and the fish soon begins to assume a brownish colour.

Salmon fry, or smolts, for some time wander about the sides of the stream, where the current is obstructed, but as they acquire strength, they trust themselves to the mid-stream, play in the pools and deep spots, and on the setting in of the spring rains in the following year, are carried down to the junction of the river with the salt water, where they remain till habituated to the novel element into which they then proceed. The growth of the smolts, or young fish, is very rapid, especially after they have reached the sea, where food is in abundance. Fry marked in April or May have returned by the end of June, weighing from two to three pounds and upwards, and a month or two later they have been found to weigh as much as six pounds. The small sized fish under the weight of two pounds are called "salmon-peel," all above that weight "grilse." The growth of the grilse during the second visit to the sea and for several subsequent years equals, if it does not exceed, that of the first year. The land-lance and other fishes constitute the food of the salmon when out of sea; and that it is a voracious feeder may be inferred both from its rapid increase of size and its dental arrangement.

No. 13. Salmon (developed shape.)

No. 14. Salmon, male (in summer.)

No. 15. Salmon (in fall.)

The first practical experiments with Fish-culture in the Dominion originated with Mr. Wilmot at his private residence in Ontario, in 1865. Three years afterwards, when its benefits were made known, it was adopted by the Government, and has since been extensively carried on in several of the Provinces. The rapidly increasing popularity of the industry, together with the marked success which attended its operations, has had the beneficial effect of inducing the Government to erect six addi-

tional fish-breeding establishments (beyond the original one at Newcastle) in the Maritime Provinces and in Ontario. The Restigouche, a famous salmon river dividing New Brunswick and Quebec, had one built upon it in 1872. During the following year two more were erected, one at Gaspé Basin, the other on the Miramichi river; following these, another was put into operation at Tadousac, at the mouth of the Saguenay river. In 1875, a salmon hatchery was built at Bedford, near Halifax; during the same year the largest fish-breeding institution on this continent was erected at Sandwich, on the Detroit river; this one is especially adapted for the artificial propagation of white-fish.

That our readers may be enabled to comprehend more fully the importance of this enterprise, and the amount of benefit which has already been derived from it, we give the following statement, taken from official returns, of the numbers of young fish which have been distributed from the Newcastle establishment:

Consisting of salmon, salmon-trout and white-fish, which have been reared in it	5,725,000
There are, at the present time, in the several breeding-rooms in the course of hatching out— <i>living ova</i> of salmon, trout and white-fish, and California salmon, amounting to	1,175,000
Making a total from this hatchery of	6,900,000
From the other hatcheries in the Dominion, the young salmon and white-fish which have been planted in many of the rivers and other waters amount to	9,215,000
There are also on the hatching-trays of the several buildings in the Maritime Provinces and at Sandwich vivified eggs of the salmon and white-fish, numbering	12,400,000
These added together form a grand total of fry and fish-eggs of the most valuable species which have been produced at the several Fish-breeding establishments, for distribution in the waters of Canada, amounting to	28,515,000

CHOOSING A PHYSICIAN.—"To choose a physician," as Lady Mouncashel has well remarked, "one should be half a physician one's self; but as this is not the case with many, the best plan which a mother of a family can adopt, is to select a man whose education has been suitable to his profession, whose habits of life are such as prove that he continues to acquire both practical and theoretical knowledge, who is neither a bigot in old opinions nor an enthusiast in new; and, for many reasons, not the fashionable doctor of the day. A little attention in making the necessary inquiries will suffice to ascertain the requisites here specified; to which should be added what are usually found in medical men of real worth—those qualities which may serve to render him an agreeable companion; for the family physician should always be the family friend."

EXTRAORDINARY PHENOMENON AT SEA.—Capt. Hedderwick of the steamship *Victoria*, belonging to the Anchor Line, which has just arrived at Glasgow from New York, reports having encountered terrific weather on the outward passage to New York. On the 18th ult., when on the eastern edge of the Grand Banks, a terrific gale from the W. S. W. was encountered, and during the height of the storm there appeared on the trucks, yards, and stays large balls of fire of a phosphorescent nature, strung at intervals of one or two feet, and giving the ship the appearance of being decorated with Chinese lanterns, only the lights were far more brilliant. They settled on the vessel like a shower of meteors, and disappeared almost as suddenly as they appeared—an occasional one dropping from the yards and bursting with a loud report. One of them fell and burst almost in the face of the chief officer, but beyond dazzling him for a moment, it caused him no inconvenience. Captain Hedderwick states that he has not known such severe weather for the last 21 years.

INSINCERITY IN ASKING ADVICE.—Nothing is less sincere than our manner of asking and of giving advice. He who asks advice would seem to have a respectful deference for the opinion of his friend; whilst yet he only aims at getting his own approved of, and his friend responsible for his conduct. On the other hand, he who gives it, repays the confidence supposed to be placed in him, by a seemingly disinterested zeal, whilst he seldom means anything by the advice he gives but his own interest or reputation.—*Roche foucault.*