

4. When the fish lie on the side it is usually a sign that they are sick, or do not have enough pure water.

5. I do not know the nature of food used, or, judging by the sample, whether it is the best for the purpose.

6. The goldfish will spawn in an aquarium, but in order to give them a chance to deposit their eggs in a safe place, there should be a water-plant, upon which the females will discharge their ova, and to which they will adhere, and on which they will hatch out.

7. Those with the tails "seeming to shed" have probably had the skin abraded or injured by rough usage.

8. There is nothing that can be put in the water that will make the fish healthy. Avoid nostrums, but make the conditions of life normal to the fish and they will thrive. It has been the writer's experience with large goldfish that if there are enough of water-plants in a spacious tank, or even if the sides are merely coated with an abundance of microscopic green algæ, that they will take little food which they may be offered and live apparently in perfect health for years. Too many plants in the water are just as bad as none at all. The plants give off oxygen to the water, which is of advantage to the fish.

WASHINGTON, D. C., *April 13, 1883.*

187.—EXPORTS OF FISH-OIL FROM NORWAY, 1878-'82.

By **FREDRIK M. WALLEM.**

[From a letter to Prof. S. F. Baird.]

As far as now known, the exportation of fish-oil (including whale-oil, &c.) has been as follows:

Years.	Liters.	Gallons.
1878	11,900,000	*3,143,080
1879	12,700,000	3,355,350
1880	15,200,000	4,015,850
1881	10,400,000	2,763,540
1882 (January 1 to October 31)	8,750,000	2,311,750

* This is calculated on the basis of the United States standard gallon of 231 cubic inches, which contains 3.785 liters. The liter contains 61.028 cubic inches.

The proportion of cod-liver oil in 1882 was less than in other years, as the whale and other fisheries were more successful than usual. The quantity of cod-liver oil exported must be over 60 per cent of the whole, while the cod-liver oil for medical purposes (three grades) is at least 33 per cent. The price of this oil for medical purposes fluctuated greatly in Europe during the spring of 1882. At present the price of the best grade ("steam refined") is \$26.80 per barrel. During 1881 its average price was \$22.25.

BERGEN, NORWAY, *December 21, 1882.*