

The oil extracted from the dolphin is a paler yellow and more dense. Both are used in tanning and in the lubrication of delicate machinery.

Alligator Oil.—New Orleans was formerly the market for alligator skins and oil, but indiscriminate slaughter and want of a close time has cleared Louisiana of the saurians, and now they are farmed on the Mississippi and hunted in the vast marshes of Florida. New York is now the principal market for crocodile products. The oil is like an ointment of a reddish color, and contains more solid fat than cod-liver oil or sperm oil. In Brazil they call the oil extracted from the local variety of alligator "jacary grease," and use it for lighting purposes, in the making of waterproof varnishes, and as a medicine. In continental countries it is used principally in the making of degreas.

Shark Liver Oil.—This is a thick reddish nauseous oil, sometimes substituted for whale oil. Degras is manufactured from it. It is the shark of the northern latitudes that furnishes the oil, and the principal fishery is in Greenland.

Seal Oil.—The seal gives a very similar oil to its cousin the dolphin. The oil is extracted from the flesh much in the same way that whale oil is obtained. The color is yellow and the taste is nauseous. It is usually met with mixed with whale or sperm oil.

Dugong Oil.—Two sorts of dugong found on the coasts of India and Australia respectively give this oil. It is a brownish yellow turbid liquid with a strong fishy smell.

Other Similar Oils.—The sea-lion, the orc, the borqual, the jubari, the walrus, the manatee, and other sea animals are all laid under contribution for oil. If the mermaid ever does appear, she will most undoubtedly be of the company. These oils are seldom or never pure; they are mixed together with those already noted, and sold under the better known names. Everything caught goes to the pot, so that the composition of the oil sent out varies constantly and infinitely according to the hazard of the catch. The leather trade can and does use them all without enquiring too closely into the nature of the mixture.

Fish Oil.—It would be impossible to enumerate the fish that get into the oil kettle. Almost everything that swims is popped into the pan for oil in one place or another. The herring, sardine, whiting, skate, salmon—all our old familiar friends, in fact—yield oil, and "fish oil" may be a mixture of any or all of them. The oil is extracted either by boiling or by allowing the fish to putrefy. This latter is a method which makes the fish oil factory the place of all others to avoid. Fish oil, as ordinarily sold, is a brownish yellow oil, with a strong smell. It keeps limpid at freezing point, and is used principally for degreas manufacture.

Some fish oils, however, are sent out pure, under specific names, and among these are the following:

Japan Sardine Oil.—This is made in the islands of Yesso and Ava, and refined at Yokohama. Before this process, the oil, extracted by boiling the fish in water, is thick, even in summer; but as sent out from Yokohama it is a clear liquid, separated from the solid matter which is sold as fish wax or fish stearine. The oil is used in soap and candle making.

Tunny Fish Oil.—The tunny is a Mediterranean fish, caught in tremendous quantities off the coast of Italy. It is very rich in oleine and margarine, and is used principally for degreas.

Menhaden Oil.—This is extracted from a kind of shad found in abundance in American waters. An average specimen will weigh about four pounds, and a ton of fish boiled up in the usual way will yield about thirty-five gallons of oil. It has a brown color, a density of 0.933, and solidifies a few degrees under freezing point. It has all the properties of cod-liver oil. The Russian shad, caught in the Volga, is rather richer in oil, and this is sold under the name of Astrachan herring oil.

Salmon Oil.—There is hardly likely to be, in our times, an oil factory on Deeside, using the "fush" as raw material, though it might have been so in the days when Preston apprentices had a clause in their indentures by virtue of which salmon was not to appear on their dinner-table more than three times per week. China is the only country where salmon oil is made. It is a clear white oil, and is used in the preparation of Chinese ink.

In addition to the wide stretch of the animal kingdom we have already shown as laid under contribution for oil, there are still the birds and insects to speak of in this connection. Both yield oil, and we will give a few of the most noteworthy examples.

Penguin Oil.—Penguins have little or no wing, but otherwise look and behave remarkably like geese. They are so numerous and so easily knocked on the head that ten sailors have killed 275,000 in five weeks. As these would give about 25,000 gallons of oil, the business seems to be a pretty good one. The oil is extracted by scorching the flesh and boiling it. It is very like whale oil, but has a faintly disagreeable smell and soon turns rancid. It is used in leather dressing.

Fulmar Oil.—The fulmar is a puffin which makes a home of St. Kilda in the Hebrides, and it is the oiliest bird in creation. It is a small oil factory on two legs. Its method of defence, in fact, is to squirt oil at the pursuer. When the birds are caught in August the operator takes them one by one and strangles them in a bag made out of the stomach of a solan goose, forcing them at the same time to part with their oil. A fulmar gives about a pound of oil which could easily be mistaken for cod-liver oil, and has some of its qualities. In St. Kilda it is a favorite medicine. In New Zealand and Tasmania another of the petrel family is done

to death for its oil in the same way, and this is used for lamps.

Frigate Bird Oil.—The frigate bird is plentiful in the Indian seas, and is the strongest of all flyers. The oil got by boiling its flesh is a sovereign remedy for Indian sciatica. It is an orange-tinted oil, of the consistency of palm oil, and the smell is not particularly disagreeable.

Insect Oils.—These, of course, are only made and used where insects are peculiarly plentiful; for instance, in locust-invaded countries. Locusts, cock-chafers, crickets, weevils, beetles, and other insects have been used from time to time, and the preparation of oil from them is always the same. They are ground up with water between two millstones, and the black or chestnut-brown paste thus obtained is left to rest in a vat for about a month. At the end of this time the oil has risen to the surface, and can be decanted. It looks like cod-liver oil, but has a disagreeable odor. After purification with sulphuric acid, an oil good enough at a pinch for several purposes, lubrication, for instance, is obtained.

Doubtless, in the remoter parts of the earth's surface, other and perhaps more curious animal oils are made and used. This essay, however, is sufficient to show that they are wonderfully varied, and that no division of the animal kingdom is forgotten in the universal quest for oil.—*Oils, Colors, and Drysalteries.*

Anthion.

The *Chemische Fabrik*, of Berlin, says the *Revue Universelle*, has recently put upon the market an oxidizing substance, the properties of which have been long known to chemists. It is the persulphate of potassa, and is prepared by electrolysis in submitting a solution of sulphate of potassa to an electric current. There occurs an oxidation and a deposit, at the positive electrode, of the persulphate, which is, in fact, less soluble than the ordinary sulphate, while hydrogen is disengaged at the negative electrode.

There is obtained a very light precipitate which readily crystallizes through solution in warm water, and which in cooling yields brilliant crystals having a reflection comparable to that of mother-of-pearl. These crystals are sold by the Berlin works under the name of "anthion." This substance, like all bodies whose stability is not perfect, is a remarkable oxidizing agent, either in neutral or slightly alkaline solution.

It is employed in dyeing and serves for decolorizing indigo and various other substances. It is also used for bleaching fabrics. But its greatest utility, without doubt, is the application that can be made of its properties in photography.

Beans are mentioned on the monuments of the Egyptians B.C. 2500.

The watermelon grows wild all over Africa. Grown in Egypt B.C. 2500.