

cies known to inhabit these coasts, while the only fossil one, *A. subcostata* Conrad, a species from the Colorado Desert, appears to be different, as the name would imply. For this reason, I have attached a name to the rather imperfect material received from Mr. Hemphill.

Scalaria Hemphillii, n. s. (7991).

Shell in general resembling a robust specimen of *S. indianorum*, having from nine to twelve varices on the last whorl, coronated behind near the suture, wholly pure white; surface of the whorls beneath the varices longitudinally delicately sculptured, with alternate riblets and grooves. Length about an inch; apical angle about 30°.

This species has the sculpture of *S. bellastrata*, but the shape of *S. indianorum*, and is the only grooved species, except the former, which has yet been reported from this region. All the specimens are decoliate. The specimens were sent by Mr. Hemphill with the suggestion that they might prove to be new, and an examination has confirmed the suggestion. I take much pleasure in dedicating it to its discoverer.

The two species of *Cancellaria* mentioned were obtained from the San Diego well some years since, but having been mislaid cannot at this moment be identified. *Mamma nana* Möller is now found living in Arctic seas and fossil in the Tertiary of Japan.

WASHINGTON, February 3, 1878.

THE MANUFACTURE OF PORPOISE-OIL.

By Capt. CALEB COOK, of Provincetown, Mass.

About the year 1816, sailors and fishermen having caught a porpoise on their voyage, would sometimes extract the oil from the jaw-bone and give it to carpenters and those who used oil-stones for sharpening their tools. Finding in this way that it did not gum nor glue, suggested the idea that it was just what was wanted for a nice lubricator. It was noticed that the weather at zero would not congeal it, neither would it corrode on brass.

Watchmakers were then using olive-oil as the only fitting oil for watches; but by experimenting with the porpoise-jaw oil they found it superior to the olive or any other oil, consequently the sailors and fishermen found a ready market for all they were able to obtain.

This state of things continued until the year 1829, when a shoal of blackfish, about forty in number, was taken at Provincetown, Mass., being the first for many years. Solomon Cook, of that town, took from the jaws of those blackfish a few gallons of oil, and sent it to Ezra Kelley, of New Bedford, Mass., a skillful watchmaker, to be tested for watch-oil. Mr. Kelley soon found that this oil was superior to the porpoise-oil, as it had more substance and less chill. He contracted with Solomon Cook to supply him from year to year until 1840, when Solomon Cook died, and his oldest son supplied Mr. Kelley until the

demand was so great that the jaws of the blackfish were not sufficient to supply the market.

Porpoise-jaw oil can be refined a little by exposure to the cold at zero, and in that state, with the atmosphere at zero, it is strained through a cotton flannel strainer made in the shape of a cone, but when filtered through paper it is so limpid that it has no lubricating properties whatever, and becomes useless. This oil is called porpoise-jaw oil, but is taken from the blackfish, belonging in the family of whales, by a method known only by myself. It is warranted not to congeal with cold at zero, though it will thicken and turn a little milky in appearance. It is warranted not to corrode on brass or rust on steel, and it will not glue on the finest watch. Ezra Kelley, of New Bedford, Mass., has made it a business for many years to put it up for watch use, and has led in the market, while B. H. Tisdale, of Newport, R. I., and I. M. Bachelder, of Boston, are getting quite popular in the European market.

Caleb Cook, youngest son of Solomou, from scientific experiments did discover, about the year 1842, that the melon-oil of the blackfish was far superior to the jaw-oil in every respect—so much so that Mr. Kelley, who had about this time become very popular in preparing this oil for the trade, would not buy it until he was told what it was produced from; and from that time to the present, 1876, Caleb Cook's blackfish-melon (watch) oil has been refined by Kelley, of New Bedford, Bachelder, of Boston, Tisdale, of Newport, and many others on a smaller scale, for the world's use. Since the year 1842, Caleb Cook, of Provincetown, Mass., claims to be the only person who understands the art of producing this oil free from all glutinous matter and fit for use. This, he says, is done by a process known only by himself—not by mixing other oils or liquids with it, but by extracting all the acid and gluten from it, and leaving the oil pure for the finest and most delicate machinery. This, he says, cannot be done by the chilling and straining process; for when it becomes perfectly transparent at zero, the lubricating properties are all gone, the oil runs off the pivots, spreads on the plates, dries up, the pivots cut, turn red, and the oil is worse than worthless, for the valuable timekeeper is no longer what it was once for the want of oil with more substance and lubricating properties.

Porpoise-jaw oil and blackfish-melon oil are worth from \$5 to \$15 per gallon, according to supply. These oils are sold under the above trade-names, and also under the names "watch-oil" and "clock-oil". They are used largely by manufacturers of firearms, watches, and philosophical apparatus. Smith & Wesson, of Springfield, Mass., the Ethan Allen factory, at Worcester, Bye & Johnson, of Worcester, the Howard Watch Company, the Elgin Watch Company, the Waltham Watch Company, and the clock-factories in Connecticut, use them constantly. The philosophical-instrument makers use them for air-pumps, as they keep the leather always soft and pliable. Telegraph-instrument makers

use them when they can get them. They are used in government light-houses for the clocks of revolving lights. The color of the oils is very light, and can be made very white by placing in the window, where they will bleach in a short time. One drop of water in one pint of the oil will injure it very much.

It may be interesting to know how those fish or whales are taken. They make their appearance about the shores of Cape Cod and Barnstable Bay from early in the summer until early in winter; and when it becomes known that a shoal of blackfish is in the bay, the boats are manned and proceed at once to get in their rear; and, as the fish are at the surface of the water the most of the time, it is easy to tell how to manage to keep them between the boats and the shore. While in this position the men in the boats will make all the noise with their oars they can, and that will cause them to go in the opposite direction from the boats and toward the shore; and when the fish find that they are in shoal water, by seeing the sandy bottom, they become alarmed, and go with all their might till they run fast aground on the sand. The boats then row in their midst; the men with lance in hand jump out of their boats into the water, and butcher them as a butcher would a hog, and it becomes one of the most exciting occasions that it is possible to imagine, for the water flies in every direction, and the blood flows freely until death puts an end to the great tragedy. When the water ebbs and leaves them dry, their blubber is taken off, cut in slices, and the oil tried out. About thirty gallons upon an average is what one fish will make, and the melons will average about six quarts. The melons are taken from the top of the head, reaching from the spout-hole to the end of the nose, and from the top of the head down to the upper jaw. When taken off in one piece, they represent a half watermelon, weighing about twenty-five pounds. When the knife is put into the centre of this melon, the oil runs more freely than the water does from a very nice watermelon—hence the name melon-oil.

About the same time that the blackfish made their appearance in our waters, another of the whale species made its appearance also, called by the fishermen "cowfish" and by the historian "grampus". These whales are very much in the shape of the blackfish, only smaller, not so fat, and not so dark-colored. The oil from the melon of this fish is thought to be superior to anything yet found in the blackfish or the porpoise. It is of a very yellow color, and when reduced by the chilling and straining process it appears to have all the body and lubricating properties that are wanted for the very best watch-oil; but as it will take one year to determine it by practical experiments, it is thought best to keep it out of the market for the present.

This fish has made its appearance in our waters but three or four times in the last forty years, or about once in ten years. The method of taking it is the same as for the blackfish.