

taken in November, 1881, show the Syrskian organs slightly larger than in the Fire Island specimens, indicating possibly that functional maturity of the male organs is not attained till midwinter. This is rendered all the more probable from the fact that the young eels about 2 inches long which constitute the swarms which come into fresh water in the spring must have had three or four months during which to grow in order to reach the dimensions which they attain, which would render it probable that actual oviposition occurred sometime during the months of December or January.

For a full account of what has been hitherto known in regard to the breeding habits of the eel, the reader is referred to a paper by G. Brown Goodé, entitled "Notes on the Life history of the Eel, chiefly derived from a study of recent European authorities," and published in the Bulletin of the United States Fish Commission, I, 1881, pages 71-124. The only points which the writer has more fully elaborated are such as relate to the finer structure of the male organs, and he also takes pleasure in announcing that the male eel has been positively identified from at least two points along our eastern coast, the animals in both instances showing the male reproductive elements so far advanced in development that there can be but little doubt if the animals had been taken a few weeks later, ripe spermatozoa would have been found in the *vasa deferentia* of the testes.

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#### EXPLANATION OF FIGURES.

Fig. 1. Vertical transverse section through one of the Syrskian lobules of the male eel, showing the spermatic masses *s s*, the peritoneum *p p p*, which invests the testes and is reflected over the abdominal parietes on either side of the *vas deferens v*, which has two vessels *vs vs* almost underlying it. From the Fire Island specimens. X 35.

Fig. 2. More magnified view of a portion of a section of the testicle of the eel, showing the outer layer of peritoneum *e* with the septa *st st* extending inwards between the spermatic masses, and which thin out into the very thin partitions *pp*. From a Fire Island specimen, X 200.

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## 2.—THE PORPOISE FISHERY OF HATTERAS, N. C.

By F. W. TRUE,

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#### THE SPECIES CAPTURED.

The primary object of my visit to Hatteras in September last was to determine whether the species of dolphin captured at that point was the same as that described by Professor Cope under the name of *Lagenorhynchus perspicillatus*, and, if so, to obtain material to confirm or dispel my suspicion that this species is the same as the *L. acutus* of Gray.

I also proposed to collect as much information as possible relative to the fishery.

Upon arriving at Hatteras I discovered that the village was located on the sound side of the banks (as the outlying ridge of sand-hills is called), while the fishery station was on the ocean side. The labor of a walk of 4 miles through the sand was amply repaid, however, by the discovery of scores of skulls and fragmentary skeletons scattered along the beach in the neighborhood of the station, although they were not of the species which I hoped to find. An examination of these remains furnished conclusive proof that the only species captured is the common bottle-nosed dolphin, *Tursiops tursio*. Not a single fragment of any species of *Lagenorhynchus* was to be found, and the fishermen did not recognize my drawings. This seems to me somewhat remarkable since a large series of skulls of *L. perspicillatus* was sent to the Museum a number years ago by Drs. Coues and Yarrow, from Fort Macon, which is not very far distant from Hatteras. I can only suppose that the latter species is a rare visitant in this region.

The bottle-nose dolphins captured are of all ages and of both sexes. The largest skeleton which I found measured 8 feet 7 inches in length. The animal was evidently aged, for the teeth were worn down nearly to the base of the crowns. The largest skulls measured 20 inches in length.

I neglected to mention above that the fishermen recognize a Spring "run" of dolphins which they term "tassel-fins," for the reason that they have long filaments attached to their fins. The animals are said to be very thin. I suspect that these "tassel-fins" are simply specimens of *T. tursio*, to which some lernean parasite attaches itself.

I collected, and have sent to Washington, about a dozen skulls and a large number of scapulæ, pelvic bones, and cervical vertebræ, including two abnormal specimens. All the skeletons were defective, and as we already have specimens in the Museum, I did not regard it worth while to collect any.

#### THE HISTORY AND METHODS OF THE FISHERY.

Porpoise-fishing has been carried on at Hatteras for at least a hundred years. The methods employed are quite simple, but show a knowledge of the habits of the prey. The season opens in November or December, when the porpoises are very fat. A station has been established at a convenient point on the beach, and signal poles are erected at a distance of 2 miles in either direction. The apparatus employed consists of four or six boats (resembling whale-boats), four or six nets of 18-inch mesh, and 100 to 200 yards long, and two or more fine-meshed sweep-seines.

When the preparations for the fishery are completed, a man is stationed on each signal pole and the boats, each carrying a single net, are placed as represented in the accompanying figure. (Fig. 1.)

The nets carried by boats A and B are fastened together, and the men rest on their oars and await signals from one of the distant poles. If the man on the pole toward the north (N) displays his "waif" in a manner showing that a school of porpoises is approaching from that direction, the men in the boat B commence rowing toward the position occupied by D, paying out their net as they go. At the same moment the men in boat D row southwestward toward the beach, likewise paying out their net. As soon as the porpoises have passed to the south of the position occupied by boat C, that boat and A repeat the movements of B and D, but row in a northwesterly direction. The porpoises are thus entrapped in a huge pound, as shown in Fig. 2. The nets themselves do not reach quite to the beach, but the fishermen find that by thrashing the water with the top lines, they are able to prevent the porpoises from escaping.

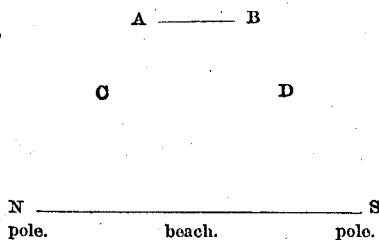


FIG. 1.

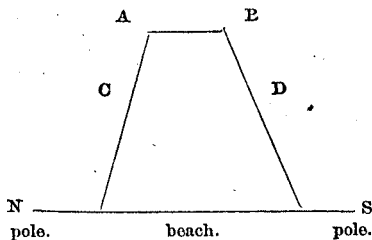


FIG. 2.

The schools thus entrapped frequently consist of 200 or 300 individuals, the power of which is so great that if they should rush violently against any part of the net it would immediately break. The nets are not, therefore, hauled to the beach, but remain in their original position, except so far as they are carried northward or southward by the tides. The actual capture of the porpoises is effected by means of sweep-seines, sufficiently large to contain 30 to 40 individuals. The operation occupies several hours. Very few individuals escape, and these mostly by leaping over the nets, breaking the meshes, or running out near the beach.

When captured, the porpoises, if not drowned, are killed by stabbing with knives. The flippers and dorsal fin are cut off and thrown aside. The skin and blubber are then stripped off together, and cut in pieces for the try-kettle. The mandible is removed and its oil dried out separately.

The process of rendering the oil, so far as I could learn, is of the simplest character. The amount obtained from a single individual does not average more than 6 or 8 gallons. The price per gallon received has not hitherto exceeded 40 cents. The product has usually been marketed in Elizabeth City or Norfolk.

The fishery will probably undergo certain important changes in the immediate future, from the fact that a Northern company has contracted to purchase all the porpoises captured during the next five years. In

consequence, the fishery which has languished for many years will probably be prosecuted with great vigor during the coming season.

NOTE UPON THE SCRAGG-WHALE.

Upon extending my inquiries in various lines, I discovered that the fishermen recognize a certain whale under the name of "scragg-whale." I could not satisfy myself as to what it really is. It was described as being smooth on the back and having short, dark whalebone. Is it Cope's *Agaphelus*, or some other species of fin-back or hump-back whale?

WASHINGTON, October 10, 1884.

3.—THE LABRADOR FISHERIES.

By W. A. STEARNS.

**COD FISHING.**—The men engaged in the Labrador cod-fishery are of two classes, the employers and the employed. The employers all along the coast are generally men who coming here poor have earned their way by hard work and "luck" to a position of more or less independence, or have been sent as agents from some firm of merchants abroad to hire men and conduct a fishery, large or small, as the wealth of the firm or the accumulation of business may allow. There are several of these foreign firms on the coast, notably those of Natashquan and Magpie, and much further eastward of Blanc Sablon and Isle la Bois; these, I believe, are all owned by merchants from Jersey in the English Channel. Among the many who have lived on the coast and worked up a business of their own, the establishment of W. H. Whitely, the magistrate for this part of the province of Quebec, is the largest; as the smaller "rooms," as these establishments are called, are simply a repetition of the larger ones on a smaller scale, a full description of that owned and conducted by Mr. Whitely will give you a pretty good idea of all.

The men employed in the fishery here are either hired from the surrounding families or from Newfoundland. The home men are rough, hearty, healthy, and good-natured, and those from Newfoundland, generally speaking, are large, robust, rough men in most every respect. They are apt to be quarrelsome, and in many cases, I sadly fear, the habit of taking whatever they see that they wish and can safely get away with is very strongly embedded in their nature. When detected they seem, like the ancient Spartans, to regret being caught more than to have taken what was not theirs. Yet many are the reverse of ill-natured. All are strong and accustomed to endurance that would wear out any ordinary individual, while it just seems to fit them for their work. Having employed some thirty or forty men the season before, the next thing is to get everything in readiness for their reception and