

SCIENTIFIC RESULTS OF EXPLORATION BY THE U. S.
FISH COMMISSION STEAMER ALBATROSS.

[Published by permission of Hon. Marshall McDonald, Commissioner of Fisheries.]

No. XXX.—ON HARRIOTTA, A NEW TYPE OF CHIMÆROID FISH FROM
THE DEEPER WATERS OF THE NORTHWESTERN ATLANTIC.

By G. BROWN GOODE and TARLETON H. BEAN.

A REMARKABLE type of Chimæroid fish was obtained by the U. S. Fish Commission steamer *Albatross* while engaged in deep-sea exploration in the northwestern Atlantic.

Four specimens were taken, two of them young, and with proportions quite unlike those of the adults.

The limits of range are, of course, by no means determined by the capture of these isolated specimens, all of which came from between latitudes north $36^{\circ} 45'$ and $39^{\circ} 44'$, and longitudes west $70^{\circ} 30'$ and $74^{\circ} 28'$, each specimen being from a distinct locality. The habitat of the genus must then be described as western North Atlantic, 707 to 1,080 fathoms, off the coasts of Virginia, Maryland, and Delaware.

In the present notice no attempt is made to discuss the relationships of the new form, except to say that it is allied to *Chimæra*, *Hydrolagus*, and *Callorhynchus*. Dr. Gill is disposed to form a subfamily of the Chimæridæ for its reception, and it is not unlikely that as a result of more thorough study it may be found necessary to place it in a family by itself. The descriptive notes which follow are from the advance sheets of our memoir, entitled "Oceanic Ichthyology," and were prepared six years ago. Fearing still further delay in the publication of our book, we present them, together with figures of both old and young.

HARRIOTTA, new genus.

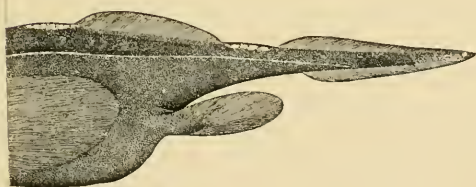
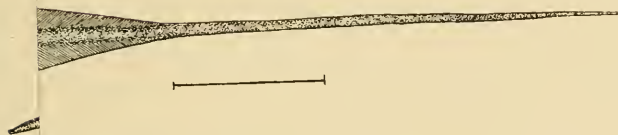
Snout exceedingly elongate, with a cartilaginous midrib and foliaceous lateral expansions of the skin at its base. Two dorsal fins, the anterior with an immense triangular spine, finely serrated upon its lateral edges. Anal fin reduced to a cutaneous fold. Longitudinal axis of the tail nearly the same as that of the trunk, very elongate, with

filamentous tip, the fin below much more extensive than that above. No cephalic organ. Gill-openings lateral; separated by a wide isthmus. No spiracles. Teeth as in *Chimara*. Claspers small and simple.

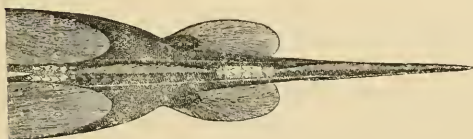
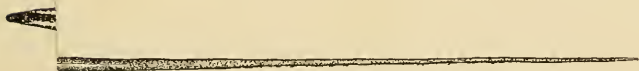
HARRIOTTA RALEIGHANA, new species.

Plate XIX.

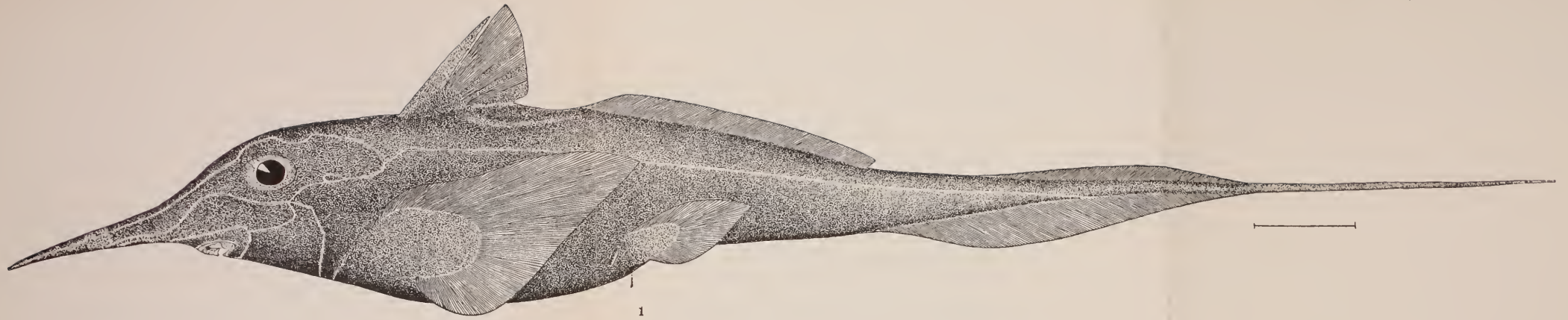
Tail extended in a very long filament in the older individuals, wanting in the young. The first dorsal fin separated from the second by an interval nearly equal to the diameter of the eye in the older individuals, very much greater in the younger ones, in which the cartilaginous portion is exceedingly narrow and high. The second dorsal fin long and low, its height about equal to the diameter of the eye, its length equal to that of the head. The spine preceding the first dorsal fin is very strong; its length in the older individuals equal to the distance from its own base to the origin of the second dorsal; it is proportionately much longer and stouter in the young, and there is also a double row of strong spines in advance of the second dorsal, and in the notch between the second dorsal and its continuation upon the upper part of the tail; and there is also a similar group of at least six strong spines upon the top of the head back of the interorbital space, and surrounded by the curve of the forward extension of the lateral line. Faces of these spines may be felt beneath the skin in older individuals of both sexes. Claspers in the young male examined, small and simple, in length scarcely equal to two-thirds of the long diameter of the eye. Pectoral fins immense, wing-like, rounded in the young, subfalcate in the older individuals; inserted slightly in advance of the origin of the first dorsal, and extending in the older forms beyond the root of the ventral. Ventrals also subfalcate; similar in form and appearance to the pectoral, and extending to a point at two-thirds of the distance from the origin to the end of the second dorsal; in length little less than half the snout. In the young, the ventrals are placed somewhat farther back, and reach to a point under the origin of the third section of the dorsal fin. The tail is prolonged in a slender filament, and in the older individuals the cutaneous flap upon its lower edge is three or four times as deep as that above, and extends beyond it anteriorly and posteriorly. In the younger specimens the upper and lower flaps are about equal in height, and the upper flap extends far in advance of the insertion of the lower one. The lateral line extends in a straight line from a point beneath the origin of the first dorsal approximately to the middle of the lower caudal lobe, which it follows along its base for the remainder of its course; in advance of the dorsal fin it bends downward in an elliptical curve, and then rises vertically from the oeciput to join its counterpart from the other side; bridle-like extensions of the same system extend on the sides of the head under the eye, curving upward in front of the eye, then downward and joining on the under side of the snout to a branch running from beneath the eye downward to the base of the



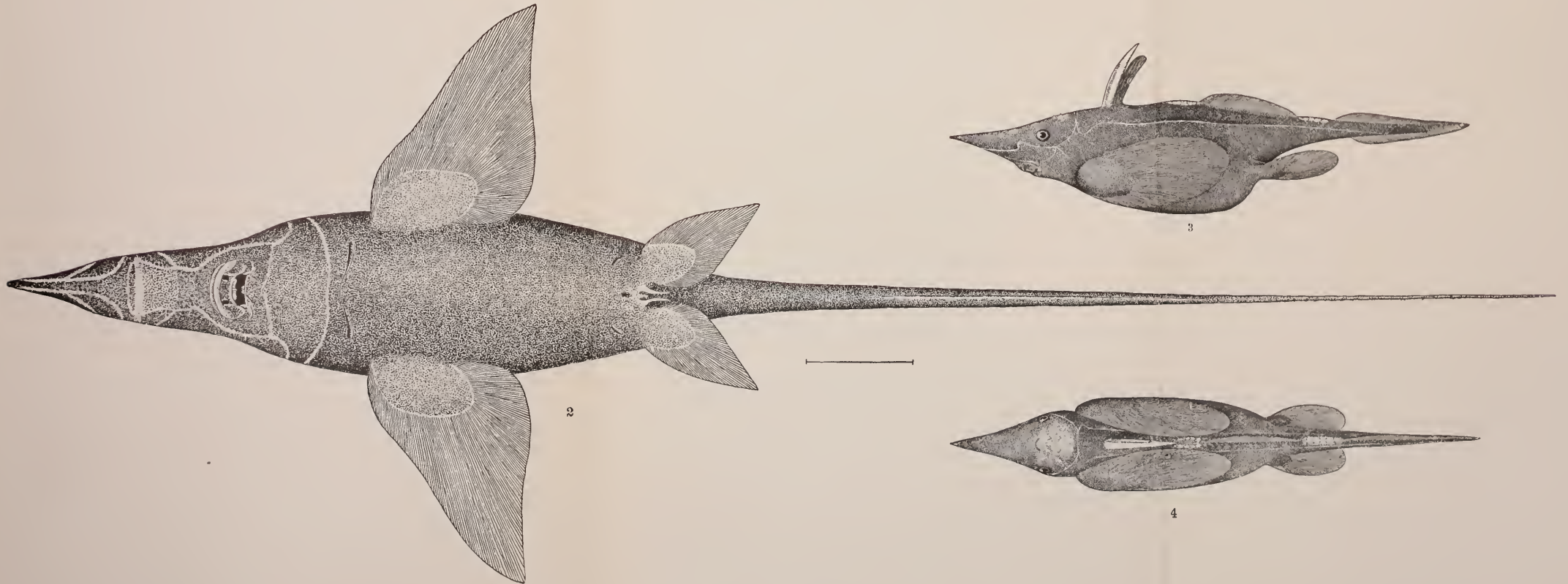
3



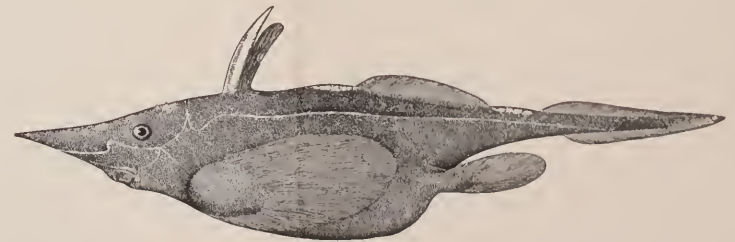
4



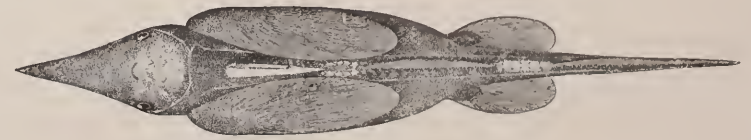
1



2



3



4

NEW SPECIES OF HARRIOTTA.

Figs. 1, 2. *Harriotta raleighana*, Goode and Bean. (Adult.)
Figs. 3, 4. *Harriotta raleighana*, Goode and Bean. (Young.)

pectoral fin in the young, or under the throat to a junction in the older ones, and also forward from the same point under the eye to join on either side the circle which surrounds the mouth. An elaborate system of mucous pores upon all sides of the snout; on the under surface of the snout in four longitudinal series. In the older individuals there is an extension of the lateral line system on either side of the midrib on the snout to its tip, and there are also symmetrical continuations of the same upon the under surface of the snout. Color, brown; caudal filament, pale.

The diameter of the eye is contained $5\frac{1}{2}$ times in length of the snout in the older specimens, and the distance between the eyes is equal to their diameter.

Of this species we have seen four specimens: The largest, a female (No. 39415, U.S.N.M.), 25 inches in length, from $39^{\circ} 44' 30''$ N. lat., $70^{\circ} 30' 45''$ W. long., in 1,081 fathoms, taken by the steamer *Albatross*. Another, a male (No. 38200, U.S.N.M.), $19\frac{1}{2}$ inches in length, was taken by the *Albatross* in $36^{\circ} 45'$ N. lat., $74^{\circ} 28' 30''$ W. long., at a depth of 781 fathoms. A third, a young individual (No. 25520, U.S.N.M.), 4 inches in length, was obtained by the *Albatross* in $39^{\circ} 37' 45''$ N. lat., $71^{\circ} 18' 45''$ W. long., in 991 fathoms. Still another, No. 35631, was taken at station 2235, lat. $39^{\circ} 12'$, long. $72^{\circ} 03' 30''$, in 707 fathoms.

This species is named in honor of Sir Walter Raleigh, philosopher and explorer, by whom the first English scientific expedition was sent to the New World.