On two new Species of Cephalopods.

By A. E. Verrill.

Among the numerous additions recently made to the marine fauna of our coast by the fishermen of Gloucester, Mass., are two new species of Cephalopods. They both belong to the eight-armed division. One is a true *Octopus*. The other and more interesting one is the second known representative of the remarkable family of Cirroteuthidæ, characterized by the presence of a pair of fins, one on each side of the body, supported by a transverse cartilage—by the presence of a great web, surrounding and uniting all the arms nearly to their tips—and by the presence of two slender cirri between the suckers along the greater part of the length of the arms.

Our species differs so widely from *Cirroteuthis Mülleri*, Esch., the only representative of the family hitherto described, that it is necessary to constitute for it a new genus.

Stauroteuthis, gen. nov.

Allied to *Cirroteuthis*, but with the mantle united to the head all around, and to the dorsal side of the slender siphon, which it surrounds like a close collar, leaving only a very narrow opening around the base of the siphon, laterally and ventrally. Fins triangular, in advance of the middle of the body. Dorsal cartilage forming a median angle directed backward. Body flattened, soft, bordered by a membrane. Eyes covered by the integument. Web not reaching the tips of the arms, the edge concave in the intervals. Suckers in one row. Cirri absent between the basal and terminal suckers. Right arm of second pair altered, in the male, at the tip.

Stauroteuthis syrtensis, sp. nov.

♂. Head broad, depressed, not very distinct from the body. Eyes large. Body elongated, flattened, soft or gelatinous, widest in the middle, narrowed but little forward, but decidedly tapered, back of the fins, to the flat, obtuse, or subtruncate tail. The sides of the head and of the body, forward of the fins, are bordered by a thin soft membrane, about half an inch wide. The fins are elongated, triangular, obtusely pointed, placed in advance of the middle of the body. Siphon elongated, slender, round, with a small terminal opening. Mantle-edge so contracted and thickened around its base as to show scarcely any opening, and united to it dorsally. Arms long, slender, subequal, each united to the great web by a broad membrane developed on its outer side, widest (about 1·5 inch) in the middle of the arm, while the edge of the web unites directly to the sides of the arms and runs along the free portion toward the very slender tip, as a border. This arrangement gives a swollen or campanulate form to the extended web. Edges of the web incurved between the arms, widest between the two lateral pairs of arms. The arms bear each fifty-five or more suckers, in a single row. Those in the middle region are wide apart (·5 inch or

more) with a pair of slender thread-like cirri, about 1 inch long, midway between them. The cirri commence, in a rudimentary form, between the 5th and 6th suckers on the dorsal arms, and between the 7th and 8th on the ventral ones. They cease before the 23rd sucker on the dorsal and lateral arms, and before the 22nd on the ventral ones. Near the mouth and beyond the last cirri on the free portion of the arms the suckers are more closely arranged. They are small, with a deep cavity. Colour (in alcohol) generally pale, with irregular mottlings and streaks of dull brownish; inner surface of arms and web toward the base, and membrane around the mouth, deep purplish brown. Length from end of body to base of arms 6·30 inches, length to posterior base of fins 2·50, to anterior base 4; width across fins 5, in advance of fins 2·70 (not including lateral membrane), across eyes 1·75, across end of tail 1·20; diameter of eye 1; width of fins at base 1·20, their length 1·75; length of arms 13 to 14, portion beyond web 2·5 to 3; edge of extended web, between upper arms, about 4, between lateral arms about 8; entire circumference of web about 48.

Taken by Capt. Melvin Gilpatrick and crew, schooner 'Polar Wave,' N. lat. 43° 54′, W. long. 58° 44′, on Banquereau, about 30 miles east of Sable Island, in 250 fathoms. Presented to the U.S. Fish Commission, Sept. 1879.

Octopus piscatorum, sp. nov.

Body of female smooth, depressed, about as broad as long, obtusely rounded posteriorly, not showing any lateral ridges, nor dorsal papillæ. No cirrus above the eyes. Arms long, rather slender, tapering to long, slender, acute tips, the upper ones a little (·1 of an inch) shorter than those of the second pair, which are the longest; the third pair are about ½ inch shorter than the second; the ventral pair about ¼ inch shorter than the third. In our specimen all the arms on the right side are somewhat shorter than those on the left, and the web between the 1st and 2nd arms is narrower, due perhaps to recovery from an injury. The suckers are moderately large, alternating in two regular rows, except close to the mouth, where a few stand nearly in a single line; about fourteen to sixteen are situated on the part of the arms included within the interbrachial web. The whole number of suckers on one arm is upwards of seventy. The web between the arms, except ventrally, is of about equal width, and scarcely more than one fourth the length of the arms, measuring from the beak. Between the ventral arms the web is about half as wide as between the lateral.

Colour of alcoholic specimen deep purplish brown, due to very numerous, crowded, minute specks; eyelids whitish. The front border of mantle beneath, with base of siphon and adjacent parts, is white; end of siphon brown. Lower side of head and arms lighter than the dorsal side. Total length from posterior end of body to tip of arms, of 1st pair 6·20 inches, 2nd pair 6·30, 3rd pair 5·75, 4th pair 5·25, to web between dorsal arms 3·25, between

ventral arms 2·50, to edge of mantle beneath 1·20, to centre of eye 1·55; breadth of body 1·25, of head across eyes 1·20, of arms at base ·22; diameter of largest suckers ·10; length of arms beyond web (1st pair) 3·00, 2nd pair 3·25, 3rd pair 2·80, 4th pair 2·75.

Taken by Capt. John McInnis and crew of the schooner 'M. H. Perkins,' from the western part of Le Have Bank, off Nova Scotia, in 120 fathoms. Presented to the U.S. Fish Commission, Oct. 1879.

This species is easily distinguished from *O. Bairdii*, by its more elongated body, its much longer and more tapered arms, with shorter web, by the absence of the large, rough, pointed papilla or cirrus above the eyes, and by its general smoothness. The white colour of the underside of the neck, siphon, and mantle-border also appears to be characteristic.—*Amer. Journ. Sci. and Arts*, December 1879.

On Amœba Blattæ.

Prof. Leidy remarked that while perusing the communication of Prof. Bütschli on *Flagellata* and other related organisms ("Beiträge zur Kenntniss der Flagellaten und einiger verwandten Organismen") in the Zeitschrift für wissenschaftliche Zoologie, 1878, p. 205, his attention was especially attracted by the description of a parasitic amœboid living in the intestine of the cockroach (*Blatta orientalis*. It recalled to mind that he had observed the same creature a number of years ago, in association with the ciliated infusorian he had described as *Nyctotherus ovalis*. At that time he had viewed it as a young form of a Gregarina, and had intended giving it and other parasites of the cockroach more critical examination, but failed to do so. The parasitic amœboid which Prof. Bütschli describes under the name of *Amœba Blattæ* is particularly interesting on account of its habits and its somewhat peculiar character. Prof. Leidy had recently examined some cockroaches, and found abundance of the amœboid in association with *Nyctotherus ovalis*, *Lophomonas blattaram*, *Oxyurus gracilis*, and *O. appendiculatus*, and an algoid plant.

The amœboid, he thought, was worthy of generic distinction from the true *Amœba*, holding a position between this and *Protamœba*. From the former it differed in the absence of a contractile vesicle and commonly also of vacuoles, and in the want of differentiation of endosarc and ectosarc; and from the latter in the possession of a well-defined nucleus. He proposed for it the following name with distinctive characters:—

Endamœba.

General character and habit of *Amœba*; composed of colourless, homogeneous, granular protoplasm, in the ordinary normal active condition without distinction of ectosarc and endosarc; with a distinct nucleolated nucleus, but ordinarily with neither contractile vesicle nor vacuoles.