

Nauplius with *Penæus*; either of these being demonstrated will prove the connection, and establish the splendid hypothesis of Fritz Müller.

The recent discovery of Professor Brooks that the brephalos of *Leucifer* is a Nauplius, brings the supposition in relation to *Penæus* within the range of probability. But as the youngest form of *Sergestes* that has been observed is believed to be an *Elaphocaris*, and this so early that the yolk-cells were still visible, and as *Sergestes* is nearer in family relationship to *Penæus* than to *Leucifer*, I think it is advisable still to wait before asserting that the young of *Penæus* is a Nauplius.

Professor Brooks states<sup>1</sup> that having captured and kept in confinement a specimen, he witnessed every moult between the youngest Protozoa and the young *Penæus*, and that consequently all the metamorphoses of *Penæus* have been observed, and there is no longer any ground for the attitude which certain over-cautious naturalists have assumed in refusing to accept Fritz Müller's conclusions until more complete proof should be furnished.

Mr. Walter Faxon of Cambridge, Mass.,<sup>2</sup> in commenting on Professor Brooks' researches, says that the latter "has proved the connection between the stages older than the Nauplius. That the Nauplius belongs to the same series he has not shown. In fact, his youngest Protozoa is an older stage than the youngest stage secured by Fritz Müller. He has riveted the links in Müller's chain that were closely joined before, but has not touched the weak spot." Mr. Faxon further remarks that "The larval stages of Penæidæ seem to be not uncommon in the warm seas. Besides the published figures of Müller and Claus, I have seen the drawings of the developmental stages, from the Protozoa onwards, made by Mr. Alexander Agassiz at the Tortugas Islands, in 1881, and by Mr. J. W. Fewkes at the Bermudas in 1882. No observer has rediscovered Müller's Nauplius; yet in the light of our knowledge of the development of *Mysis*, *Euphausia* and *Leucifer*, I see no good ground for refusing to accept Müller's reason for believing his Nauplius and Zoa stages to be parts of one life-history."

*Penæus canaliculatus*, Olivier (Pl. XXXII. figs. 1, 2).

*Penæus canaliculatus*, Olivier, *Encycl. Méthod.*, vol. viii. p. 660.

" " Milne-Edwards, *Hist. Nat. Crust.*, tom. ii. p. 414.

" " Sp. B., *Ann. and Mag. Nat. Hist.*, ser. 5, vol. viii. p. 174, pl. xi., 1881.

Rostrum slightly arched, furnished on the upper surface with nine teeth, the posterior of which stands on the gastric region a little unequally distant from the preceding, and one tooth on the lower margin, immediately below the most anterior of those on the upper. Dorsal carina gradually lessening to near the posterior margin, channelled in

<sup>1</sup> *Johns Hopkins University Circular*, vol. ii., No. 19, p. 6, 1882.

<sup>2</sup> *General Notes, Zoology U.S., Mass.*, May 1883.