

filaments are long, and richly studded with those membranous organisms that I have named *auditory cilia*." The discovery by Claus of otoliths in the Oxycephalidæ is not noticed.

In speaking of the second pair of antennæ, Spence Bate says, "in the Amphipoda this antenna is simple and normally well defined, the five joints of the peduncle and the flagellum being separate and distinct." But according to my experience the two first joints of the peduncle are as a rule more or less fused together.

"Among the Hyperidæ," he further says, "the [second] antenna is considerably impoverished, and in many genera it is rudimentary, while in *Phrosina* it appears to be absent." In regard to *Phrosina*, however, I may state that I have just received (June 27, 1887) from Dr. Bruce specimens taken at Malta, of *Phrosina semilunata*, Risso, ♂, in which both pairs of antennæ are well developed with long flagella.

The three sections of this paper are headed respectively "Correlation of Appendages," "On Exuviation," and "On Renewal of Appendages."

1878. BOVALLIUS, CARL, born 1849 (Hj. Théel).

Notes on *Pterygocera arenaria*, Slabber. (Bihang till Svenska Vetenskaps-Akad. Handlingar, IV, No. 8), pp. 1-27, pls. 1-4. 1878.

It has been shown by S. I. Smith that the names *Sulcator*, Sp. Bate, 1854, and *Pterygocera*, Latreille, 1825, must yield to the earlier name, *Lepidactylis*, Say, 1818, but in my opinion the name *Haustorius*, proposed by P. L. S. Müller in 1775, has the preference over all its competitors. The elaborately and beautifully illustrated notes by Bovallius (in English) open with an account of the adventures of Slabber's species, not however taking into account *Lepidactylis dytiscus* of Say. A chronological list of the literature is given, with a corresponding omission. A new subfamily is created, Pterygocerinæ, thus defined:—

"Cephalon rostrum ferens minimum, articulum primum antennarum non tegens.

"Labium superius breves, apice rotundatum.

"Mandibulæ magnæ, palpo elongato, articulo palpi secundo tertio longiore.

"Maxillæ primi paris parvæ, palpo biarticulato.

"Pedes maxillares palpo laminari.

"Antennæ superiores flagello appendiculari instructæ.

"Gnathopoda primi paris dactylo unguiculato, secundi paris dactylo minimo duplici.

"Pereiopoda primi et secundi paris articulis ultimis ligulas formantibus.

"Pereiopoda sequentia dactylis carentia.

"Telson simplex.

"Corpus non valde compressum.

"The family Pterygocerinæ is distinguished from the Pontoporeiinæ and Phoxinæ by its general form as well as by the abnormal structure of the dactyli of the gnathopoda. Another remarkable character is presented by the peculiar form of the carpus and propus of the first and second pairs of the pereiopoda, which I have thought proper to denote as spoon-shaped 'liguliformis.' *Pterygocera* differs, moreover, from the Phoxinæ by the second joint of the mandibular palpus being larger and longer than the third, and also by the telson not being bifid, but simple and only incised."

In the very full and detailed account of the species it is mentioned that "with the age of the animal the size of the eyes diminishes also, and in the oldest they are discovered only with difficulty. The pigment is red, the eye-lens short, thick, bluntly conical, the surface of the eye irregularly faceted."