Stylops ist die paläarktische und die nearktische Region, doch habe ich von Nordamerika nur einige wenige Exemplare einsehen können.

Schwerin, i. M. den 20. Januar 1906.

5. Feeding habits of the Pycnogonid Anoplodactylus lentus.

By Leon J. Cole.

eingeg. 23. Januar 1906.

It has always been assumed that pycnogonids live by sucking the juices of the hydroids, tunicates, and similar animals with which they are commonly found associated. The proboscis appears to be developed essentially as a sucking organ, and its shape is such as to suggest, in many cases, that it can be inserted through the outer tissues of the bodies of these other invertebrates, its hosts, to secure the more fluid portions within. This apparent adaptation is carried to the extreme in *Pipetta weberi*, recently described by Loman[1]. Very few direct observations on the feeding habits have been made, however, and so far as I am aware, all that have been recorded refer to the larvae.

Hallez[2] has recently given an excellent resumé of the knowledge concerning the parasitism of pycnogonid larvae in the gastral cavity of hydroids, adding observations of his own on the occurrence of larvae of *Phoxichilidium* (probably *femoratum*) in *Bougainvillia*. In *Anoplodactylus* (=*Phoxichilidium*) *plumulariae* von Lendenfeld[3] found that the larvae attach themselves to the outside of the hydroid by means of their large chelifori, and insert the proboscis directly into the tissues of the host, as it is commonly supposed the adults of most species do.

In a previous paper[4] I pointed out one very important obvious function of the chelifori in larval Pycnogonida, viz., that they serve the young for attachment, thus preventing their being swept away by tides and currents, until the claws of the legs have become developed enough to be functional. I suggested further that in such forms as *Anoplodactylus* and *Phoxichilidium*, in which the chelae are retained by the adult, and are in intimate relation with the mouth, that they would be found to subserve some purpose in connection with feeding. And such, in fact, I have now observed to be the case.

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[1] Loman, J. C. C., *Pipetta weberi* n. g., et n. sp., with notes about the proboscis of the Pycnogonida. Tijdschr. d. Ned. Dierk. Vereen. (2) Vol. 8. p. 259—266. 1904.

[2] Hallez, Paul, Observations sur le parasitisme des larves des *Phoxichilidium* chez *Bougainvillia*. Arch. d. Zool. Expér. (4) Vol. 3. p. 133—144, pl. 6. 1905.

[3] von Lendenfeld, R., Die Larvenentwicklung von *Phoxichilidium plumulariae* nov. sp. Zeitschr. f. wiss. Zool. Vol. 38. p. 323—329. 1883.

[4] Cole, Leon J., Pycnogonida collected at Bermuda in the summer of 1903. Proc. Bost. Soc. Nat. Hist. Vol. 31. p. 316. 1904.

The large purple pycnogonid (*Anoplodactylus lentus* Wilson) so abundant at Woods Hole is most commonly found associated with colonies of *Eudendrium ramosum*, and it has always been the natural inference that it obtained its food from this hydroid. It was difficult to understand, however, how the pycnogonid could obtain the juices of the hydroid by inserting its proboscis through the perisarc and so into the gastral cavity of the latter, since the proboscis of the pycnogonid has fully as great if not a greater diameter than the pycnogonid has fully as great if not a greater diameter than the stems of the hydroid. But in observing these pycnogonids at the United States Bureau of Fisheries laboratory at Woods Hole during the past summer (1905) I found that they probably do not suck the juices of the hydroids at all; on the other hand they were observed eating off the hydranths.

Specimens of *Anoplodactylus* were placed in a large dish or small aquarium with a freshly collected colony of *Eudendrium*. Here, with the aid of a reading glass, their actions could readily be observed. When the pycnogonid came into contact with a hydroid head the latter was seized firmly with the chelae and appeared to be forced slowly into the mouth. The pycnogonid then pulled away until the hydranth broke off, when it was gradually consumed, the chelifori aiding in the process by helping to force the hydranth into the mouth. The hydranth was sometimes broken up more or less by the chelae, and the pieces then appeared to be sucked in. An animal eating steadily soon consumed a considerable number of hydranths, and where these pycnogonids are abundant, as they frequently are, they must be a serious enemy of the hydroid colonies.

While speaking of *Anoplodactylus* it may be worth while to mention that during the past summer I had ample opportunity also to confirm my observations made in 1900[5] on the transfer of the eggs from the female to the male, which I was able to watch this time in a number of cases. The process was also observed independently by Mr. H. E. Jordan, a student at the Marine Biological Laboratory, whose observations agree in all essentials with my own. About the only addition I have to make is that it was noticed that the ovigera of the male were sometimes attached to the egg-mass while the animal was still on the dorsal side of the female, before he had worked around to the ventral side as described in my former paper.

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[5] Cole, Leon J., Notes on the habits of pycnogonids. Biol. Bull. Vol. 2. p. 195—207. 1901.