

KEY TO THE CHAETOPTERIDAE OF POINT LOMA

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1. Ventrum without color pattern; setiger 4 with several major spines 2

Ventrum with a combination of brown and chalky white color pattern (Fig. 2); setiger 4 with one major spine 3

2. Palps short, generally not reaching beyond setiger 6; peristomium reduced dorsally and ventrally into a thin "lip"; notopodia dorsally produced, long and tapered (Fig. 1) *Chaetopterus variopedatus*

Palps long, generally reaching to mid-body region; peristomium broad, well developed with dorso-lateral incision forming a mid-dorsal protuberance; notopodia not long and tapered (Fig. 2) *Mesochaetopterus* sp.

3. Ventrum with dark brown band on setigers 6 & 7; setigers 7-11 chalky white; prominent peristomial flaps present; prostomium without antennae; eyes present (Fig. 3) *Spiochaetopterus costarum*

Ventrum with light brown band beginning on setiger 5; setigers 6-9 (occasionally 6-11) chalky white; antennae present; eyes present or absent (Figs. 4 & 5) 3

4. Eyes present; setiger 5 light brown and setigers 6-9 (occasionally 6-11) chalky white (Fig. 4) .. *Phyllochaetopterus prolifica*

Eyes absent; setigers 5 & 6 light brown and setigers 6-8 chalky white (Fig. 5) *Phyllochaetopterus limicolus*

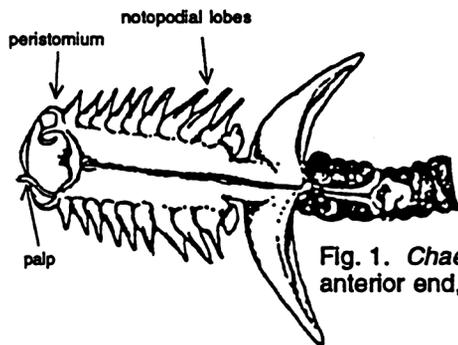


Fig. 1. *Chaetopterus variopedatus*: anterior end, dorsal view.

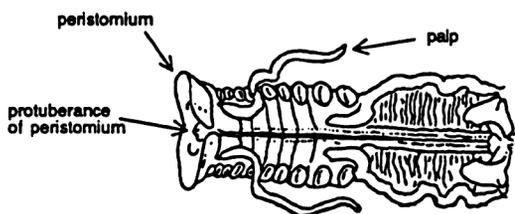


Fig. 2. *Mesochaetopterus* sp.: anterior end, dorsal view.

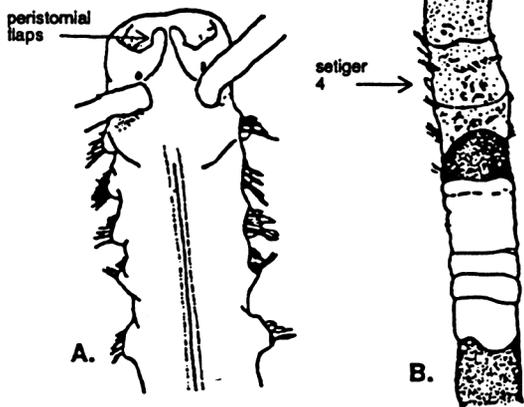


Fig. 3. *Spiochaetopterus costarum*: A. anterior end, lateral view; B. anterior end, ventral view.

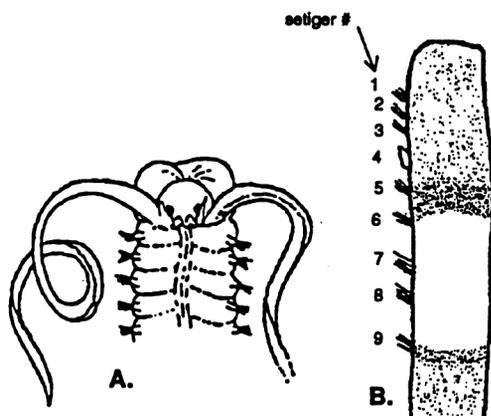


Fig. 4. *Phyllochaetopterus prolifica*: A. anterior end, dorsal view; B. anterior end, ventral view.

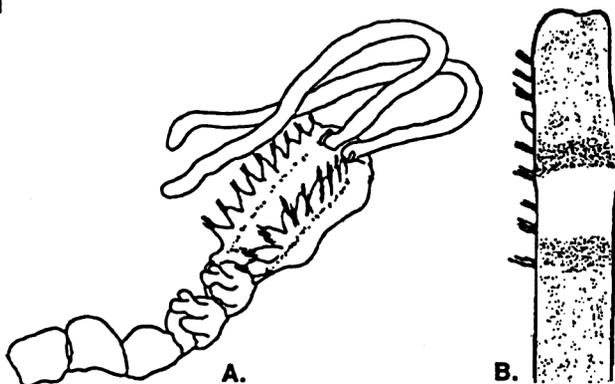


Fig. 5. *Phyllochaetopterus limicolus*: A. anterior end, lateral view; B. anterior end, ventral view.

NOTES ON THE CHAETOPTERIDAE FROM POINT LOMA

Problems Associated with Chaetopterid Taxonomy

Kudenov (1975) recognized that the tubicolous habits of chaetopterids frequently causes poor preservation, making identification that relies primarily on soft body parts difficult. Hartman (1969), Hobson and Banse (1981), and Uebelacher and Johnson (1984), for example, use the shape of the notopodia in the mid-body region, the presence/absence of the small tentacles at the base of the palps, and the length of the palps to distinguish genera. They also use the shape and texture of the tubes for identification. We have found these characters unsatisfactory for identifying many of our chaetopterid specimens.

We do not always have adequate preservation of animals within their tubes, nor do we ever get entire tubes - not only do the processes of sampling and screening destroy tubes, but, in the process of sorting many specimens are removed from their tubes or the tube is broken down to a smaller size that fits the animal. The key uses several characters, such as the presence or absence of a color pattern on the ventrum, the specific color pattern, the presence/absence of eyes, and the number of major spines on setiger 4 to distinguish the common species.

Variations in Color Patterns

Of the characters listed above, ventral color pattern may cause the greatest confusion. The color patterns that we describe differ somewhat from those listed in Hartman's Atlas. For example, Hartman (1969) states that the brown coloration of *Phyllochaetopterus limicolus* occurs on setigers 3-5, whereas we describe the brown coloration on setigers 5 and 6. The setigers of several species are indistinct ventrally, and the setiger on which a pigment patch begins may be difficult to discern, consequently, the beginning or the end of a patch of color may not always appear as described. We tried to be consistent in describing each color patch from the setiger upon which its most anterior edge first appears.

Notes on Individual Species

Chaetopterus variopedatus (Renier, 1804)

Chaetopterus variopedatus has been regarded as a monotypic, cosmopolitan species. Mary Peterson is presently working on a revision of the genus, apparently having documented several differences between North American specimens and the type material. We will continue to record our specimens as *C. variopedatus* until the revision of the genus is published.

Mesochaetopterus sp.

Our specimens of *Mesochaetopterus* appear to be intermediate between *M. taylori* and *M. rickettsii* but they are poorly preserved and incomplete. Our specimens have six mid-body segments, whereas *M. taylori* has three and *M. rickettsii* is reported to have more than 10, and as many as 21. Additionally, Hartman (1969) reports *M. taylori* and *M. rickettsii* from intertidal sands, and low intertidal and estuarine muds, respectively, while our specimens have been collected from silty sediments at approximately 60 m. For the time being our specimens will be designated as *Mesochaetopterus* sp., until further work can determine the status of our specimens.

Phyllochaetopterus limicolus Hartman, 1960

The brown band of *Phyllochaetopterus limicolus* from our samples occurs on setigers 5 and 6, not setigers 3 - 5 as described by Hartman. This specimen is easily recognized by the absence of eyes.

Phyllochaetopterus prolifica Potts, 1914

The specimens of *Phyllochaetopterus prolifica* common off southern California have the characteristics of the species as described in Potts (1914); however, they occur as single individuals whereas previous reports describe large mats of individuals from shallow water. Further work may show other structural or functional differences between the two. For now we will continue to record our specimens as *P. prolifica*.

Spiochaetopterus costarum (Claperede, 1868)

Hartman (1969) describes *Spiochaetopterus costarum* as having a thickened peristomium that surrounds the prostomium, and a brown anterior ventrum from the peristomium to setiger 6 with a white patch present on setigers 7 and 8. Our specimens tend to have a dark brown band on setigers 6 and 7 and a white patch on setigers 7-11. Additionally, the peristomium has large "flaps" that project anteriorly over the prostomium which are not pictured in Hartman's illustrations (p. 219, Fig. 2). Claperede's original description also appears somewhat different from what we have described for our specimens. These discrepancies require further review. For now we will continue to record our specimens as *S. costarum*

Species list

The following species are included in the key:

Chaetopterus variopedatus (Renier, 1804)

Mesochaetopterus sp.

Phyllochaetopterus prolifica Potts, 1914

Phyllochaetopterus limicolus Hartman, 1960

Spiochaetopterus costarum (Claperede, 1868)

References

Hartman, O. 1969. Atlas of Sedentariate Polychaetous Annelids from California. Allan Hancock Foundation, University of Southern California, 812 pp.

Hobson, K. D. and K. Banse. 1981. Sedentariate and archiannelid polychaetes of British Columbia and Washington. Canadian Bulletin of Fisheries and Aquatic Sciences 209: 144 pp.

Kudenov, J. D. 1975. Sedentary polychaetes from the Gulf of California, Mexico. Journal of Natural History 9: 205-231.

Potts, F. A. 1914. Polychaeta from the northeast Pacific. The Chaetopteridae. With an account of the phenomenon of asexual reproduction in *Phyllochaetopterus* and the description of two new species of Chaetopteridae from the Atlantic. Proceedings of the Zoological Society of London: 955-994.

Uebelacher, J. M., and P. G. Johnson (Editors). 1984. Taxonomic Guide to the Polychaetes of the Northern Gulf of Mexico. Final Report to the Minerals Management Service, contract 14-12-001-29-91. Barry A. Vittor & Associates, Inc. Mobile, Alabama. Vol II: Ch. 11.