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REDESCRIPTION OF THE POLYCHAETOUS ANNELID *TYPOSYLLIS ACICULATA* TREADWELL[1]

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The purpose of this paper is to detail the specific characters of a member of the family Syllidae, *Typosyllis aciculata* Treadwell (1945, pp. 1–2), so as to permit its comparison with some other members of the genus which occur in the same or adjacent geographic areas. Examination of the holotype and paratype specimens reveals that the affinities of the species are with some species that have a widely reported range (see discussion below).

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Typosyllis aciculata Treadwell

DESCRIPTION: Two small specimens come from among rocks at Pacific Grove, California, July 19, 1939. The holotype, in two pieces, measures 8.5 mm. in length and 0.65 mm. at its greatest width which is around the twentieth setigerous segment. There are 76 setigerous segments in the holotype and over 80 in the paratype. The paratype lacks a posterior end. The worm is brown, with dark intersegmental furrows.

The prostomium (fig. 1) is pentagonal in shape and slightly

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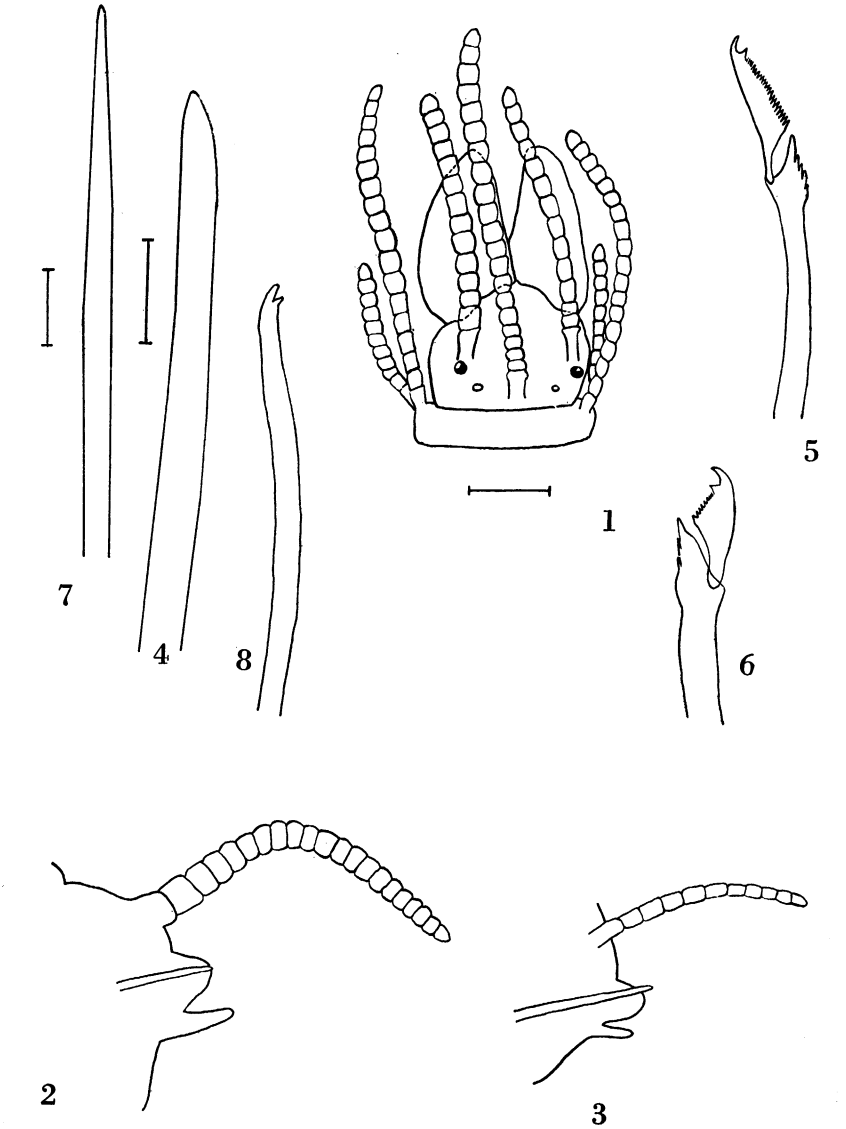

FIGS. 1–8. *Typosyllis aciculata* Treadwell. 1. Anterior end, holotype. Scale: 0.1 mm. 2. Sixteenth parapodium, holotype; six composite setae omitted. Magnification as in figure 1. 3. Sixty-eighth parapodium, holotype; five composite and one simple setae omitted. Magnification as in figure 1. 4. Aciculum from sixty-eighth parapodium, holotype. Scale: 0.03 mm. 5. Superior composite seta from sixty-eighth parapodium, holotype. Magnification as in figure 7. 6. Inferior composite seta from sixty-eighth parapodium, holotype. Magnification as in figure 7. 7. Superior simple seta from sixty-eighth parapodium, holotype. Scale: 0.01 mm. 8. Inferior simple seta from sixty-seventh parapodium, holotype. Magnification as in figure 7.

broader than long. It bears a pair of palps, three antennae, and two pairs of eyes. The palps are joined at their bases for one-third their length; they are triangular in shape and about twice as long as wide. The median antenna arises behind the midpoint of the posterior eyes. The lateral antennae originate just in front of the anterior pair of eyes. They are articulated, each with a long base and 13 articles. The four eyes are in trapezoidal arrangement with the anterior pair, which are provided with a lens, farther apart and twice as large as the posterior pair.

The peristomium bears two pairs of moniliformed tentacular cirri with the dorsal pair composed of 17 articles and the ventral pair of 10 articles.

The pharynx, which is smooth at its anterior margin, is six segments long and extends from the fourth to the ninth setigerous segment. There is a single, colorless, anterior tooth.

The proventriculus begins at the tenth setigerous, and extends, for eight segments, to the seventeenth segment.

The anterior parapodial lobes are rectangular in shape (fig. 2); each has an articulated dorsal cirrus, a conical lobe with a single, pale yellow aciculum and six to 10 composite setae, and a short, slender, ventral cirrus. The anterior dorsal cirri are composed of 20 to 23 articles.

The posterior parapodia (fig. 3) are smaller in size than those in front, but they are rectangular as are those in front. These posterior lobes have single, large, pale yellow, superior acicula (fig. 4); they have a smooth tip that projects beyond the tissue in the posterior lobes. Acicula in the anterior segments are smaller in size than those in back. There are five to six composite setae in the posterior lobes. The ventral cirrus is short and slender as in the anterior lobes.

The pale yellow compound setae vary little in anterior, middle, and posterior body regions, but within a lobe the appendage in the superior setae (fig. 5) is longer than those inferior (fig. 6). The appendage has an apical and subapical tooth and a number of spinelets along the cutting edge. One side of the shaft bears three or four spines.

There are two kinds of simple setae present in posterior segments. In one the end has an entire tip (fig. 7), and in the other there is a subapical tooth (fig. 8). The entire ones are located just below the aciculum, and the bifid ones are below the com-

posite setae. Both kinds of simple setae were not observed within the same lobe, but since many setae have been broken, it is impossible to determine what the exact condition is. In the holotype no simple setae were observed anterior to segment 68. In the paratype, however, only simple setae with an entire tip occur at least from segment 55, but, as with the holotype, a number of setae have been broken.

There is only one anal cirrus remaining; it is composed of 16 articles.

The holotype is No. 3386 and the paratype is No. 3365 in the collections of the American Museum of Natural History.

REMARKS: In the original account, the palpi were described as asymmetrical and entirely separated at their base. However, in both holotype and paratype specimens one palpus is partially turned under, thus giving it an asymmetrical appearance; actually they are symmetrical. The palpi are fused for one-third their length, as shown in figure 1. Contrary to the first account, the median antenna is present on the holotype. I find the pharynx to begin at the fourth setigerous segment, not the sixth setigerous segment. Figure 2 of the original report is of a median parapodium which was described as being roughly conical in outline and bearing a dorsal cirrus composed of 53 articles. No lobe was observed to have this shape, and no dorsal cirrus was seen with more than 23 articles. In figure 3 of the original account the dorsal surface is down instead of up, as shown by the position of the aciculum. Only simple bifid setae were described in the first report which possibly are the setae represented in figure 8. No simple setae with an entire tip were described.

DISCUSSION: The genus *Typosyllis* Langerhans, 1879, is a large, ill-defined category with many species for which the affinities are poorly understood. As herein defined, I refer to those species that have similar composite setae in all parapodia and that may or may not have simple setae present in posterior lobes. The prostomial antennae and dorsal cirri are jointed and often appear moniliform. The palpi are either well separated or somewhat fused at their bases. The prostomial eyes number usually four in various arrangements. The prostomial antennae consist of a median and a pair of lateral ones that are inserted on the dorsal surface.

In these respects *Typosyllis* Langerhans, with type *T. krohnii*

(Ehlers), comes near *Syllis* Savigny, 1818, with type *S. monilaris* Savigny. As I here interpret the difference, in species of *Typosyllis* Langerhans all parapodia have similar composite setae and, if present, simple setae only in the posterior region; in the species of *Syllis* Savigny, restricted, there are simple setae in the middle or anterior parapodia.

Typosyllis aciculata Treadwell has affinities with *T. variegata* (Grube), *T. krohnii* (Ehlers), and *T. prolifera* (Krohn). It agrees with these species in having composite setae with a subapical tooth in all parapodia and simple setae both above and below in the posterior lobes.

Typosyllis aciculata differs notably from these species in the following respects: (1) the number of articles in the dorsal cirri is the same; they do not alternate long and short; (2) the simple setae in *T. aciculata* are entire above and bifid below; in *T. variegata* and *T. prolifera* all simple setae are bifid; in *T. krohnii* the simple setae are as in *T. aciculata;* and (3) the number of articles in the antennae and tentacular cirri in *T. aciculata* is fewer than for the other species (Fauvel, 1923, pp. 259–262).

Typosyllis variegata, T. prolifera, and *T. krohnii* have been reported from the European area, but only *T. variegata* has been taken from eastern Pacific waters. Here it is known from the Galápagos Islands and Panama (Monro, 1933, pp. 28–9) and from Acapulco, Mexico (Rioja, 1941, p. 694).

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