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TWO NEW SPECIES AND THREE NEW RECORDS OF BENTHIC POLYCHAETES FROM PUGET SOUND (WASHINGTON)[1]

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We describe here two new polychaete species, give three new records for Puget Sound, Washington, and comment on one species known already from this region. The animals were found among the polychaetes of twenty-one 0.1 m^2 grab samples taken primarily in spring 1963 (see Lie, in press). Locations and full descriptions of the sampling stations, including full species lists, can be found in that paper.

Family Phyllodocidae

Eulalia (*Pterocirrus*) *macroceros* (Grube)

Figure 1a–c

E. (*Sige*) *macroceros*.–Berkeley and Berkeley, 1948, p. 48.
E. macroceros.–Banse, 1959, p. 423.

Three specimens were found in April on station 2 near Seattle (mean depth, 172–216 m; silt). There is also material of this species in the U. S. National Museum, collected by E. and C. Berkeley near Nanaimo, and by M. H. Pettibone in the San Juan Archipelago and Puget Sound, from the intertidal zone to 60 m depth, from rocky and sandy bottoms, as well as from "mud and algae" (USNM Nos. 26846–49; 26851; 26853; 32460; 32673).

The prostomium is cordiform. The occipital notch is not always distinct except by its color. The second and third tentacular segments

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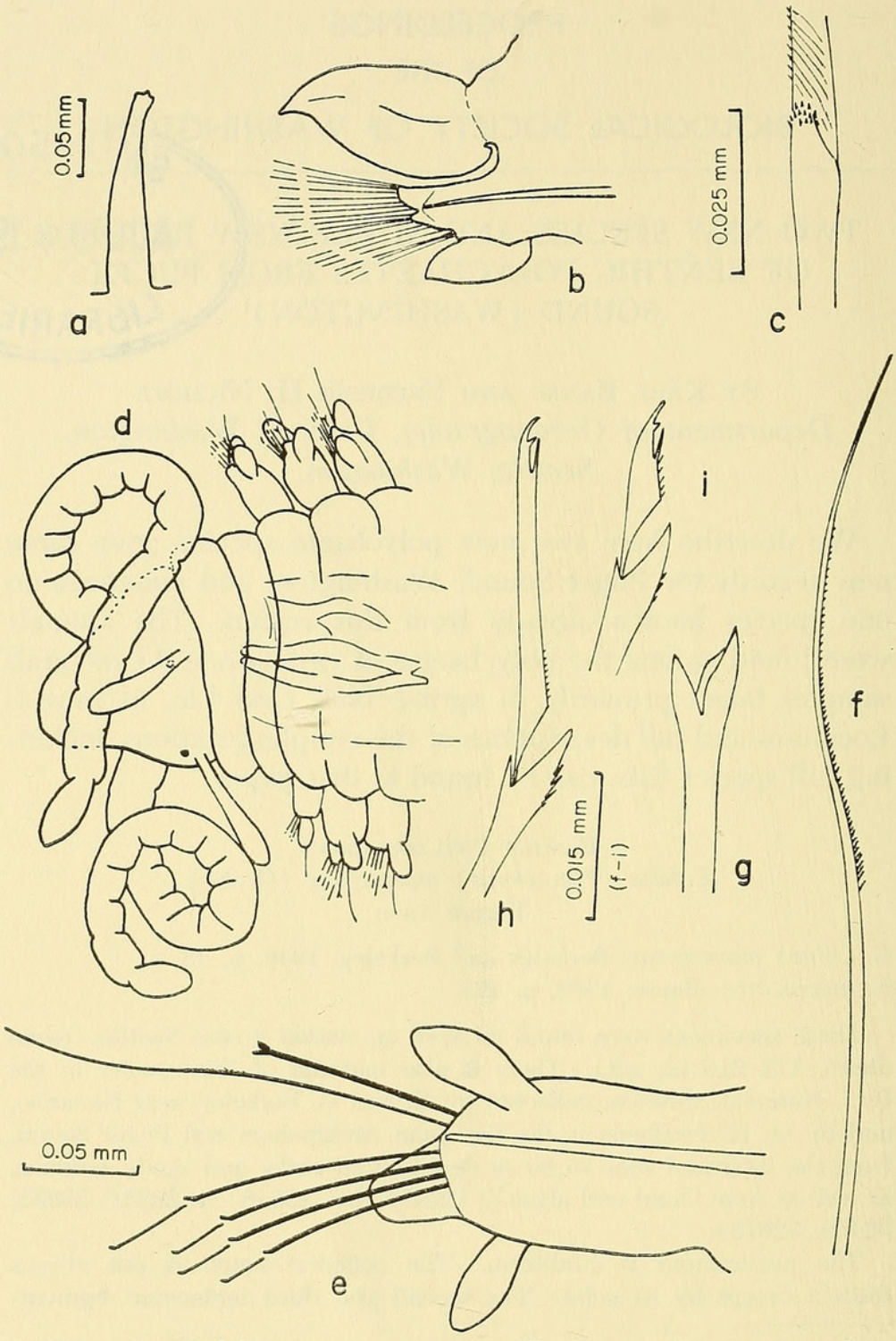

FIGURE 1. *Eulalia macroceros:* a, papilla from proboscis; b, outline of median parapodium; c, detail of seta. *Protodorvillea recuperata* new species: d, dorsal view of anterior end slightly from the right side; e, posterior view of 40th parapodium of paratype; f–i, setae from 40th parapodium: f, capillary supraacicular seta; g, Y-shaped seta; h, uppermost and i, lowermost compound subacicular setae.

are separated dorsally and are clearly visible. There is a small parapodial lobe, without setae, on the third tentacular segment. The proboscis is fully covered, feltlike, with papillae about 120 μ long (Fig. 1a). Dorsal cirri are broadly lanceolate (Fig. 1b) and reach almost to the middorsum. The shafts of the setae are rounded with numerous small spines which are slightly bent inward (Fig. 1c). The blades are long (approximately 150 μ) and strongly serrated throughout their length. Complete animals are a few centimeters long. All specimens belong to the Mediterranean species, which is not identical with *Sige fusigera* Bergström from Northern Europe (Banse, 1959).

Numerous eggs of 65 to 70 μ diameter occur in June and August; all material from the U. S. National Museum was collected in the summer. The color in alcohol is yellow-brown with a uniform violet-brown dorsum.

Family Dorvilleidae

Protodorvillea recuperata new species

Figure 1d–i

Types: Holotype, USNM 36282. Paratypes (2), USNM 36283. All types from station 5, 47°10′48″ N, 122°50′00″ W; 15–37 m depth, in medium sand (May, 1963).

Description: The holotype has 67 setigers and is 5.3 mm long (without anal cirri). Its greatest width, at about the 30th setiger, is 0.60 mm with and 0.34 mm without parapodia. A paratype, also complete, has 55 setigers and is 4.8 mm long. There are some additional specimens.

The blunt prostomium (Fig. 1d) carries two club-shaped antennae and two pseudo-annulated palps with small, oval terminal joints. Only one of the preserved specimens has eyes. No noteworthy features beyond those common for *Protodorvillea* and *Stauronereis* could be seen in the undissected jaws. The outer row of the upper jaws contains 20 to 25 loose plates. The prostomium is followed by two apodous segments. All subsequent segments have parapodia with dorsal and ventral cirri inserted near their tips, and a distinct presetal lip (Fig. 1e) which occasionally may be withdrawn. There are no aciculae in the dorsal cirri. A capillary seta with fine teeth (Fig. 1f) and a dorsal Y-shaped seta (Fig. 1g) are present from the first setiger. Ventrally there are one, rarely two, compound setae with fairly long blades (Fig. 1h), two to four similar setae with blades about half as long, and a lowermost compound seta with a short blade (Fig. 1i). The shafts of these setae have serrated tips; the tips of the blades are bifid with subterminal spines resembling those of some Hesionidae. The pygidium is flattened and carries one pair of annulated dorsal cirri about 0.5 mm in length, and another pair of about 0.1 mm length.

The specimens are without color. The intestines are almost empty, but boluses in the posterior part of some animals contain some small sand grains.

The name refers to an accident during the preparation of the description.

Diagnosis: A small *Protodorvillea* species with short, smooth, club-shaped antennae. Slender parapodia with a presetal lip. A dorsal cirrus and a Y-shaped seta from the first parapodium onward.

Habitat: Southern Puget Sound, on stations 5, 6, and 8; 10 to 40 m depth, on medium sand with 10 to 25 percent mud, and some gravel.

Differential Diagnosis: The genus *Protodorvillea* has been established by Pettibone (1961). Since then, *P. biarticulata* has been described by Day (1963), and *P. minuta* by Hartman (1965); synonyms have been discussed by Banse and Hartmann-Schröder (1964). *P. recuperata* can be distinguished from the other species with antennae, well-developed palps, and dorsal cirri on the first setiger, i.e. *P. biarticulata* Day, *P. gracilis* (Hartman), and *P. kefersteini* (McIntosh), as follows: The antennae are fairly short and not articulated as in *P. biarticulata;* the articulation is indistinct also in *P. kefersteini.* There is a presetal lip which is replaced by a postsetal lip in *P. kefersteini;* lips are entirely absent in *P. gracilis.*

Stauronereis japonica (Annenkova)

Staurocephalus japonica.–Ushakov, 1955, p. 246.

One specimen from station 8 in southern Puget Sound (10–21 m depth, medium sand). New for the eastern Pacific. Previously known from the Seas of Japan and Okhotsk.

FAMILY TEREBELLIDAE

Lanassa venusta (Malm)

L. venusta.–Hessle, 1917, p. 205.

There are six poorly to moderately well-preserved specimens. Eyespots are not visible. The lateral lappets are very small. Capillary setae start on the fourth segment, and are found on 11 setigers. They have narrow wings and finely serrated tips. The uncini are arranged in double rows in the four first abdominal setigers as described by Hessle (1917). A specimen collected in May carried moderately numerous eggs.

Found on stations 3 and 4 near Seattle, and 6 in southern Puget Sound. A doubtful identification comes from station 8 nearby. Excluding the shallow, sandy last-named station, the depth range of the records is 17–40 m, very fine to fine sand. New for Puget Sound. Previously known in the North Pacific from the Bering Sea.

Lysilla pacifica Hessle

L. pacifica.–Ushakov, 1955, p. 403.

Found on station 4 near Seattle. 10–18 m depth, very fine sand. New for the eastern North Pacific. Previously known from the Sea of Japan and the Bonin Islands.

FAMILY SABELLIDAE

Chone bimaculata new species

Figure 2a–j

Types: Holotype, USNM 36284. Paratypes, USNM 36281 (1) and 36280 (4). All from station 5, 47°10′48″ N, 122°50′00″ W; 15–37 m depth, on medium sand (May, 1963).

Description: There are several complete, mature specimens in addition to the types. Mature females with eight thoracic and 40 to 45 abdominal setigers are up to 17.5 mm long, of which 7.5 mm are contributed by the tentacular crown. The greatest width of the body is 1.0 to 1.1 mm.

The tentacular crown consists of about eight pairs of pinnate radioles connected by a very thin membrane for at least half of their length. The radioles have a flange beyond the membrane but the free end beyond the pinnate section is narrow (Fig. 2a). The free end, 2 mm long in the holotype, contributes one-fourth to one-third of the total length of the radioles. Ventrally and dorsally there are one to two pairs of free filaments, about half as long as the tentacular crown.

The collar (Fig. 2b) is higher ventrally than laterally. Dorsally it is folded; in specimens other than the holotype, the folding is more clearly seen than shown in the figure. Setigers are weakly biannulate. On the first setiger, there are otocysts, but no eyespots; on the second setiger is a girdle of glandular cells, posterior to the setae. The fecal groove is not very distinct. The pygidium is pointed (Fig. 2c).

In the thoracic setigers, except for the first one, there are five to six limbate setae (Fig. 2d), six to seven spatulate setae with long tips (Fig. 2e), and the same number of bayonet setae (Fig. 2f) per ramus. The latter setae accompany the spatulate bristles, just reaching to the base of their blades. There are six to eight long-handled hooks in setigers 2 through 8, with delicate wings at the backs of their crowns (Fig. 2g). In the abdomen there are two bundles of three or four capillary setae on each side; these have broad wings but otherwise are more slender than those of the thorax (Fig. 2h). About 12 uncini (Fig. 2i) occur in the midabdomen per ramus.

The color of the preserved animal is pale yellow. Approximately 10 eggs per segment are found in the thorax and the anterior two-thirds of the abdomen; they are polygonal, up to 200 $\mu \times 150\ \mu$.

To distinguish the new species more easily from *C. suspecta* Kröyer, specimens were stained in a dark-green solution of methyl green in 70 to 80 percent ethyl alcohol for about 15 min, following the method used by Hofsommer (1913). The color was differentiated for some time in 70 to 80 percent alcohol. The most intensive coloration in the three animals checked is found laterally on the collar. The margins of the collar, an area at the distal, ventral side of the collar, the dorsal folded part of the collar, and the ring on the second setiger, are free of glands that are stained. Less clearly distinguished from the diffuse color of the stained epidermis is an unstained ring around the middle of each setiger. On the ventral side of one well-preserved specimen occur

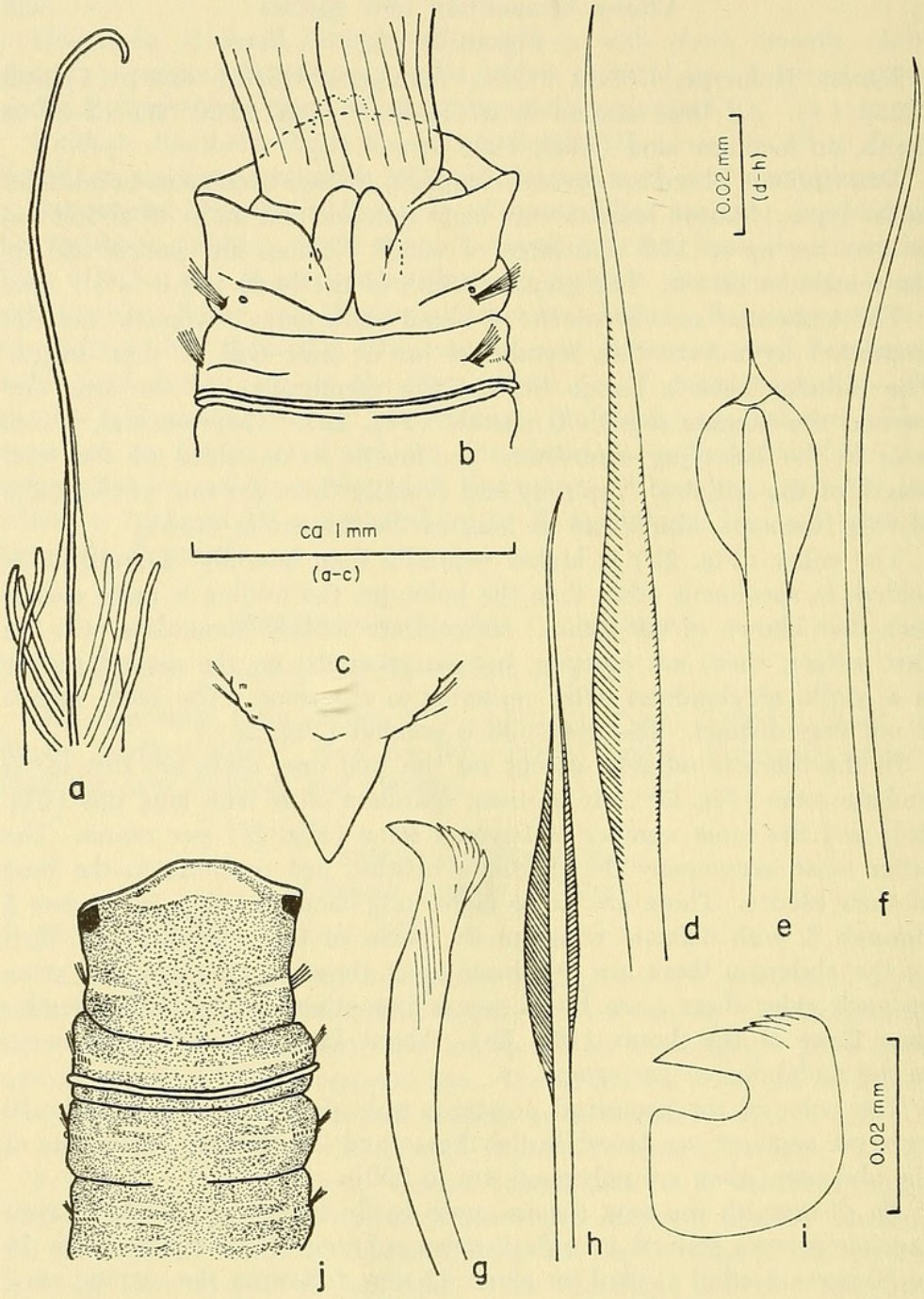

FIGURE 2. *Chone bimaculata* new species: a, tip of radiole; b, dorsal view of anterior end of the body with base of tentacular cirri; c, dorsal view of posterior end of body; d, thoracic capillary seta; e, thoracic spatulate seta; f, thoracic bayonet-shaped seta; g, thoracic uncinus; h, abdominal capillary seta; i, abdominal uncinus; j, color pattern of stained animals (see text); body outline schematic.

unstained areas parallel to this ring, from the third thoracic setiger through the first few abdominal setigers (Fig. 2j).

The name refers to the two glandular areas on the collar, which are very distinct in stained specimens.

Diagnosis: A *Chone* species with a girdle of glands on the second setiger. Tentacular crown relatively long; free ends of the radioles long and thin. Collar protruding ventrally farther than laterally; folded dorsally. Spatulate setae with a long mucron and accompanied by bayonet setae.

Differential Diagnosis: The following *Chone* species are known to have a glandular ring on the second setiger: *C. cincta* Zachs, recently considered to be a synonym of *C. teres* Bush (Chlebovich, 1916); *C. filicaudata* Southern; *C. paracincta* Hartmann-Schröder; *C. rosea* Hartmann-Schröder; and *C. suspecta* Kröyer. All have spatulate setae with distinct points, but bayonet-shaped bristles have been reported only for *C. filicaudata, C. striata, C. suspecta,* and *C. teres. Chone filicaudata* is distinguished by the abdominal appendage and its abdominal uncini, which have narrow gaps between the rostra and the bases. *Chone teres,* when adult, is very much larger (56 mm) than all other species with glandular rings, and among the group with bayonet bristles it is the only species where the tentacular crown is relatively short (about one-seventh of the total length). *Chone striata* has a relatively short tentacular crown (4.8 mm out of 16 mm) and an almost level collar; also the free ends of the radioles are broad. The glandular ring of *C. suspecta* is uniquely situated on the third setiger; also, the bayonet bristles are not smooth as in *C. bimaculata.* Finally, the mucus glands on the collar of *C. suspecta* and of *C. bimaculata* are arranged differently. In the former species the collar is uniformly stained excepting the margin which remains whitish. There is a dark spot near each bundle of setae on the first setiger. Paired, small, unstained areas, parallel to the full unstained ring in the middle of the segments, appear on the second setiger.

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