THE SYLLIDAE (POLYCHAETOUS ANNELIDS) FROM JAPAN (III)*

EUSYLLINAE

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With 11 Text-figures

Subfamily EUSYLLINAE RIOJA, 1925

Four genera of EUSYLLINAE have been reported from Japan; they are *Amblyosyllis*, *Brachysyllis*, *Eusyllis* and *Odontosyllis*. Two genera, *Pionosyllis* and *Syllides* with two new species are added. *Brachysyllis* IMAJIMA and HARTMAN (1964) is referred to *Dioplosyllis* GIDHOLM (1962). *Eusyllis* previously known for only one species, *E. japonica* IMAJIMA and HARTMAN (1964), has five additional species.

Key to genera of EUSYLLINAE from Japan

1. Body short, with few segments; prostomium with a pair of winglike nuchal appendages; pharynx with six pentacuspid processes ..... *Amblyosyllis*
1. Body long, with many segments; prostomium without winglike nuchal appendages; pharynx otherwise 2
2. Palpi large, lingulate, about twice as long as prostomium and ventrally directed; parapodia laterally prolonged ..... *Dioplosyllis*
2. Palpi small, shorter than prostomium and not ventrally directed; parapodia short, conical... 3
3. Pharynx with a series of recurved teeth, without a middorsal tooth; dorsal cirri smooth, short ..... *Odontosyllis*
3. Pharynx with smooth or minutely denticulated anterior margin, with a middorsal tooth; dorsal cirri smooth or indistinctly annulated 4
4. Pharynx with denticulate anterior margin; dorsal cirri partly annulated ..... *Eusyllis*
4. Pharynx with smooth anterior margin; dorsal cirri smooth or annulated 5
5. Dorsal cirri smooth ..... *Pionosyllis*
5. Dorsal cirri, except first two pairs, distinctly annulated ..... *Syllides*

Amblyosyllis GRUBE, 1857

Type: *Amblyosyllis rhombeata* GRUBE, 1857

The body consists of 16 segments of which all have setae but the first and last two. The prostomium has three long antennae, four eyes and a pair

* Continued from Part 2 (XIV (1), pp. 27-83).

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of long palpi separated to the base. Antennae and dorsal cirri are long, threadlike, and articulated along their length, or only wrinkled. A pair of winglike nuchal appendages arises from the posterior margin of the prostomium and extends to the middle of the second segment. The pharynx terminates distally in a circlet of 6 or 7 bi-, tri- or pentacuspid teeth. The proventriculus is ovoid. Ventral cirri are cirriform. Setae are composite falcigers; each has a bifid tip.

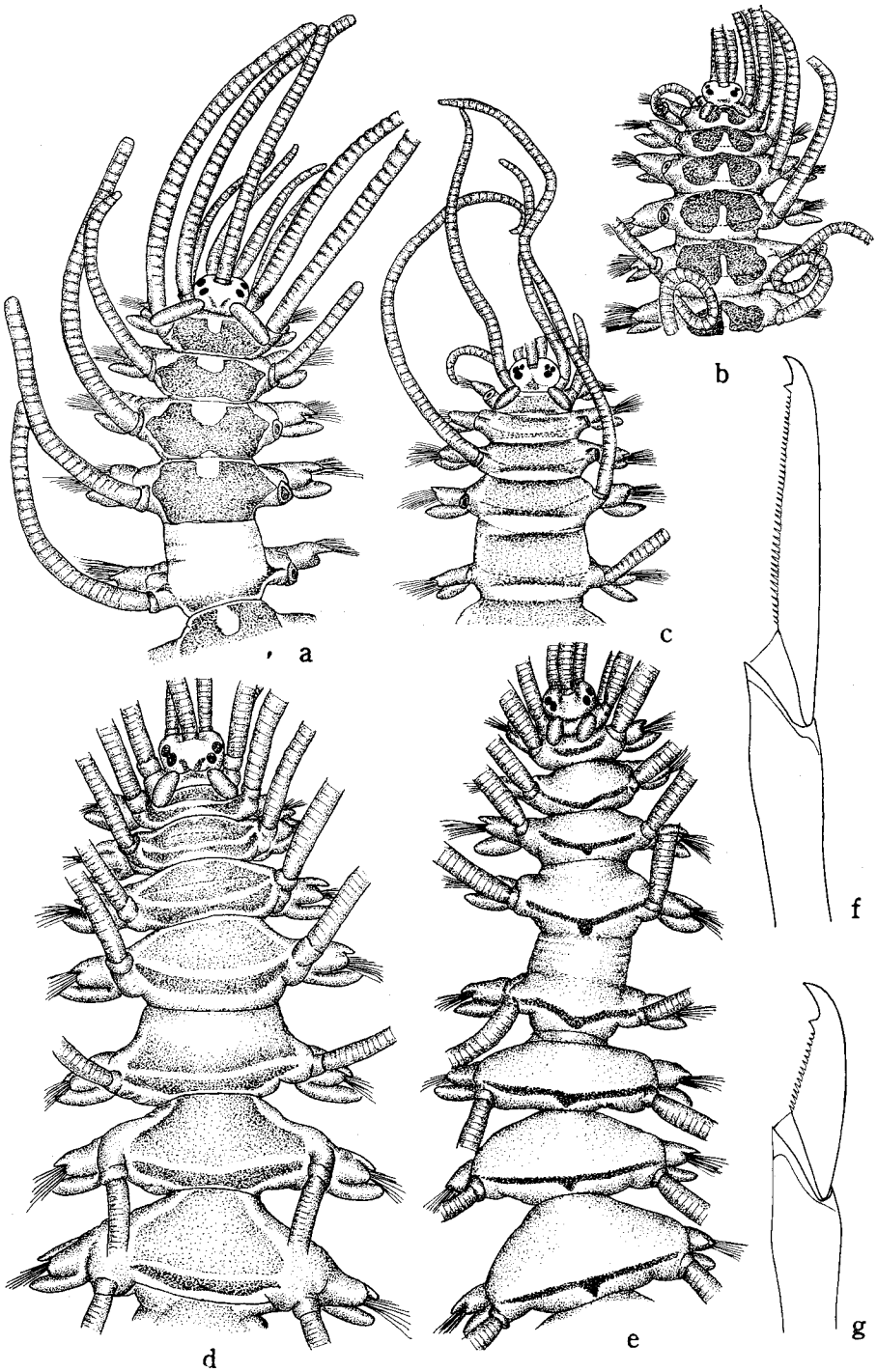
Amblyosyllis speciosa IZUKA, 1912

(Text-fig. 27, a-g)

Amblyosyllis speciosa IZUKA, 1912, pp. 183–184, pl. 20, fig. 1; IMAJIMA and HARTMAN, 1964, pp. 106–108, pl. 23, figs. a–i.
Amblyosyllis nigrolineata OKADA, 1934, pp. 317–320, text-figs. 1, 2.

Collection: Shirikishinai, from littoral depths to 140 m; Asamushi; Onagawa; Misaki; Sugashima; Seto; Tamano; Usa; Noto-ogi, in intertidal zone.

Description: The largest specimen from Misaki measures 15 mm long and 3.7 mm wide including parapodia in the median region. The body consists of 13 setigerous, and 3 achaetous segments; the first one and last two segments lack parapodia. All setigerous segments except the fifth one are about twice as broad as long; the fifth is approximately square (fig. a). The last two achaetous segments are longer than wide. The color patterns of the dorsum are represented by at least five kinds: (1) dark purple with a white spot at the anterior part of all segments except the first and sixth segments (fig. a), from Shirikishinai; (2) dark brown, saddle-shaped band across the dorsum of each visible segment (fig. b), from Shirikishinai and Misaki; (3) pale brown bands across the dorsum alternating with a pale band at segmental constrictions (fig. c), from Shirikishinai; (4) brownish purple with a white transverse band across between the dorsal cirri, and posterior part of the white band is darker than the anterior (fig. d), from all localities except Shirikishinai; (5) a brown transverse band with a median tubercle midway between the dorsal cirri (fig. e), from Misaki. The prostomium is subglobular and has two pairs of reddish eyes. A median antenna arises between the anterior eyes, and lateral ones arise from the anterior margin of the prostomium. A pair of nuchal appendages is inserted at the posterior part of the prostomium; each reaches to the second segment; they are completely free from each other. The pharynx has six pentacuspid teeth arranged in a circlet; each process has one large cusp with two smaller ones on each side. The proventriculus extends from segment 5 to 6. The tentacular and dorsal cirri are very long, and distinctly annulated except at their bases. Parapodia are prolonged laterally; each terminates in a superior triangular lobe. Ventral



Text-fig. 27. *Amblyosyllis speciosa* IZUKA. a, b, c, d, e, anterior ends, in dorsal view, a, b, c, ×15; d, ×32; e, ×30; f, superior compound seta, ×630; g, inferior compound seta, ×630.

cirri are spindle-shaped. Setae are bidentate compound falcigers with long or short appendages; superior setae (fig. f) have a long appendage with serrations along the cutting margin, and inferior ones (fig. g) are about half as long as the dorsal ones. Acicula number 8 in a parapodium. The pygidium has two long anal cirri.

The dorsal color pattern of (4) above, is similar to that of *Amblyosyllis lineata* GRUBE (1864), but the pharynx of the latter has six large teeth, each tricuspid, instead of pentacuspid.

Although specimens have at least 5 different dorsal color patterns, all show the same features in other characteristics.

Distribution: Northern to southern Japan.

Dioplosyllis GIDHOLM, 1962

Type: *Dioplosyllis cirrosa* GIDHOLM, 1962

The body is elongate or ellipsoid. The prostomium is wider than long and has two pairs of eyes. Three antennae are slender and smooth, not annulated. Paired palpi are large and lingulate, and ventrally directed. A pair of transverse nuchal ridges may be present along the posterior margin of the prostomium. The occipital flap is lacking. The pharynx is distally surrounded by a circlet of soft papillae; it has a subterminal, middorsal tooth and has or lacks a few, small teeth. Two pairs of tentacular cirri are present on the first visible segment. Dorsal cirri are long, cirriform and not articulated; ventral cirri are cirriform and shorter. Parapodia are long, compressed cylindrical and provided with compound falcigers.

Brachysyllis IMAJIMA and HARTMAN (1964, p. 108) agrees with *Dioplosyllis* GIDHOLM (1962, p. 249) in its characteristics; the latter has priority.

Dioplosyllis japonica (IMAJIMA and HARTMAN, 1964), new combination

Brachysyllis japonica IMAJIMA and HARTMAN, 1964, pp. 108–110, pl. 24, figs. a–i.

Occurrence: Atokous specimen from off Shirikishinai, in 140 m; epitokous specimen from Shirikishinai in the littoral zone.

Diagnosis: An atokous specimen lacking a posterior end measures 24 mm long for 13 setigerous segments; in the median region it is 2.3 mm wide without, and 6.5 mm with parapodia. The body is creamy white, without color pattern. The prostomium is broader than long; there are three antennae and two pairs of dark purple eyes. A pair of transverse nuchal ridges is present along the posterior margin of the prostomium. The large palpi are thick, flat and tongue-shaped, and fused only at their bases. Each palpus has

a small conical appendage. The pharynx is distally surrounded by 10 soft papillae. A large middorsal tooth is present a considerable distance from the anterior margin. The anterior margin of the pharynx is smooth in atokous specimen; in an epitokous specimen it has a row of 6 distally curved teeth. The proventriculus extends from segment 5 to 8. Tentacular and dorsal cirri are very long and smooth or irregularly wrinkled. The parapodium is prolonged from the lateral sides of the body so that its base is about two-thirds as long as the body is wide. The ventral cirri are smooth and extend distally to the tip of the setal fascicle. Setae are compound falcigers with a secondary tooth; their cutting margin is smooth. In the epitokous specimen a tuft of hairlike swimming setae emerges below the base of the dorsal cirrus, from the sixth parapodium.

Dioplosyllis japonica differs from *D. cirrosa* GIDHOLM from Roscoff, France, in that (1) each palpus has instead of lacks a small accessory terminal lobe; (2) two nuchal ridges on the prostomium are present instead of absent; (3) distal papillae of the pharynx number 10 instead of 13; (4) compound falcigers have smooth instead of distinctly serrated cutting margin, and (5) the proventriculus extends from segment 5 to 8 instead of 13 to 17.

Distribution: Northern Japan.

Eusyllis MALMGREN, 1867

Type: *Eusyllis blomstrandi* MALMGREN, 1867

The body is arched dorsally and flattened ventrally. The prostomium is suboval or subrectangular. There are two pairs of large reddish eyes and usually an additional pair of small ocular spots. Palpi are broadly triangular and slightly fused at the base. The pharynx terminates in 10 soft papillae and has a middorsal tooth. The anterior margin of inner wall is finely denticled entirely or only partly. Antennae, tentacular cirri and anterior dorsal cirri are distinctly or indistinctly annulated, and succeeding cirri are smooth. A semicircular occipital flap is present or not present on the tentacular segment; it covers the posterior part of the prostomium. Parapodia are short and conical; they have emerging fascicles of composite falcigers. Ventral cirri are short and conical.

Key to species of *Eusyllis* from Japan

1. Prostomium covered with an occipital flap 2
1. Prostomium not covered with an occipital flap 3
2. Distal end of pharynx with a circlet of subequal denticles; without a simple superior seta in most setal fascicles; aciculum with mallet-headed tip .....*Eusyllis japonica*
2. Distal end of pharynx dorsally smooth and ventrally denticulate; with a simple, slender superior seta in most fascicles; aciculum with distally bent tip.....*Eusyllis irregulata*

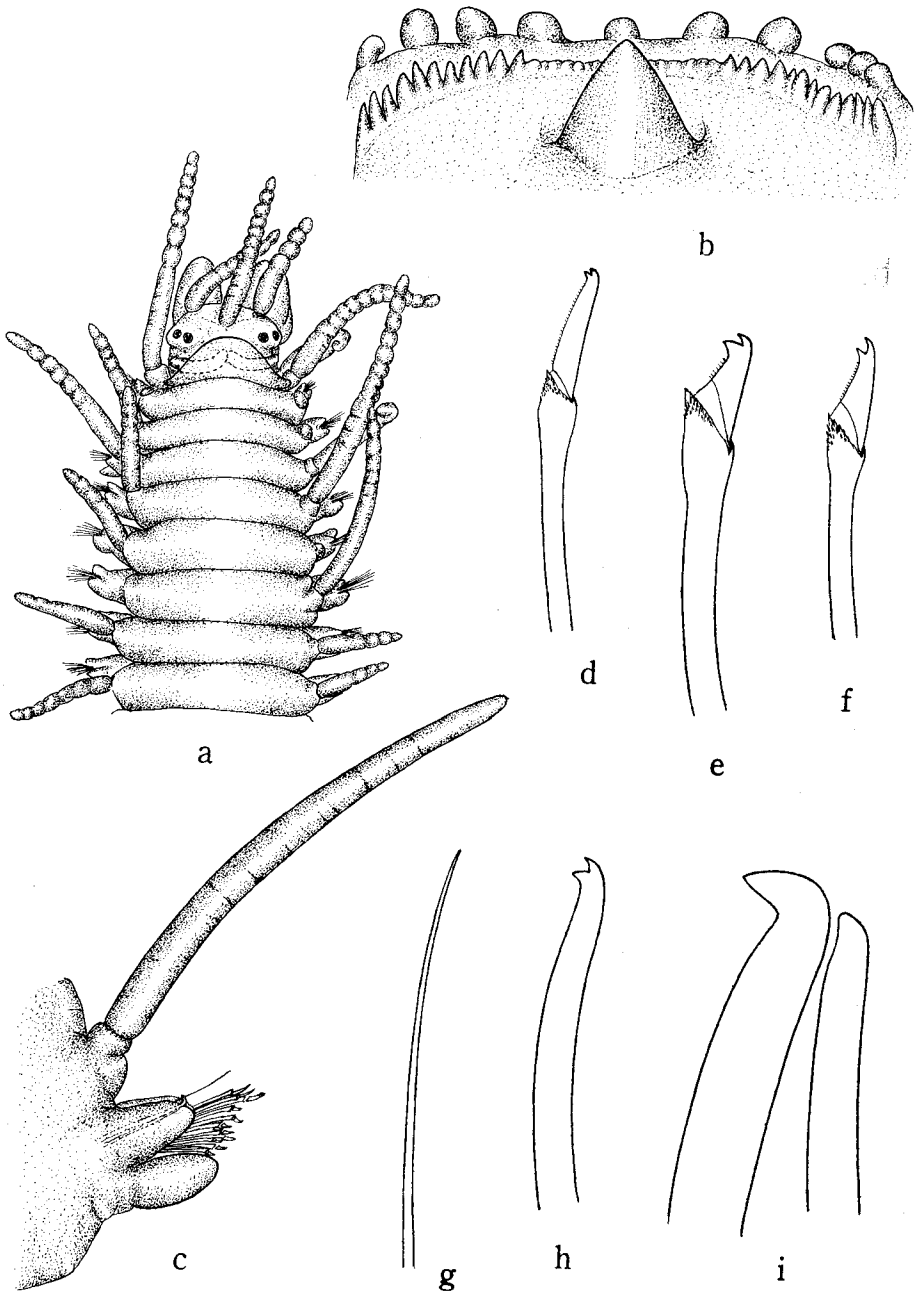
3. Ventral cirri of first setiger foliaceous and much larger than those following; anterior margin of pharynx not uniform.....*Eusyllis habei*
3. Ventral cirri of first setiger not enlarged; anterior margin of pharynx uniform..... 4
4. Compound seta with distal hood; each segment triannulated .....*Eusyllis inflata*
4. Compound seta without distal hood; segments without annulation 5
5. Median dorsal cirri 2 to 3 times as long as body is wide; setal appendage long .... *Eusyllis longicirrata*
5. Median dorsal cirri two-thirds as long as body is wide; setal appendage short .... *Eusyllis blomstrandi*

Eusyllis irregulata n. sp.

(Text-fig. 28, a-i)

Collection: Off Cape Shiriyazaki, in 140 m; Tamano, in 3 m.

Description: The complete specimen measures 9 mm long and 0.8 mm wide for 67 setigerous segments. The body is yellowish white and has no color markings. The prostomium is broader than long; there are two pairs of reddish eyes in trapezoidal arrangement (fig. a). A pair of nuchal ridges is present along the posterior margin of the prostomium; each is slightly turned medially. These ridges are covered by an occipital flap arising from the tentacular segment. The anterior margin of the occipital flap is smooth and convex; it extends forward to the prostomium. Palpi are broadly triangular and about as long as the prostomium; they are fused only at their bases. A median antenna arises in front of the center of the prostomium and it is about twice as long as the prostomium. Lateral antennae arise from the anterior margin of the prostomium; each is about two-thirds as long as the median antenna. The distal half of each antenna is distinctly annulated and the basal half is wrinkled. The pharynx is surrounded by 10 soft papillae. The anterior margin of the pharynx is dorsally smooth and ventrally denticulated by spindlelike teeth, numbering about 25 (fig. b). The middorsal tooth is large and its tip protrudes beyond the anterior margin of the pharynx. The proventriculus extends from setigerous segment 8 to 15. Dorsal cirri alternate so that the long cirri are slightly longer than the body is wide, and the short cirri are about two-thirds as long; they are irregulary wrinkled (fig. c). Normal parapodia are short and conical; each has setal fascicles emerging between the two lobes. Setae are bidentate compound falcigers. The superior setae numbering 3 to 5 have appendages which are slenderer and longer than those in inferior position (fig. d); the latter have an appendage in which the subterminal tooth is triangular and much larger than that the superior one (fig. e). The cutting margins of the appendages have minute serrations. The superior seta of the first parapodium has a sharp terminal and a secondary tooth (fig. f). From the 17th or 20th parapodium a simple seta is present just above the acicula and it is distally tapered (fig. g).



Text-fig. 28. *Eusyllis irregulata* n. sp. a, anterior end, in dorsal view, ×55; b, anterior part of pharynx opened by dissection, ×190; c, 23th parapodium with long dorsal cirrus, in anterior view, ×120; d, superior compound seta from 20th parapodium, ×950; e, inferior compound seta from same parapodium, ×950; f, superior compound seta from 1st parapodium, ×950; g, superior simple seta from 20th parapodium, ×950; h, inferior simple seta from posterior parapodium, ×950; i, acicula from 20th parapodium, ×950.

Posterior parapodia have an additional simple seta with secondary tooth in inferior position (fig. h). Ventral cirri are conical and slightly larger than the setigerous lobe. Acicula number two in a parapodium; one is distally straight and the other bends at a right angle in its distal part (fig. i).

Eusyllis irregulata resembles *E. assimilis* from the Mediterranean Sea in its setae and acicula. However, *E. irregulata* differs from the latter in the following characteristics: (1) the prostomium has instead of lacks a pair of nuchal ridges along the posterior margin and is covered by a large occipital flap, and (2) the anterior margin of the pharynx is rounded and has no cleft on the one side (see FAUVEL, 1923, p. 293, fig. 112b) as the latter.

The species resembles also *E. japonica* IMAJIMA and HARTMAN (1964) from Shirikishinai, in 120–140 m and *E. tubicola* (USCHAKOV, 1950) from Okhotsk Sea, in 54–418 m, in having a large occipital flap over the prostomium. However, *E. irregulata* is distinguished from them in the following respects: (1) the anterior margin of the pharynx is dorsally smooth and ventrally denticulated by 25 teeth, instead of uniform anterior margin; (2) a simple seta is present from the 17th to 20th parapodium just above the acicula, instead of from more posterior parapodium and (3) acicula number two and are of two kinds, instead of four to six of one kind.

Distribution: Northern and southern Japan.

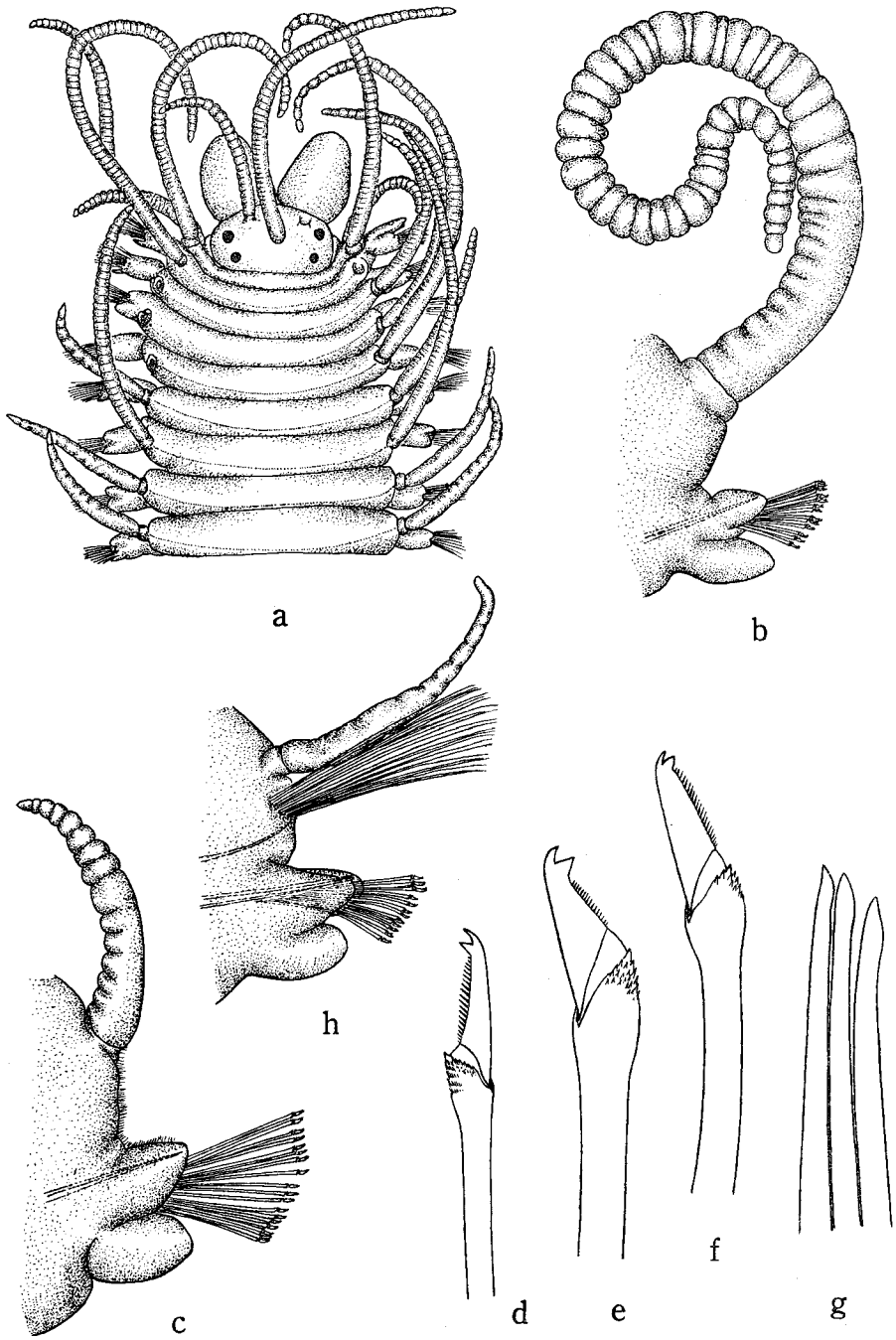
Eusyllis blomstrandi MALMGREN, 1867

(Text-fig. 29, a–h)

Eusyllis blomstrandi FAUVEL, 1923, pp. 293–294, fig. 112, h–m; WESENBERG-LUND, 1947, pp. 11–13, fig. 3; BERKELEY and BERKELEY, 1948, pp. 84–85, fig. 126; PETTIBONE, 1954, pp. 260–261, fig. 28, g–i; 1963, pp. 119–120, fig. 31, n–p.

Collection: Off Cape Shiriyazaki, in 360 m.

Description: The largest anterior fragment measures 13 mm long and 1.3 mm wide for 50 setigerous segments. The body is pale brown in a preserved specimen. Each segment has a ciliary band across the dorsum. The prostomium is broader than long and the anterior margin is slightly rounded; there are two pairs of eyes in trapezoidal arrangement (fig. a). Palpi are broadly triangular and slightly fused at their bases; they are about as long as the prostomium. A median antenna arises between the anterior eyes and is about five times as long as the prostomium. Lateral antennae are inserted near the anterior margin of the prostomium and each is about half as long as the median one. Antennae are distinctly annulated except at the base which is wrinkled. The pharynx is thick and about as wide as the following proventriculus; it is distally surrounded by 10 soft papillae and has a subterminal middorsal tooth. The anterior margin of the pharynx is denticulated



Text-fig. 29. *Eusyllis blomstrandi* MALMGREN. a, anterior end, in dorsal view, ×30; b, 1st parapodium, ×75; c, 15th parapodium, ×75; d, compound seta from 1st parapodium, ×950; e, inferior compound seta from median parapodium, ×950; f, superior compound seta from same parapodium, ×950; g, acicula from 1st parapodium, ×950; h, 17th parapodium from epitokous specimen, ×75.

with many, small teeth. The proventriculus extends from setigerous segment 7 or 8 to 13-16. The tentacular segment is dorsally reduced and forms a low occipital flap; it slightly covers the posterior part of the prostomium. The dorsal tentacular cirri are shorter than the median antenna and the ventral ones are about half as long as the dorsal ones. The first dorsal cirri are longer than the median antenna (fig. b); distally they have 40-50 distinct annulations and the basal part is wrinkled. The second are about half as long as the first ones and the third, fourth and sixth are again longer, thereafter they are about two-thirds as long as the body is wide; they are distally annulated and basally wrinkled (fig. c). Parapodia are bluntly conical; the setal fascicles emerge between the two lobes. Setae are compound falcigers with short appendages; each terminates in a bifid tip. Those of the first parapodium are slenderer than succeeding ones and have slender bidentate tips; they are of one kind (fig. d). In median parapodia the appendages of inferior setae (fig. e) have a larger secondary tooth than those in the superior ones (fig. f). The cutting margin of the appendage has small serrations. Ventral cirri are foliaceous and nearly as large as the setigerous lobes. Acicula number one to three in a parapodium; each is mallet-headed (fig. g).

An epitokous specimen has long, flat, hairlike swimming setae, emerging from under the dorsal cirrus, present from the 17th parapodium (fig. h). The swimming setal fascicle is supported by a distally curved aciculum.

The species is new to Japan.

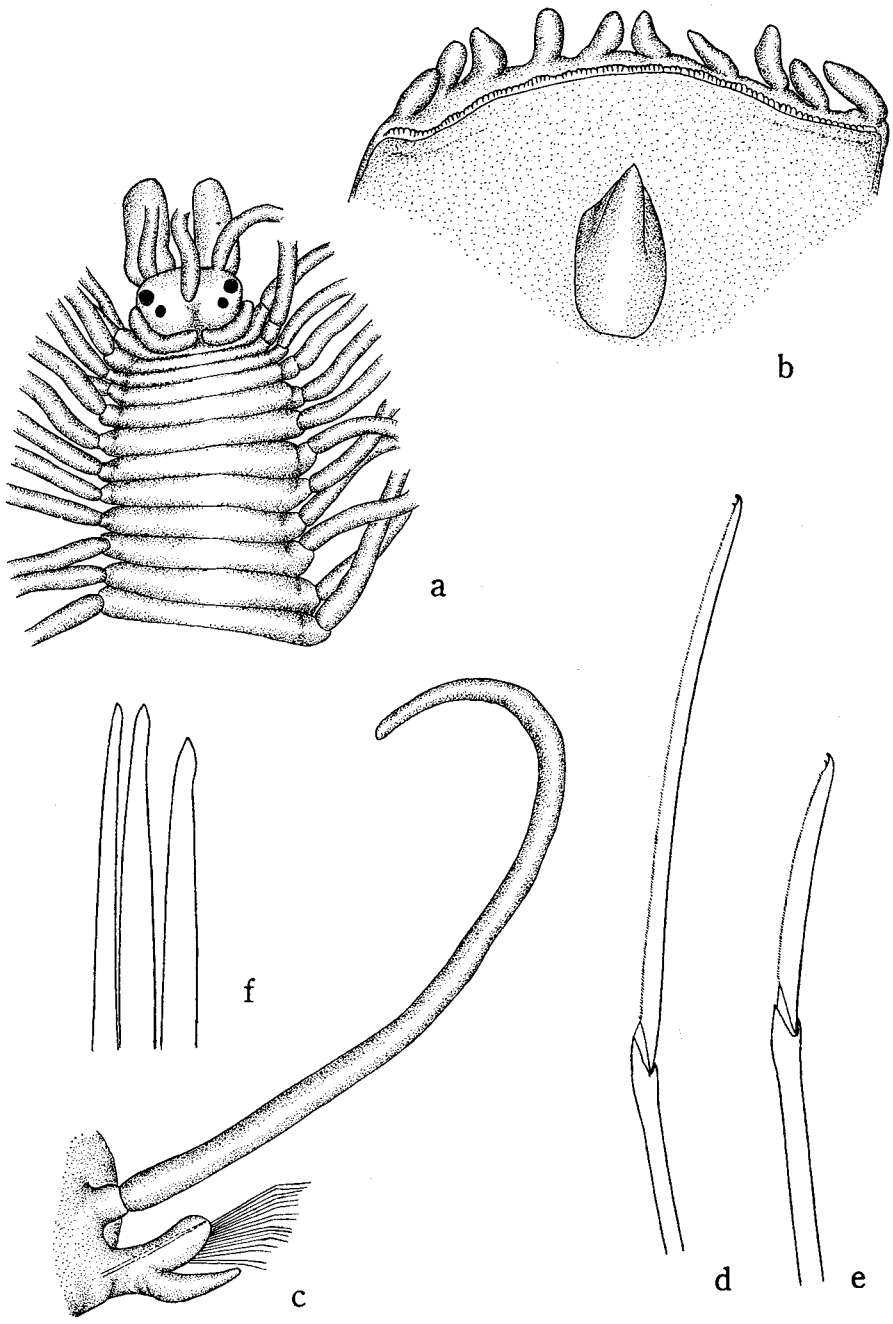
Distribution: Spitsbergen; Iceland; Ireland; Mediterranean Sea; Alaska; Massachusetts; Japan.

Eusyllis longicirrata n. sp.

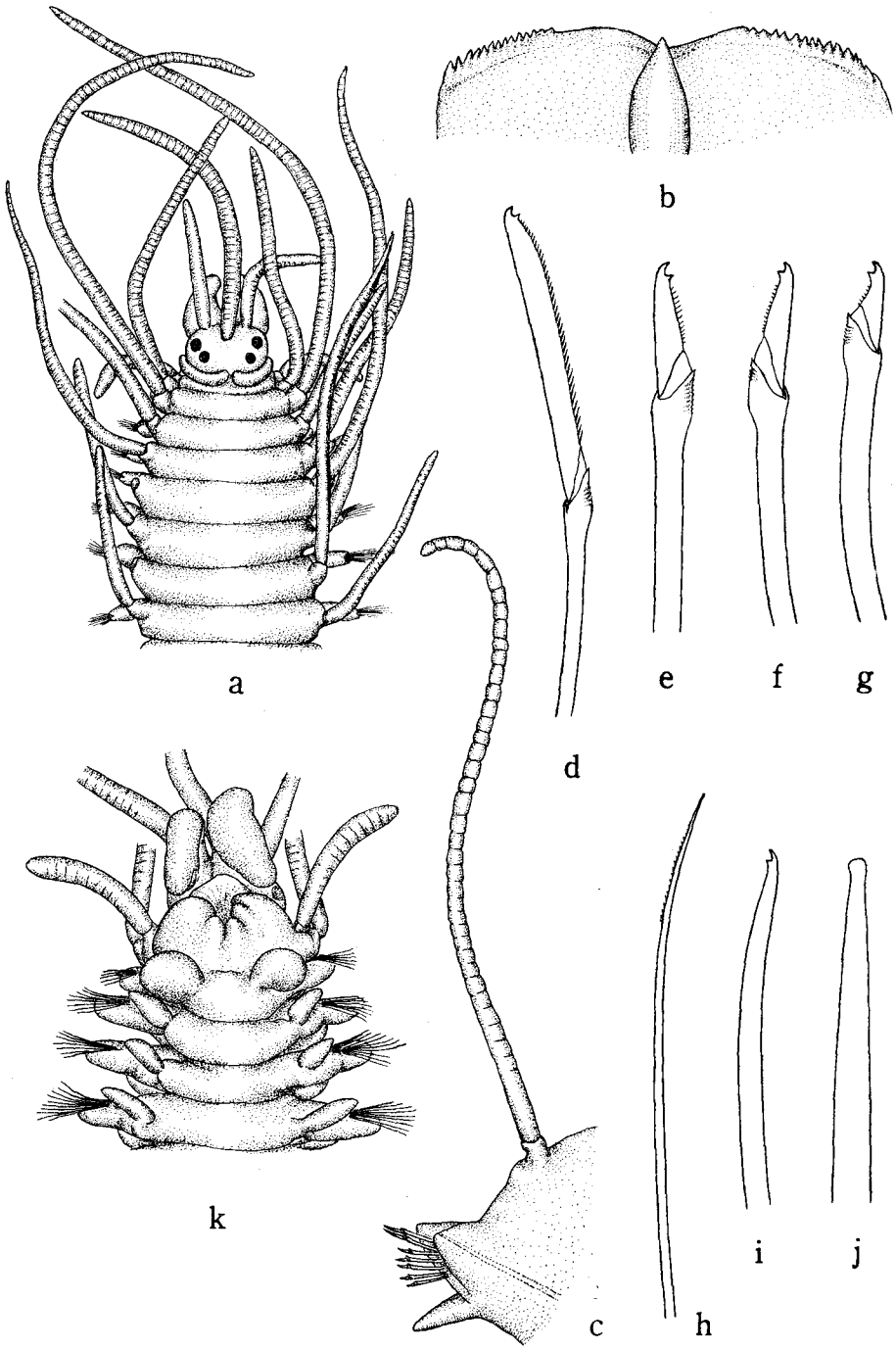
(Text-fig. 30, a-f)

Collection: Seto; Tamano; Mukaishima; Usa, in the intertidal zone.

Description: The largest specimen measures 13 mm long and 1.2 mm wide for 87 setigerous segments. The body is greenish, perhaps due to food material in the digestive tract. The prostomium is broader than long; its anterior margin is slightly convex and the posterior margin has a cleft extending forward to its center (fig. a). Two pairs of eyes are reddish, and the anterior eyes are larger and wider apart than the posterior ones. A pair of distinct nuchal ridges extends along the posterior margin of the prostomium. Palpi are longer than the prostomium and completely separated. The median antenna arises from the center of the prostomium and is about four times as long as the prostomium. Lateral antennae arise from the anterior margin of the prostomium and each is about half as long as the median one. All antennae are slender. The pharynx terminates distally in 10 soft, digitate



Text-fig. 30. *Eusyllis longicirrata* n. sp. a, anterior end, omitted distal parts of antennae and dorsal cirri, in dorsal view, ×35; b, distal part of pharynx opened by dissection, ×95; c, 11th parapodium, ×55; d, distal part of superior seta from 11th parapodium, ×740; e, inferior seta from same parapodium, ×740; f, acicula from same parapodium, ×740.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papillae; the anterior margin of the inner wall is minutly denticulated and has a middorsal, subdistal tooth (fig. b). The proventriculus extends from setigerous segment 13 to 21. The tentacular segment is dorsally reduced and has two pairs of tentacular cirri; the dorsal ones are as long as the median antenna, and the ventral ones are about half as long as the dorsal ones. Dorsal cirri are much longer and slenderer, and alternate long and short; long cirri in the anterior region are four to five times as long as the body is wide, and short cirri are about half as long as the long ones (fig. c). In the median region the long dorsal cirri are about 3 times, and short ones are about twice, as long as the body is wide. All dorsal cirri have a long cirrophore. Parapodia are ellipsoidal lobes with rounded tip. Ventral cirri are digitate and extend beyond the tips of the setigerous lobes (fig. c). Setae are bidentate compound falcigers. The appendage of superior setae (fig. d) is longer than that in the inferior ones (fig. e); it is about twice as long as the short one. The cutting margins of the appendages have minute serrations. Acicula number two to three in a parapodium; each is slightly mallet-headed (fig. f).

Eusyllis longicirrata is characterized as follows: (1) palpi are completely separated from each other; (2) dorsal cirri are very long and slender; each is two to five times as long as the body is wide; (3) the anterior margin of inner wall of the pharynx is minutely denticulated; (4) setae are bidentate compound falcigers with long appendages, and (5) posterior parapodia have no additional simple setae.

Distribution: Southern Japan.

Eusyllis habei n. sp.

(Text-fig. 31, a-k)

Collection: Mukaishima; Tamano; Noto-ogi, in the intertidal zone.

Description: The largest specimen measures 5 mm long and 0.9 mm wide for 43 setigerous segments. The body is yellowish white, but those from Noto-ogi have two transverse color bands on each segment. The prostomium is broader than long and has two pairs of circular eyes, in trapezoidal arrangement (fig. a). The paired palpi are about as long as the prostomium and are fused only at their bases. A pair of distinct, transverse nuchal ridges extends

Text-fig. 31. *Eusyllis habei* n. sp. a, anterior end, in dorsal view, ×55; b, distal part of pharynx opened by dissection, ×190; c, 18th parapodium, ×80; d, superior compound seta from median parapodium, ×950; e, inferior compound seta from same parapodium, ×950; f, superior compound seta from posterior parapodium, ×950; g, inferior compound seta from same parapodium, ×950; h, superior simple seta from posterior parapodium, ×950; i, inferior simple seta from same parapodium, ×950; j, aciculum from median parapodium, ×950; k, anterior end, showing foliaceous first ventral cirri, in ventral view, ×75.

nearly across the posterior margin of the prostomium. A median antenna arises between the anterior eyes; it is four to five times as long as the prostomium. Lateral antennae arise from the anterior margin of the prostomium and each is about half as long as the median one; they are indistinctly annulated throughout their length. The pharynx is distally surrounded by 10 soft papillae; its anterior margin is smooth on the dorsal side and denticulated with 26 small teeth on the ventral side (fig. b). A large, spindle-shaped middorsal tooth extends distally from the anterior margin of the pharynx. The proventriculus reaches from setigerous segment 6 to 9 or 10.

Dorsal tentacular cirri are about as long as the median antenna and ventral ones are about one-third as long as the dorsal ones. The first dorsal cirri are much longer than those farther back; their length is about twice that of the median antenna. On more posterior segments the dorsal cirri alternate with, the long ones (fig. c) are about as long as the width of the body including parapodia, and the short ones are slightly longer than half of the long ones. The distal half of each cirrus is indistinctly annulated and the basal part is irregularly wrinkled. A normal parapodium is short and conical. Setal fascicles emerge from between two thick lobes. Setae are compound falcigers terminating in bifid tip; appendages in the superiormost part of the fascicles on the anterior and median regions are long and oar-shaped (fig. d); those more inferior (fig. e) are about half as long as the superior ones. On more posterior parapodia the appendages in superior setae are gradually shorter and come to be as long as the inferior setae of median parapodia (fig. f); the appendages of the posterior inferior setae are shorter (fig. g). Two simple setae are present in superior- and inferior-most parts of the fascicles of the posterior region. The superior one is very slender and the distal convex part has minute serrations (fig. h). The inferior seta is thicker and has a small, subdistal secondary tooth (fig. i). The first ventral cirri are flattened and foliaceous, and much larger than the following digitate ones (fig. k).

Eusyllis habei resembles *E. lamelligera* in having large ventral cirri on the first parapodia. The first is distinguished from the second in that *E. habei* has the anterior margin of the pharynx dorsally smooth and ventrally denticulate, whereas *E. lamelligera* has a circlet of minute teeth around the anterior margin (FAUVEL, 1923, p. 294, fig. 113c).

E. habei is similar to *E. fragilis* (WEBSTER, 1879, pp. 217-219) from Virginia in many characters. However, the first ventral cirri and the pharynx for *E. fragilis* were described as follows: "Ventral cirri arise about half-way out on feet. Anterior not projecting beyond the feet, but the posterior often reaching slightly beyond", and "The oesophagus reaches to the 4th or 5th segment. Anterior end with a circle of small, flattened, triangular papillae; one stout conical tooth". According to WEBSTER's description, *E. fragilis* has

no large ventral cirri on the first parapodium, and the anterior margin of the pharynx was not described. *E. habei* may be distinguished from *E. fragilis* in the character of the first ventral cirri.

Distribution: Central and southern Japan.

Eusyllis inflata (MARENZELLER, 1879), new combination

(Text-fig. 32, a–o)

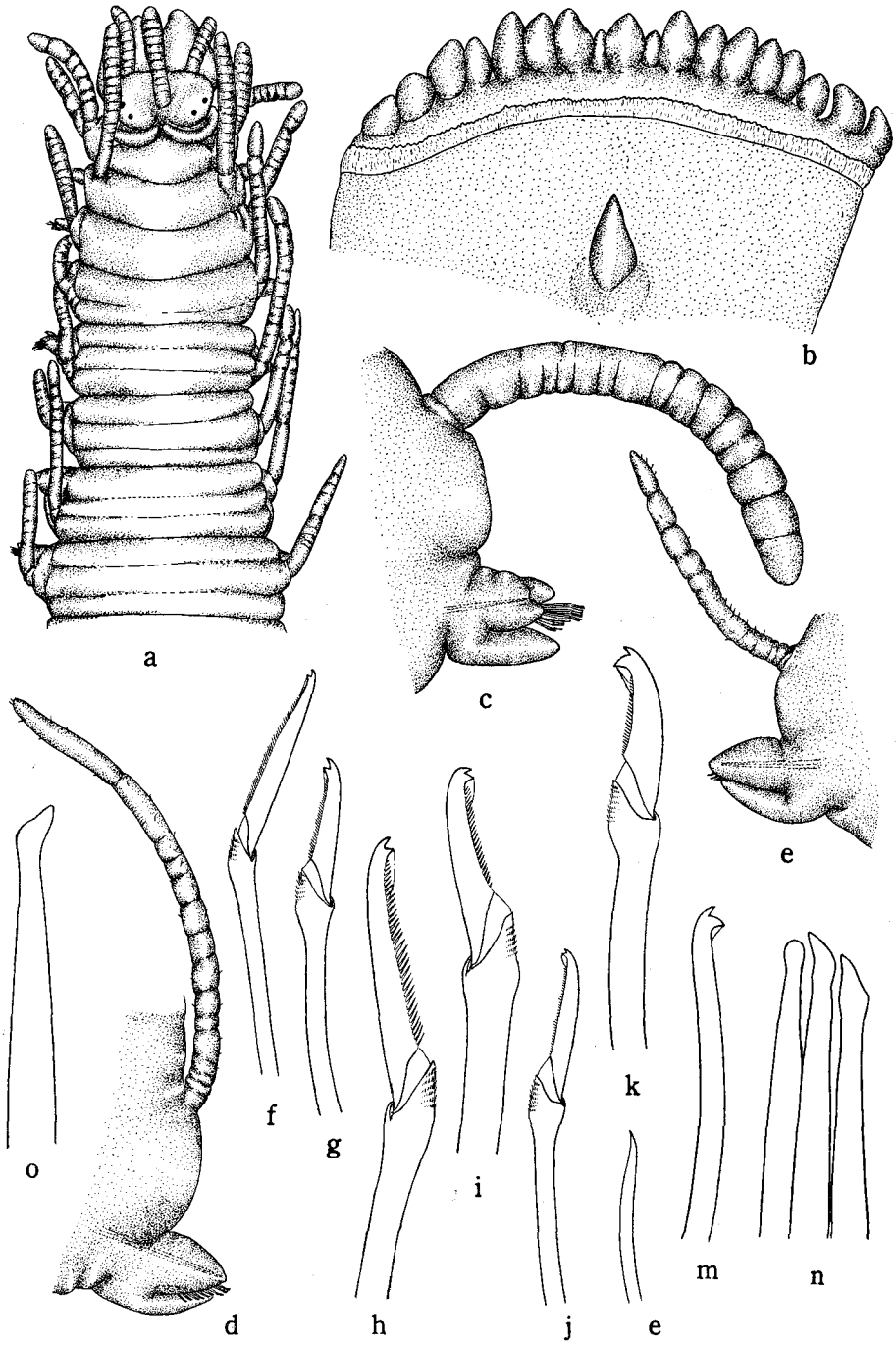
Syllis inflata MARENZELLER, 1879, p. 131, pl. 3, fig. 5; IZUKA, 1912, pp. 190–191, pl. 20, figs. 9, 10; OKUDA, 1938, p. 91; USCHAKOV and WU, 1962, p. 58.

Typosyllis inflata IMAJIMA and HARTMAN, 1964, p. 136.

Syllis (Typosyllis) kinbergiana HASWELL, 1885, p. 7, pl. 51, figs. 1–3; 1920, pp. 98–99, pl. 11, figs. 23–27; pl. 12, figs. 1, 2.

Collection: Seto; Mukaishima; Ariake Sea; Ohmura Bay in Nagasaki Prefecture.

Description: The largest specimen measures 60 mm long and 2.2 mm wide including parapodia; it consists of 160 setigerous segments. The dorsum is much arched and the ventrum is flat. The body is orange and each segment is triannulated. The prostomium is broader than long and has two pairs of reddish eyes in trapezoidal arrangement (fig. a). A pair of nuchal ridges extends transversely along the posterior margin of the prostomium. A median antenna arises from the center of the prostomium and its tip reaches to the end of the palpus. Lateral antennae arise from the anterior margin of the prostomium and their tips reach nearly to the same level as that of the median antenna. All antennae are annulated but not distinctly moniliform. Paired palpi are subtriangular and slightly longer than the prostomium; they are fused only at their bases. The pharynx (fig. b) is thick and distally surrounded by 13 to 18 soft papillae. The inner wall of the pharynx is yellowish white and its anterior margin is minutely denticulated, not smooth; it has a large, subdistal tooth, located a considerable distance from the anterior margin. The proventriculus extends through setigerous segments 6 to 9. The tentacular segment is dorsally distinct and has two pairs of tentacular cirri; the dorsal one is slightly longer than the median antenna, and the ventral one is about two-thirds as long as the dorsal one. The first dorsal cirri (fig. c) are as wide as the first setigerous segment; each has about 15 annulations and is wrinkled at the base. The following dorsal cirri alternate long and short; long ones are about two-thirds as long as the body is wide, and short ones are about half as long as the dorsal ones (figs. d, e). All are indistinctly annulated or irregulary wrinkled; each is inserted dorsal to the setigerous lobe. Parapodia are bluntly conical and have fascicles of bidentate,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hooded composite setae with minute serrations along the cutting margin. In anterior parapodia the setae are slenderer, and superior appendages are longer than those of inferior ones (figs. f, g). Setae in median segments are thicker than those in anterior segments, and each is distally incurved (figs. h, i). Inferior setae in posterior fascicles are thicker and have a larger secondary tooth (figs. j, k) than the superior ones. There are also two simple setae; the superior one (fiig. l) is slender and short with an entire tip, and the inferior one (fig. m) is distinctly bifid with large, hooded secondary tooth. Ventral cirri are digitate and extend only to the tip of setigerous lobes in the median region; that of the first parapodium is larger than those of more posterior parapodia. Acicula number three in median (fig. n) and decrease gradually in number to one in posterior parapodia (fig. o); each is mallet-headed.

Syllis inflata MARENZELLER is referred to *Eusyllis* because (1) the anterior margin of the inner wall of the pharynx has many minute teeth and a mid-dorsal tooth; (2) dorsal cirri are irregulary wrinkled, not distinctly annulated except anterior ones of the body and (3) setae are composite.

Three individuals of *Syllis inflata* FAUVEL (1934, pp. 309-311) from Seto and Misaki were re-examined; they are here referred to *Typosyllis nipponica*, with which they agree in all characters (see below).

Specimens of *Syllis inflata* OKUDA (1938, p. 91) from Shimoda, Izu Peninsula were re-examined and found to agree.

Syllis (*Typosyllis*) *kinbergiana* HASWELL (1885) from Australia may be referred to *Eusyllis inflata* for the following reasons: (1) dorsal cirri are rather short and very imperfectly annulated; (2) the dorsal surface of each segment has transverse intrasegmental lines; (3) the pharynx extends through three to six segments and the proventriculus usually only through three or four; (4) acicula number two to three in a parapodium; (5) compound setae have long, rather narrow bidentate appendages with minute serrations along the cutting margin, and the short appendage is distally hooded or not, and (6) the largest individual is 60 mm long and 2 to 3 mm wide.

Distribution: Central to southern Japan; Yellow Sea; Australia.

Text-fig. 32. *Eusyllis inflata* (MARENZELLER). a, anterior end, in dorsal view, ×32; b, distal part of pharynx opened by dissection, ×70; c, 1st parapodium, in posterior view, ×85; d, median parapodium with long dorsal cirrus, ×65; e, median parapodium with short dorsal cirrus, ×65; f, superior compound seta from 1st parapodium, ×840; g, inferior compound seta from same parapodium, ×840; h, superior compound seta from median parapodium, ×840; i, inferior compound seta from same parapodium, ×840; j, superior compound seta from posterior parapodium, ×840; k, inferior compound seta from same parapodium, ×840; l, superior simple seta from same parapodium, ×840; m, inferior simple seta from same parapodium, ×840; n, acicula from median parapodium, ×840; o, aciculum from posterior parapodium, ×840.

Eusyllis japonica IMAJIMA and HARTMAN, 1964

Eusyllis japonica IMAJIMA and HARTMAN, 1964, pp. 111-112, pl. 25, figs. a-g.

Collection: Off Shirikishinai, in 40-140 m.

Diagnosis: The largest specimen measures 20 mm long and 1 mm wide for 79 setigerous segments. The prostomium has a pair of distinct nuchal ridges along its posterior margin and its basal half is covered by an occipital flap. The pharynx has a middorsal tooth and its anterior margin has a series of small teeth. Antennae, tentacular cirri and dorsal cirri are distinctly annulated through their distal length and the basal part is smooth. All fascicles except some anterior and posterior parapodia have two kinds of bidentate composite setae; the appendages of two superiormost setae are longer than those of the more numerous, inferior ones.

Distribution: Northern Japan.

Odontosyllis CLAPARÈDE, 1863

Type: *Odontosyllis fulgurans* (AUDOUIN and MILNE EDWARDS, 1833)

The body is strongly arched dorsally and flattened ventrally. The prostomium is suboval with two pairs of large eyes, and with or without semicircular occipital flap on the tentacular segment, covering the posterior part of the prostomium. Palpi are completely separated from one another or medially fused for half their length. Antennae, two pairs of tentacular cirri and dorsal cirri are smooth and filiform or spindle-shaped. The pharynx has a series of recurved teeth. The parapodium is bluntly conical and has compound falcigers each with a short appendage. The ventral cirrus is short.

Key to species of *Odontosyllis* from Japan

1. Dorsal cirri spindle-shaped and subequal ..... *Odontosyllis maculata*
1. Dorsal cirri slender and alternating long and short 2
2. Prostomium covered with occipital flap; body with or without color markings..... 3
2. Prostomium not covered with occipital flap; body reddish..... *Odontosyllis detecta*
3. Dorsum pale yellow with dark transverse bands; occipital flap dark ..... *Odontosyllis undecimdonta*
3. Dorsum pale yellow without color markings; occipital flap not pigmented..... 4
4. Pharynx with 7 teeth; compound seta with distinct secondary tooth ..... *Odontosyllis fulgurans japonica*
4. Pharynx with 12 teeth; compound seta with a minute accessory tooth ..... *Odontosyllis setoensis*

Odontosyllis maculata USCHAKOV, 1950

Odontosyllis maculata USCHAKOV, 1950, p. 178, pl. 1, fig. 5, text-fig. 16; 1955, p. 184, fig. 53, a-d; USCHAKOV and WU, 1962, p. 59; IMAJIMA and HARTMAN, 1964, pp. 113-114, pl. 26, figs. a-g.

Collection: Shirikishinai, from shallow water to 150 m; off Cape Shiriyazaki, in 150 m; Erimo; Harutachi; Misaki; Asamushi; Onagawa; Amakusa, in intertidal zone.

Diagnosis: The largest specimen measures 10 mm long and 1.5 mm wide for 48 setigerous segments. The body is gray and has a black band extending lengthwise on the dorsum. The prostomium is subrectangular and has 4 eyes. All antennae are spindle-shaped; a median one arises between the posterior eyes and lateral ones from the anterior margin of the prostomium. A pair of nuchal ridges is present along the posterior margin of the prostomium. The prostomium is partly covered by an occipital flap arising from the anterior margin of the second segment. Palpi are about as long as the median antenna and medially fused for half of their length. The pharynx has 5 to 6 teeth in one row. The proventriculus extends from segment 6 to 9. Dorsal cirri are spindle-shaped and about half as wide as the body. Setae are unidentate, compound falcigers; appendages in the superior part are longer than these in inferior position and the cutting margin has small serrations. The pygidium has two short, fusiform anal cirri.

Distribution: Okhotsk Sea; Yellow Sea; Japan.

Odontosyllis detecta AUGENER, 1913

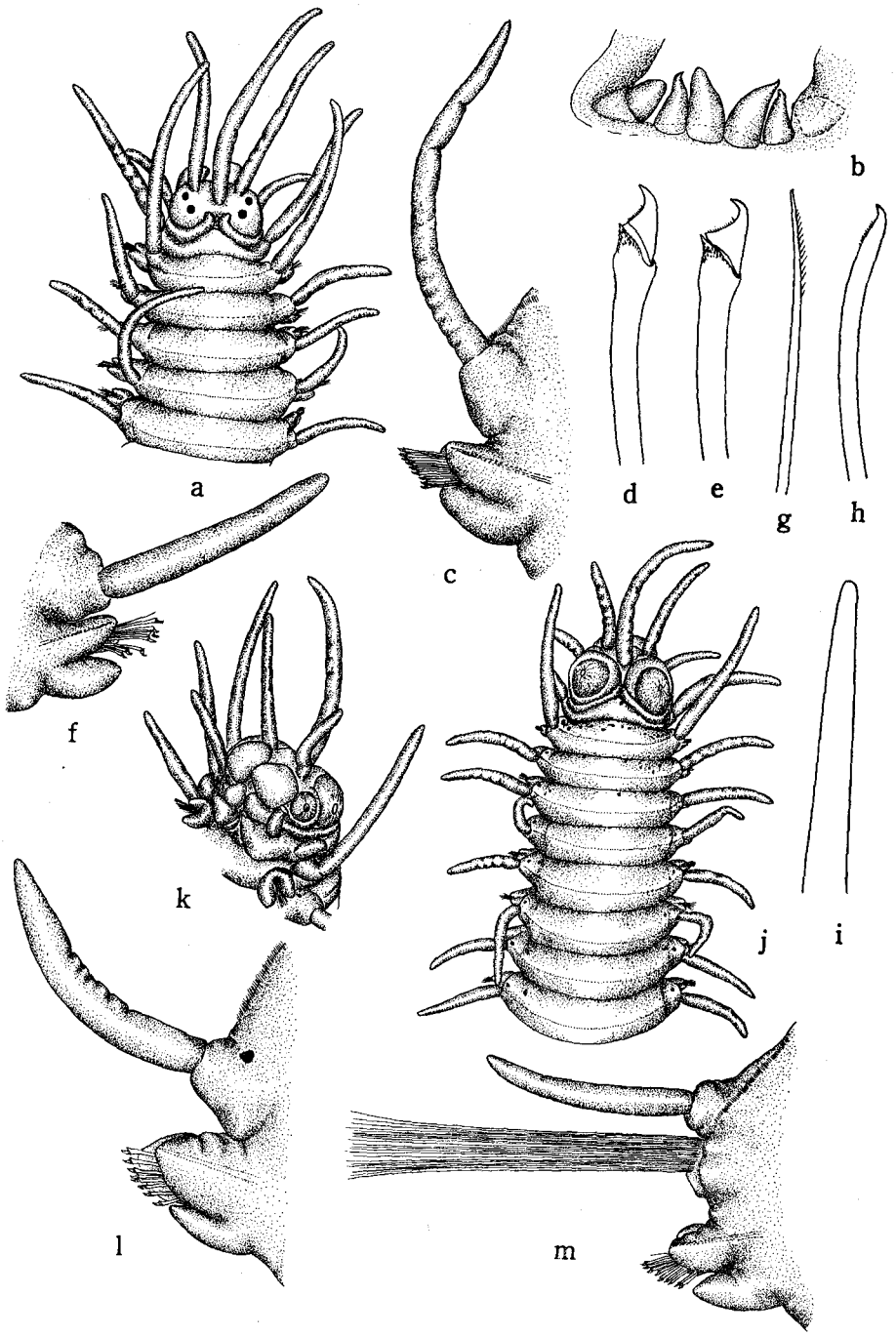
(Text-fig. 33, figs. a-m)

Odontosyllis detecta AUGENER, 1913, pp. 236-237, pl. 3, fig. 33, text-fig. 34; HASWELL, 1920, pp. 105-106.

? *Odontosyllis ctenostoma* FAUVEL, 1934, pp. 311-312.

Collection: Asamushi; Misaki; Seto; Sugashima; Tamano; Mukaishima; Usa, in the intertidal zone.

Description: Atokous specimens were collected from Misaki and Tamano; they measure 6 to 9 mm long and about 1 mm wide including parapodia and consist of 40 to 52 setigerous segments. The antennae, dorsum and dorsal cirri are dark red; the color tends to fade in alcohol. Segments have a ciliary band extending across the dorsum. The prostomium is subglobular, wider than long (fig. a). Two pairs of subequal eyes are reddish and in trapezoidal arrangement. A pair of nuchal ridges is distinct and extends along the posterior margin of the prostomium; each is turned forward at its middorsal part. There is no occipital flap. Palpi are subtriangular and shorter than the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prostomium; they are completely separated. A median antenna arises from the center of the prostomium and is about four times as long as the prostomium. Lateral antennae arise from the inner part of the anterior eyes and are slightly shorter than the median one. All antennae are slender with irregular wrinkles. The pharynx has 6 teeth in one row; the four median teeth have distally pointed tips and the two lateral ones are distally rounded (fig. b). The proventriculus extends from setigerous segment 6 to 9. The tentacular segment is dorsally triangular and has two pairs of tentacular cirri; the dorsal one is as long as the lateral antennae and the ventral one is about half as long as the dorsal one. The first dorsal cirri are slender and as long as the median antenna. The second and third cirri are short and the fourth are long. Thereafter they alternate short and long; the long cirri are about two-thirds as long as the body is wide (fig. c) and short ones are about half to two-thirds as long as the dorsal ones. A normal parapodium is bluntly conical and has two thick lobes between which the setae emerge. Setae are all compound falcigers and number about 20 in a fascicle; their appendages are short, sharply hooked, unidentate in median parapodia (fig. d), and those of posterior parapodia have a minute accessory tooth (fig. e); the cutting margin has minute serrations. Each of the posterior parapodia (fig. f) has two additional simple setae in superior and inferior positions. The superior seta (fig. g) is slender and has long serrations along the cutting margin; the inferior seta (fig. h) is distally, acutely curved, with minute serrations along the subdistal part. Acicula number four in anterior, and one in posterior parapodia; they have distally rounded tips (fig. i). The pygidium has two anal cirri.

Epitokous specimens were collected with atokous ones from Asamushi to Usa, the Pacific coast of Japan. The body is dark red and the coloration of the most specimens is not faded in alcohol. The dorsum has irregulary studded dark spots and one spot occurs near the anterior bases of the first 10 to 15 pairs of dorsal cirri (fig. j). Two pairs of eyes are conspicuously large and each has a lens with color like that of the body (fig. k); one pair is dorsal and the other ventral. The dorsal cirri (fig. l) are shorter than those of atokous specimens and these in the median region are subequal in length.

Text-fig. 33. *Odontosyllis detecta* AUGENER. a, anterior end, in dorsal view, ×32; b, pharyngeal teeth, in anterior view, ×170; c, median parapodium, in anterior view, ×70; d, compound seta from median parapodium, ×840; e, compound seta from same parapodium, ×840; f, posterior parapodium, ×100; g, superior simple seta from posterior parapodium, ×840; h, inferior simple seta from same parapodium, ×840; i, aciculum from posterior parapodium, ×840; j, anterior end of epitokous specimen showing large eyes and dark spots, in dorsal view, ×30; k, anterior end of same specimen, showing dorsal and ventral eyes and palpi, most part of tentacular cirri are omitted, in ventro-lateral view, ×32; l, 10th parapodium from same specimen, showing a dark spot and a ciliary band, in anterior view, ×85; m, 20th parapodium with swimming setae from same specimen, ×70.

From the sixteenth parapodium a tuft of hairlike, swimming setae is present between the dorsal cirrus and the setigerous lobe (fig. m).

Odontosyllis detecta AUGENER (1913) was first recorded from Sharks Bay, Australia, as a single epitokous somewhat damaged anterior fragment. Later, HASWELL (1920) gave additional particulars from materials collected at Watson's Bay from among algae. Australian specimens showed no definite color except those of the internal organs. Japanese specimens are dark red; the systematic characteristics correspond with those of *O. detecta* AUGENER.

A single epitokous specimen reported as *Odontosyllis ctenostoma* FAUVEL (1934) from Misaki was re-examined and is here referred to *O. detecta*. It differs from *Odontosyllis ctenostoma* CLAPARÈDE (1868) from the Mediterranean Sea which is characterized as follows: (1) the dorsum is green or yellowish green and has a transverse band across each segment; (2) an occipital flap is semicircular and covers the posterior part of the prostomium; (3) the pharynx has 6 teeth in a row; (4) dorsal cirri alternate long and short; (5) parapodia have a fascicle of unidentate compound setae and (6) posterior parapodia have two additional simple setae.

The species is new to Japan.

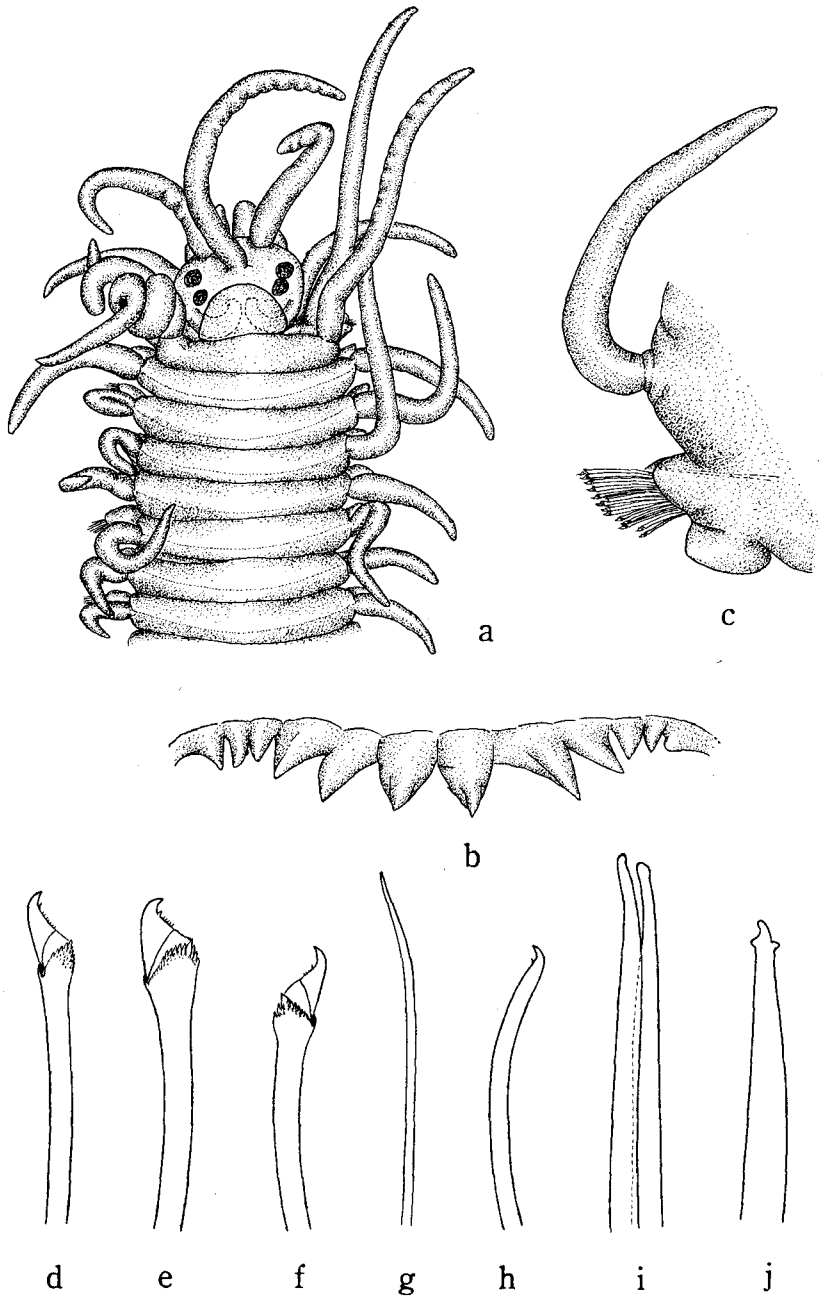
Distribution: Southwestern Australia; Japan.

Odontosyllis setoensis n. sp.

(Text-fig. 34, a-j)

Collection: Seto, in the intertidal zone.

Description: One of four specimens is complete and measures 5.5 mm long and 0.7 mm wide for 53 setigerous segments. The body is yellow and each segment has a ciliary band across the dorsum. The prostomium is subcircular and has two pairs of reddish eyes; each is circular and located at the sides of the prostomium (fig. a). A pair of conspicuous nuchal ridges along the posterior margin of the prostomium is concealed by the occipital flap. A median antenna arises between the anterior eyes and is about three times as long as the prostomium. Lateral antennae arise from the anterior margin of the prostomium and each is about two-thirds as long as the median antenna. All are smooth or irregulary wrinkled. Palpi are completely separated; they are shorter than the prostomium. The tentacular segment is dorsally fused with the prostomium. An occipital flap extends from the second segment; it is semicircular and covers the basal half of the prostomium. The pharynx is subdistally surrounded by 10 soft papillae. The pharyngeal teeth number 12 arranged in one row; each is directed sharply backward; the median teeth are large and they gradually decrease in size laterally (fig. b). The proventriculus extends from setigerous segment 5 to 11. The first dorsal cirri are



Text-fig. 34. *Odontosyllis setoensis* n. sp. a, anterior end, in dorsal view, ×55; b, pharyngeal teeth, ×300; c, median parapodium, in anterior view, ×95; d, compound seta from 1st parapodium, ×950; e, compound seta from median parapodium, ×950; f, compound seta from posterior parapodium, ×950; g, superior simple seta from same parapodium, ×950; h, inferior simple seta from same parapodium, ×950; i, acicula from 1st parapodium, ×950; j, aciculum from posterior parapodium, ×950.

as long as the median antenna and the second ones are about half as long as the first one. On more posterior segments the dorsal cirri alternate so that the long cirri are about two-thirds as long as the body is wide (fig. c) and the short ones are about two-thirds as long as the first. All dorsal cirri are slender and cirriform. Parapodia are bluntly conical; the emerging setae are entirely compound with short appendages; they are distally sharply hooked and have a small accessory tooth which diminishes from anterior to posterior regions; the cutting margin has minute serrations (figs. d, e, f). In posterior parapodia two simple setae are present; one superior seta (fig. g) is slender and distally tapered, and an inferior seta (fig. h) is distally hooked with a subdistal tooth. Acicula number two in anterior and median parapodia; each is distally rounded (fig. i); in the posterior parapodia they are single and distally tridentate (fig. j). Ventral cirri are short, triangular lobes.

Odontosyllis setoensis resembles *O. cucullata* (McINTOSH) in the prostomium, occipital flap, dorsal cirri and compound setae. The first is distinguished from the second as follows; (1) a median antenna arises from anterior instead of middle; (2) one instead of two ciliary bands are on each segment; (3) the pharynx has a series consisting of 12 instead of 7 teeth, and (4) the proventriculus extends through setigerous segments 5 to 11, instead of 7 to 20. *O. setoensis* is also allied to *O. ctenostoma* CLAPARÈDE in the features of occipital flap and setae. However, the first has 12, instead of 6 pharyngeal teeh, and compound setae have a minute accessory tooth, instead of unidentate.

Distribution: Southern Japan.

Odontosyllis cucullata (McINTOSH, 1908), new combination

Syllis cucullata McINTOSH (1908) shows many external characteristics of *Odontosyllis* and FAUVEL (1923, p. 267) suggested that the species might be referred to *Odontosyllis*. However, McINTOSH did not describe the pharyngeal teeth. Through the courtesy of the British Museum two anterior fragments of Syntype of *Syllis cucullata* labelled "Loc. Luccombe, Chine, Isle of Wight", were examined. The larger fragment measures 5 mm long and 1.3 mm wide for 29 setigerous segments. The dorsum is arched and each segment has two ciliary bands extending between the bases of the dorsal cirri. The prostomium is longer than wide; its median antenna arises midway between four reddish eyes which are in trapezoidal arrangement. A pair of nuchal ridges is present on the posterior margin of the prostomium. An occipital flap extends forward to partly conceal the prostomium. Palpi are subtriangular and fused at their bases. The pharynx has a series of seven teeth; each one is sharply pointed. The proventriculus extends from setigerous

segment 7 to 19 or 20. Dorsal cirri alternate long and short; the long ones are as long as the body is wide. Setae have a short, distally hooked appendage, with a minute accessory tooth. Acicula number two and are distally rounded. The species is here newly referred to *Odontosyllis* for these reasons.

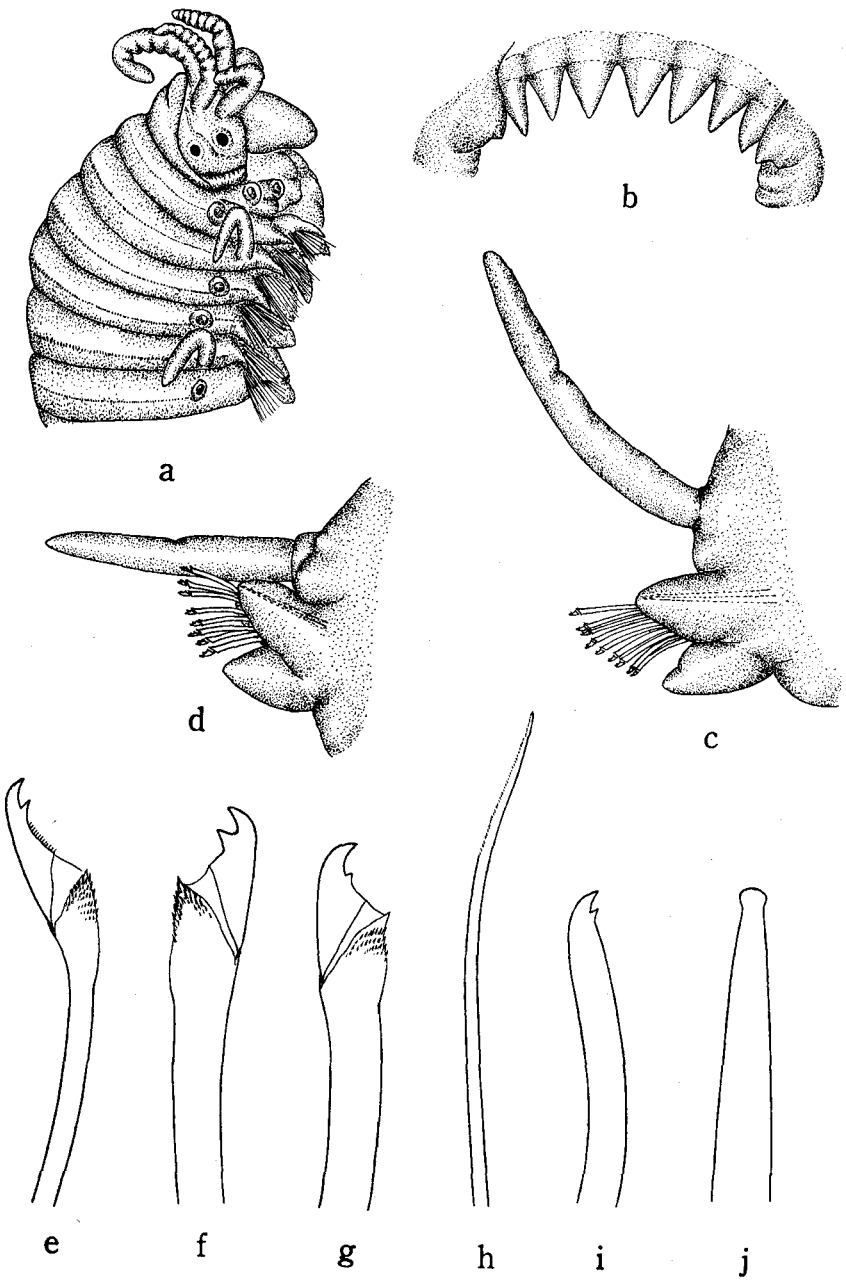
Odontosyllis fulgurans japonica n. subsp.

(Text-fig. 35, a-j)

Collection: Uraga Strait, in 20 to 60 m.

Description: Many fragments and a single complete specimen were taken; the latter measures 17 mm long and 1.8 mm wide including parapodia; it consists of 121 setigerous segments. The body is yellowish white, without color markings; the dorsum is conspicuously arched. Segments have one or two ciliary bands to a segment; they extend across the dorsum. The prostomium is subglobular; there is a pair of reddish eyes (fig. a). A median antenna arises between the anterior eyes and lateral antennae in front of them; they are indistinctly annulated in their distal half. A pair of inconspicuous nuchal ridges is present along the posterior margin of the prostomium. Palpi are bluntly triangular; they are completely separated. An occipital unpigmented flap extends across the first segment; its anterior margin is convex. The 7 pharyngeal teeth are arranged in one row; they are yellowish brown and directed sharply backward (fig. b). The proventriculus is large and extends through segments 11 to 33. Dorsal cirri are slender, cirriform and transversely wrinkled; they alternate between long and short (figs. c, d). A normal parapodium is obliquely bluntly conical; setal fascicles emerge between two thick lobes. Setae are compound falcigers with short bidentate appendages; the appendages in anterior setae (fig. e) are slenderer than those of the median and posterior setae (figs. f, g); the cutting margins of anterior setae have minute serrations, but posterior setae are smooth. Two simple setae are present in superior- and inferior-most parts of the fascicles in posterior parapodia. The superior one (fig. h) is slender and distally curved with minute serrations along the distal convex part. The inferior seta (fig. i) is thicker and has a small, subdistal secondary tooth. Acicula number two or three in a parapodium; each has a hammer-headed tip (fig. j). The pygidium has two slender anal cirri.

The subspecies resembles the stem, *Odontosyllis fulgurans* (Audouin and Milne Edwards, 1833) from the Mediterranean Sea. Both lack a dorsal pigmented pattern; the pharynx has a series of 7 teeth and bidentate composite setae. The subspecies differs from the stem, *O. fulgurans* in the following respects; (1) a median antenna arises behind the bases of the lateral antennae, instead of at the anterior margin of the prostomium; (2) the occipital flap is



Text-fig. 35. *Odontosyllis fulgurans japonica* n. subsp. a, anterior end, in antero-lateral view, ×35; b, pharyngeal teeth, in frontal view, ×120; c, median parapodium with long dorsal cirrus, ×120; d, median parapodium with short dorsal cirrus, ×360; e, compound seta from 1st parapodium, ×950; f, compound seta from median parapodium, ×950; g, compound seta from posterior parapodium, ×950; h, superior simple seta from same parapodium, ×950; i, inferior simple seta from same parapodium, ×950; j, aciculum, ×950.

broadly transverse instead of semicircular; (3) the posterior parapodium has two simple setae in inferior and superior positions, instead of a superior simple seta only and (4) segments have instead of lack one or two ciliary bands.

Distribution: Central Japan.

Odontosyllis undecimdonta IMAJIMA and HARTMAN, 1964

Odontosyllis undecimdonta IMAJIMA and HARTMAN, 1964, pp. 114–116, pl. 26, figs. h, i; pl. 27, figs. a–e.

Collection: Shirikishinai, from intertidal zone to 40 m; Fukushima; Matsumae; Tomari; Irika; Funadomari, in Rebun Island; Atsuga; Harutachi; Onagawa; Misaki; Usa; Amakusa; Ariake Sea, in 20 m.

Diagnosis: The largest specimen measures 20 mm long and 2 mm wide for 120 setigerous segments. The dorsum is conspicuouly arched and pale yellow with dark transverse bands located at intervals of two to four segments, and many pigment spots. The prostomium is broader than long and has two pairs of light purple eyes. All antennae are slender; a median one arises from the center of the prostomium and lateral ones arise from near the base of median antenna. A pair of inconspicuous nuchal ridges extends along the posterior margin of the prostomium. Palpi are bluntly triangular and are completely separated. An occipital flap is dark and arises from the first segment. Pharyngeal teeth number 11, in one row. The proventriculus extends from segment 11 to 23. Dorsal cirri are slender, cirriform and alternate in length. The parapodium is bluntly conical. Setae are compound falcigers with short appendages, terminating in a bifid tip; the secondary tooth of the inferior appendage is farther from the apex than that of the superior one. On posterior parapodia two simple setae are present in superior- and inferior-most parts of the fascicles. Acicula number one or two in a parapodium.

Distribution: Northern to southern Japan.

Syllides OERSTED, 1845

Type: *Syllides longocirrata* OERSTED, 1845

The prostomium is broader than long. Two pairs of large reddish eyes and usually a pair of small ocular spots are present near the bases of the lateral antenna. Three antennae and two pairs of tentacular cirri are club-shaped and smooth. The first two dorsal cirri are distally indistinctly articulated and basally wrinkled. The following dorsal cirri are distinctly articulated, and alternate long and short. The pharynx has a circlet of soft papillae and a middorsal tooth; the distal margin is smooth. The parapodium

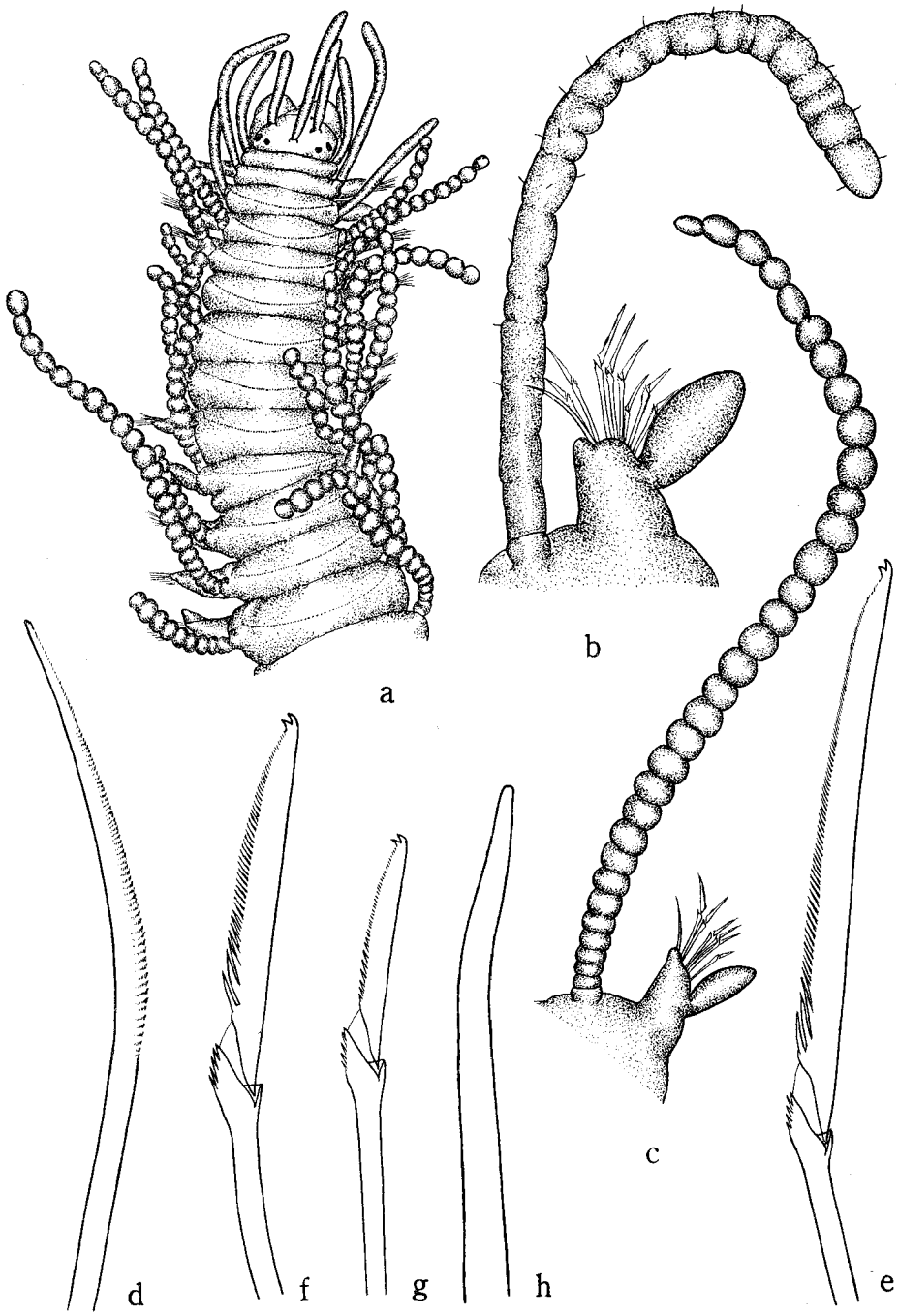
is uniramous and has a setal fascicle consisting of a superior simple, and compound setae. Ventral cirri are long, extending beyond the tips of the parapodial lobes. The pygidium has two long, articulated and a short median cirrus. Reproduction is direct.

Syllides japonicus n. sp.

(Text-fig. 36, a-h)

Collection: Funadomari, in Rebun Island; Kutsugata, in Rishiri Island; Irika; Noto-ogi, from sandy beach. All localities are along the coast of the Japan Sea.

Description: Specimens measure 6 to 7 mm long and 0.8 mm wide including parapodia; they consist of 42 to 46 setigerous segments. The body is yellowish brown and has no color markings; each segment has a ciliary band extending across the dorsum. The prostomium is subtriangular (when the pharynx is everted it is subpentagonal); there are two pairs of eyes in trapezoidal arrangement and one pair of small anterior ocular spots (fig. a). Palpi are broadly triangular, and slightly shorter than the prostomium; they are separated from each other. The median antenna arises between the anterior eyes and is about three times as long as the prostomium. Lateral antennae are inserted within the anterior ocular spots; each is two-thirds as long as the median one. These antennae are smooth, and distally inflated. The pharynx is distally surrounded by 10 soft papillae; it has a subterminal middorsal tooth but no trepan. The proventriculus extends from setigerous segment 4 or 5 to 8. On the first segment the dorsal tentacular cirri are slightly longer than the lateral antennae, and the ventral ones are about two-thirds as long as the dorsal ones. The second ones are as long as the median antenna. Distal parts of cirri are annulated and their basal parts are wrinkled; they are sparsely papillated throughout their length (fig. b). The following dorsal cirri are distinctly articulated and are two to three times as long as the body is wide; they consist of about 30 articles in longer, and 20 articles in shorter cirri (fig. c). Parapodia are short and subconical; they have setal fascicles consisting of one simple seta and 5 to 12 compound setae, emerging between the two lobes. The simple seta occurs from the first parapodium, in the inferior part of the aciculum; it is simple with minute serrations in the subdistal part (fig. d). The compound seta has a bidentate appendage with minute serrations along the cutting margin. Those in the superior position (fig. e) have a long setal appendage, and more inferior ones are gradually shorter to only half as long as the superior ones (figs. f, g). The proximal part of the appendage in superior and median parts of the fascicle has three to four long, coarse serrations. The appendages in inferior



Text-fig. 36. *Syllides japonicus* n. sp. a, anterior end, in dorsal view, ×55; b, 1st parapodium, ×190; c, 10th parapodium, ×80; d, superior simple seta from 10th parapodium, ×950; e, superior compound seta from same parapodium, ×950; f, median compound seta from same parapodium, ×950; g, inferior compound seta from same parapodium, ×950; h, aciculum, ×950.

position have no such long serrations. The end of the shaft is coarsely serrated. Acicula occur singly and curve distally to a blunt tip (fig. h). Ventral cirri are large ellipsoid and extend distally beyond the parapodial lobes.

Syllides japonicus is characterized in having bidentate compound setae with a few long serrations basally.

This is the first record of the genus from Japan.

Distribution: The coast of the Japan Sea in Hokkaido and Honshu.

Pionosyllis MALMGREN, 1867

Type: *Pionosyllis compacta* MALMGREN, 1867

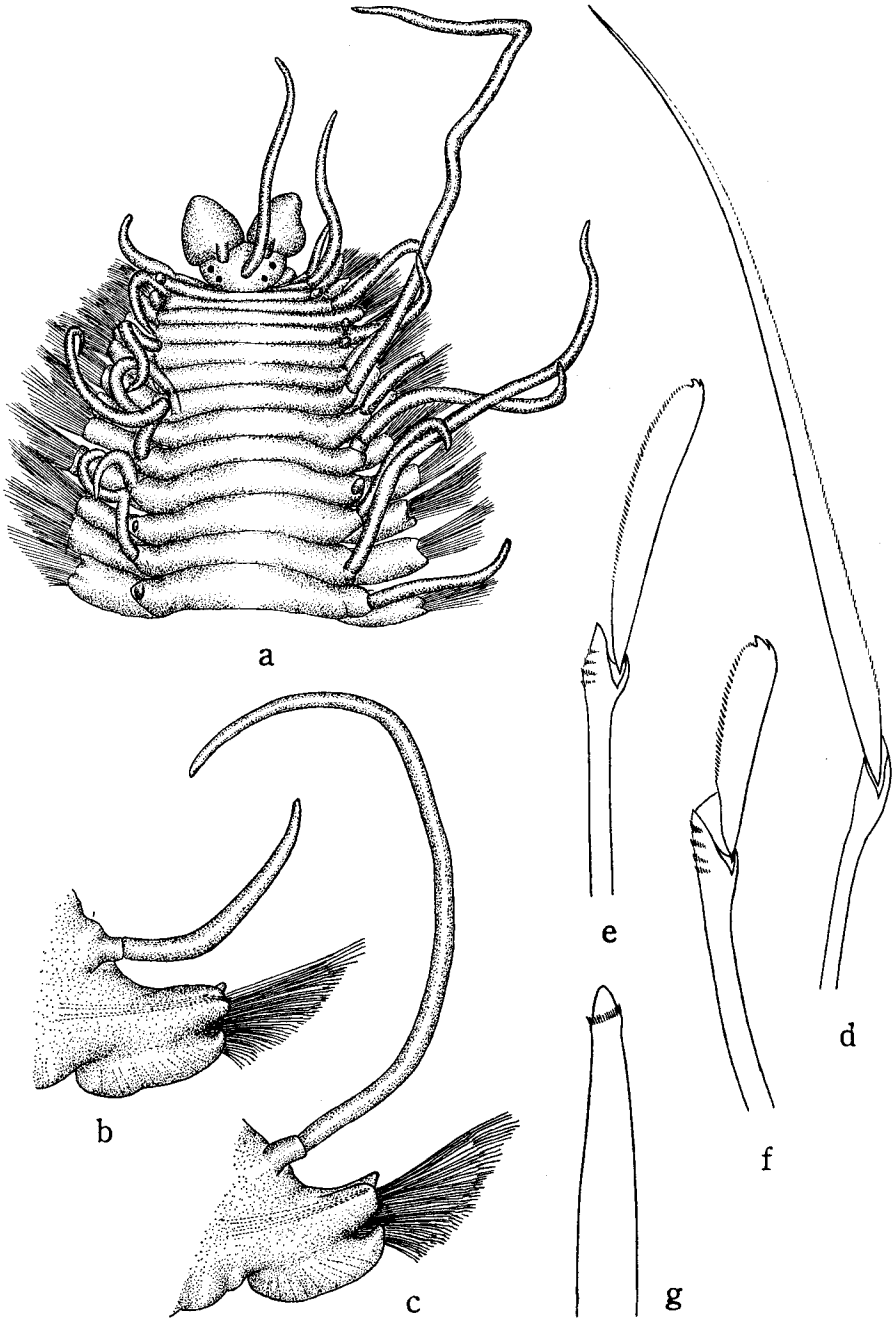
The prostomium is broader than long; there are two pairs of eyes. Three antennae, two pairs of tentacular cirri and dorsal cirri are long, smooth and cirriform. Palpi are separated from one another or basally fused. The pharyngeal sheath has a distal circlet of 10 papillae; its inner linning has a middorsal tooth and its distal margin is smooth. The parapodium is blunt and fleshy; its setae are compound with uni- or bidentate appendages. Ventral cirri are short digitiform or foliaceous.

Pionosyllis uraga n. sp.

(Text-fig. 37, a–g)

Collection: Uraga Strait of Tokyo Bay, in 40–150 m.

Description: Nine anterior fragments were collected and all are somewhat damaged. The largest one measures 4 mm long and 1.5 mm wide including parapodia for 25 segments. The body is yellow and has no color markings. The prostomium is broader than long and has two pairs of reddish eyes in trapezoidal arrangement (fig. a). A median antenna arises between the posterior eyes and is about 5 times as long as the prostomium; it is slender and not articulated. Lateral antennae arise in front of the anterior eyes. Palpi are broadly triangular and separated. The pharynx is surrounded by 10 soft papillae and has a middorsal subdistal tooth in the inner wall; its anterior margin is smooth. The proventriculus extends from setigerous segment 13 to 21. The tentacular segment is dorsally reduced. Two pairs of tentacular cirri and most of dorsal cirri are detached from the body or are distally incomplete. The dorsal cirri are smooth, slender and alternate in length; the short cirri are as long as the body is wide, and the long ones are about 3 times as long as the short ones (figs. b, c). Each dorsal cirrus has a long basal cirrophore. The parapodium is prolonged conical; its setae are two kinds of compound falcigers. Each of the superior setae, numbering 5



Text-fig. 37. *Pionosyllis uraga* n. sp. a, anterior end, in dorsal view, ×35; b, 10th parapodium, in posterior view, ×55; c, 11th parapodium, in same view, ×55; d, superior compound seta with long appendage (=spiniger) from 5th parapodium, ×950; e, f, compound setae with bladelike appendages from same parapodium, ×950; g, aciculum, ×950.

to 12, has a long, slender and distally tapered appendage; the cutting margin has minute serrations (fig. d); each of the other setae, numbering 30 to 60 in a fascicle, has a bladelike appendage, with a large subdistal secondary tooth; the cutting margin has minute serrations (figs. e, f). These appendages are gradually shorter posteriorly. The distal part of the shaft is thicker and has minute serrations. Acicula number 4 or 5 in a parapodium; each has a blunt tip and a circlet of serrations around the subdistal part (fig. g). Ventral cirri are elongate foliaceous and the basalmost part is fused with the setigerous lobe; their tips are curved upward and do not extend beyond the tips of the setigerous lobes (fig. c).

Pionosyllis uraga is characterized as follows: (1) composite setae are of two kinds, long with distally tapered appendage in superior position and bladelike appendage with bidentate tip; (2) ventral cirri are elongate foliaceous and fused with the setigerous lobe, and (3) the distal part of the aciculum is surrounded by a ciliary band.

The genus *Pionosyllis* is new to Japan.

Distribution: Central Japan.

(*To be continued.*)