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Spionidae (Annelida, Polychaeta) from Japan III. The Genus *Prionospio* (*Minuspio*)

By

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Abstract Five species of the genus *Prionospio* (*Minuspio*) are described from Japanese waters. These include three new species, herein named *Prionospio* (*Minuspio*) *elegantula*, *P.* (*M.*) *pulchra* and *P.* (*M.*) *elongata*. *Prionospio* (*Minuspio*) *multibranchiata* BERKELEY is newly recorded from Japan, whereas *P.* (*M.*) *japonica* OKUDA was previously reported from brackish and euryhaline areas in Japan.

During the course of a study on spionids from Japanese waters, five species including three new species of the genus *Prionospio* (*Minuspio*) were recorded. Of these species, *Prionospio* (*Minuspio*) *japonica* OKUDA, 1935 was previously reported from brackish and euryhaline areas of Japan. *Prionospio* (*Minuspio*) *multibranchiata* BERKELEY is newly reported from Japan, and three new species, characterized by the nature of the branchiae, are described. The specimens of *Prionospio cirrifera* previously reported from Kagoshima Bay (IMAJIMA & TAKEDA, 1975) and Shimoda (IMAJIMA, 1982) are referred to *P.* (*M.*) *multibranchiata*. *Prionospio cirrifera* is, therefore, not yet known from Japanese waters. The collection localities mentioned in the text are shown in Fig. 1. The bulk of the collection, including type-specimens, is deposited in the National Science Museum, Tokyo.

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Genus ***Prionospio* (*Minuspio*)** FOSTER, 1971

Prostomium subtriangular, anteriorly rounded, blunt or inflated, extending posteriorly as a more or less well-developed keel. Peristomium forming a hood surrounding prostomium developed to varying extents. Branchiae all apinnate, beginning on setiger 2, varying from four to forty pairs. Anterior setae all capillaries. Hooded hooks in posterior neuro- and notopodia, bidentate to multidentate. Pygidium with anal cirri.

Key to Japanese Species of *Prionospio* (*Minuspio*)

1. With four pairs of apinnate slender branchiae 2
1′. With more than four pairs of apinnate branchiae 3

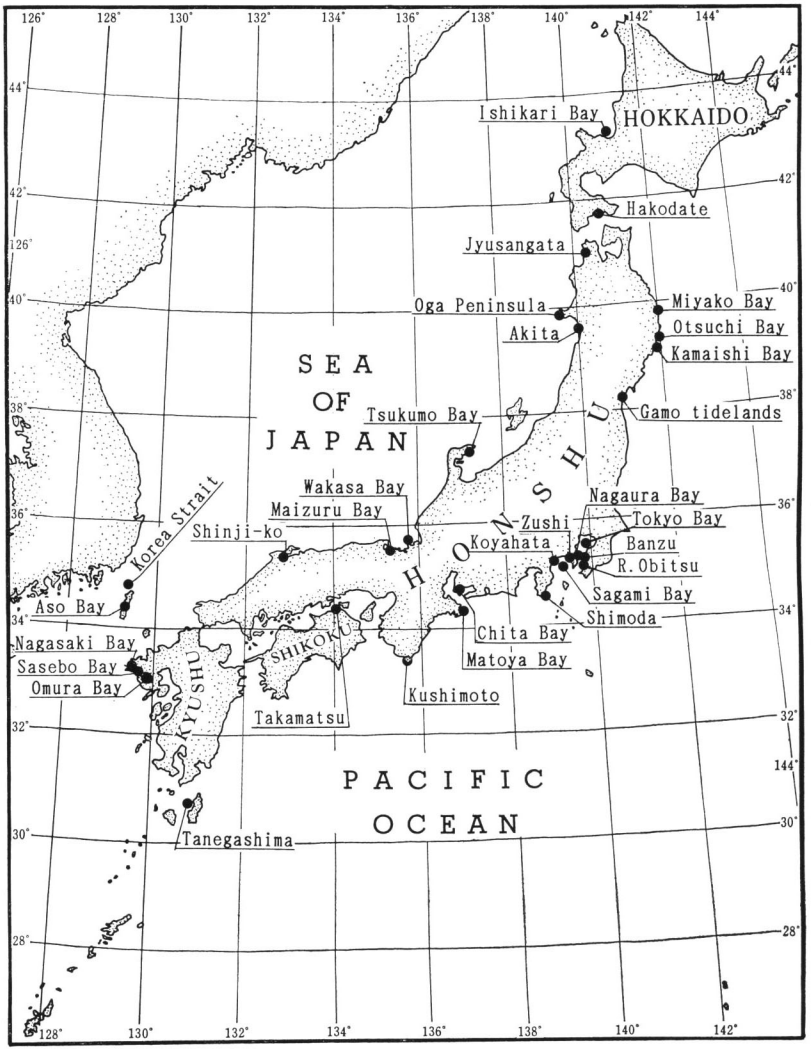

Fig. 1. Map of Japan, showing localities mentioned in the text.

2. Branchiae cylindrical, extending over 2–3 segments; notopodial lamellae largest on setigers 2–6; dorsal crests lacking throughout body .... *Prionospio* (*Minuspio*) *japonica* OKUDA

2′. Branchiae long, thin, extending over 12–13 segments; notopodial lamellae largest on setigers 2–13 or 14; dorsal crests appearing from setiger 16 .... *P.* (*M.*) *elegantula* sp. nov.

3. Branchiae all extremely long, thin, extending over 6–8 segments .... *P.* (*M.*) *pulchra* sp. nov.

3′. Branchiae slender or partly subtriangular, extending over 2–5 segments 4
4. Branchiae slender, subequal throughout; neuropodial lamellae of setiger 2 rectangular .....*P.* (*M.*) *multibranchiata* BERKELEY
4′. Branchiae subtriangular, with last 4 pairs extremely elongated; neuropodial lamellae of setiger 2 tapering to a point.....*P.* (*M.*) *elongata* sp. nov.

Prionospio (*Minuspio*) *japonica* OKUDA, 1935

(Figs. 2 a–d, 3 a–j)

Prionospio japonicus OKUDA, 1935, pp. 241–243, fig. 1; 1937, p. 242, fig. 19; IMAJIMA & HARTMAN, 1964, p. 284.
Minuspio japonica: FOSTER, 1971, p. 107.
Prionospio (*Minuspio*) *japonica*: MACIOLEK, 1985, p. 376.

Material examined. Jyusangata Inlet, Aomori Pref. (1 specimen), VIII–1968, coll. S. NAKAO. Gamo tidelands, near Sendai, Miyagi Pref. (1), III–1973, coll. M. TSUCHIYA. Mouth of River Obitsu, in tidelands, Chiba Pref. (20), V–1973; Lake Shinji-

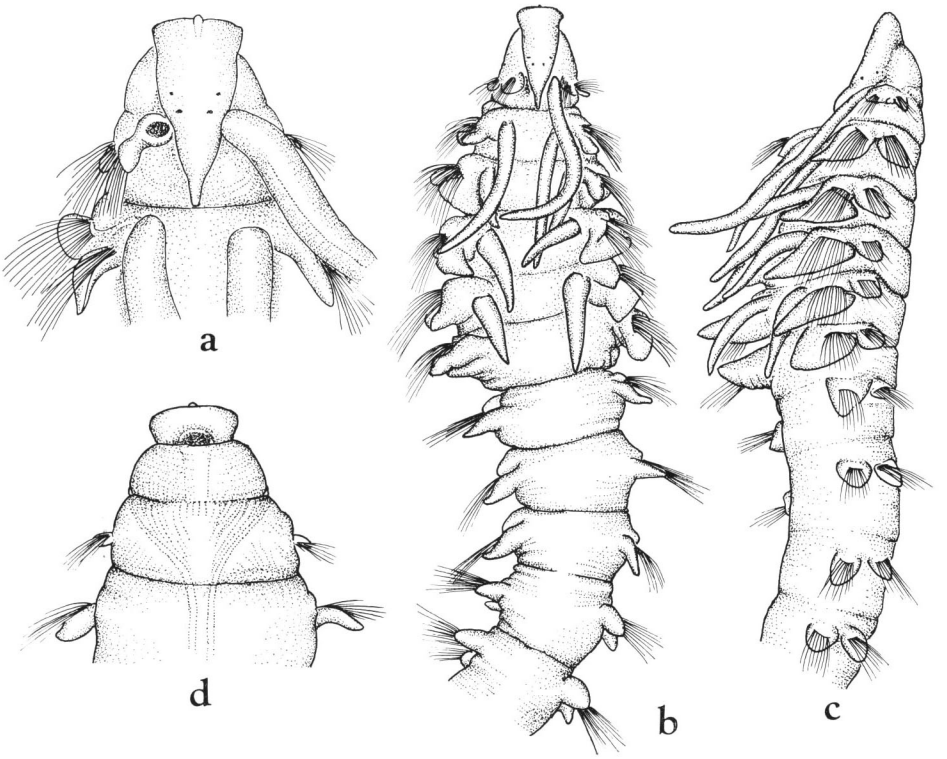

Fig. 2. *Prionospio* (*Minuspio*) *japonica* OKUDA. —— a, Prostomium and two setigers, dorsal view, left palp removed, ×74; b, anterior end, dorsal view, left palp removed, ×44; c, anterior end, lateral view, ×44; d, anterior end, ventral view, ×74.

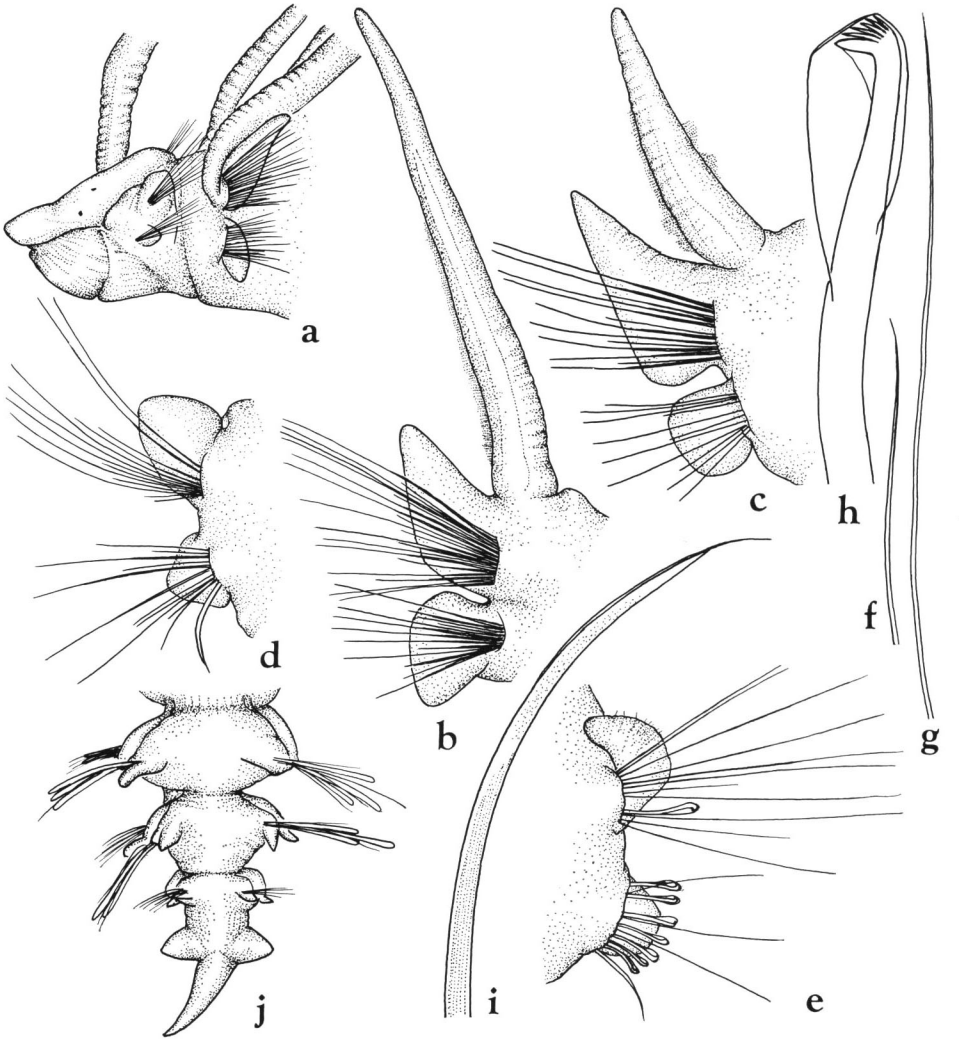

Fig. 3. *Prionospio* (*Minuspio*) *japonica* OKUDA. —— a, Anterior end, lateral view, left palp removed, ×74; b, setiger 2, anterior view, ×122; c, setiger 3, anterior view, ×122; d, setiger 10, anterior view, ×122; e, setiger 45, anterior view, ×88; f, g, capillary setae, ×240; h, hooded hook, ×900; i, sabre seta, ×578; j, posterior end, dorsal view, ×74.

ko, Shimane Pref., in 4–5 m (5), VII–1982, coll. M. NAKAMURA. Specimens come from brackish and euryhaline areas.

Description. Largest complete specimen with 83 setigers, measuring 20 mm in length and 0.5 mm in width including parapodia.

Prostomium bluntly triangular, flared on anterior margin, often with small median peak, tapered posteriorly, with caruncle extending to base of setiger 1; two pairs of

small eyes present in trapezoidal arrangement (Fig. 2 a, b). Peristomium fused with setiger 1, forming moderate lateral wings (Fig. 2 a, c, d). Palps slender, extending back to setigers 6–8 (Fig. 2 b, c).

Branchiae, cirriform, apinnate, present on setigers 2–5 (Fig. 2 b, c); pair 1 (Fig. 3 b) longest, about twice length of others (Fig. 3 c); all with short cilia on lateral edges.

Setiger 1 reduced, lacking notopodial lamellae (Fig. 3 a). Notopodial lamellae largest, subtriangular on setigers 2–6 (Figs. 2 c, 3 b, c); lamellae becoming smaller, triangular in post-branchial setigers, not forming dorsal ridges or crests (Figs. 2 c, 3 d). Neuropodial lamellae on setiger 1 very small, conical (Fig. 2 c); becoming larger, square in branchial setigers (Fig. 3 b, c), then smaller, triangular in post-branchial setigers (Fig. 3 d, e).

Anterior setae all striated capillaries, lacking granulations, arranged in two rows, setae of anterior row shorter (Fig. 3 f, g). Neuropodial hooded hooks from setiger 16–18, up to 7 per fascicle; notopodial hooks present from setiger 28–35, numbering up to 2 per fascicle; hooks accompanied by capillaries throughout; shaft of hook long, with 4 to 5 pairs of small teeth above main fang (Fig. 3 h). Ventral sabre seta from neuropodial setiger 10 (Fig. 3 d), numbering one per fascicle, each seta curved, slightly granulated, sheathed (Fig. 3 i).

Pygidium with two short, broad ventrolateral lobes, and one short, dorsomedial cirrus (Fig. 3 j).

Distribution. Japan; intertidal to 5 m.

Prionospio (Minuspio) elegantula sp. nov.

(Figs. 4 a–h, 5 a–i)

Material examined. Around Oga Peninsula, 39°49.8′N, 139°47.2′E–39°50.0′N, 139°47.5′E, in 70–65 m (holotype and 27 paratypes), 39°49.3′N, 139°46.3′E–39°49.5′N, 139°46.8′E, in 82–78 m (9), 39°48.5′N, 139°45.4′E–39°48.9′N, 139°45.4′E, in 92–91 m (7), 39°47.2′N, 139°47.5′E–39°47.3′N, 139°48.0′E, in 82–78 m (6), 39°45.9′N, 139°49.9′E–39°45.8′N, 139°49.8′E, in 70–72 m (69), 39°45.3′N, 139°48.8′E–39°45.0′N, 139°48.3′E, in 80–83 m (75), 39°44.6′N, 139°47.8′E–39°44.3′N, 139°47.6′E, in 90–93 m (27), 39°53.6′N, 139°42.5′E–39°53.7′N, 139°43.2′E, in 75–68 m (56), 39°53.6′N, 139°41.5′E–39°53.5′N, 139°42.3′E, in 101–93 m (27), 40°01.1′N, 139°49.7′E–40°00.7′N, 139°50.0′E, in 32–29 m (1), 39°50.4′N, 139°45.0′E–39°50.8′N, 139°44.7′E, in 90–89 m (4), 39°46.4′N, 139°45.5′E–39°46.5′N, 139°45.8′E, in 103–98 m (4), 39°46.7′N, 139°46.5′E–39°46.9′N, 139°46.5′E, in 91–88 m (1), VI–1983. Off Akita, 39°47.0′N, 139°48.0′E, in 80 m (3), VIII–1982. Off Tanegashima, 30°35.9′N, 131°06.0′E, in 60 m (1), VI–1975.

Description. Most specimens, including holotype, missing posterior ends. Holotype incomplete with 47 setigers, measuring 10 mm in length and about 0.5 mm in width including parapodia; small complete specimen (paratype) with 53 setigers,

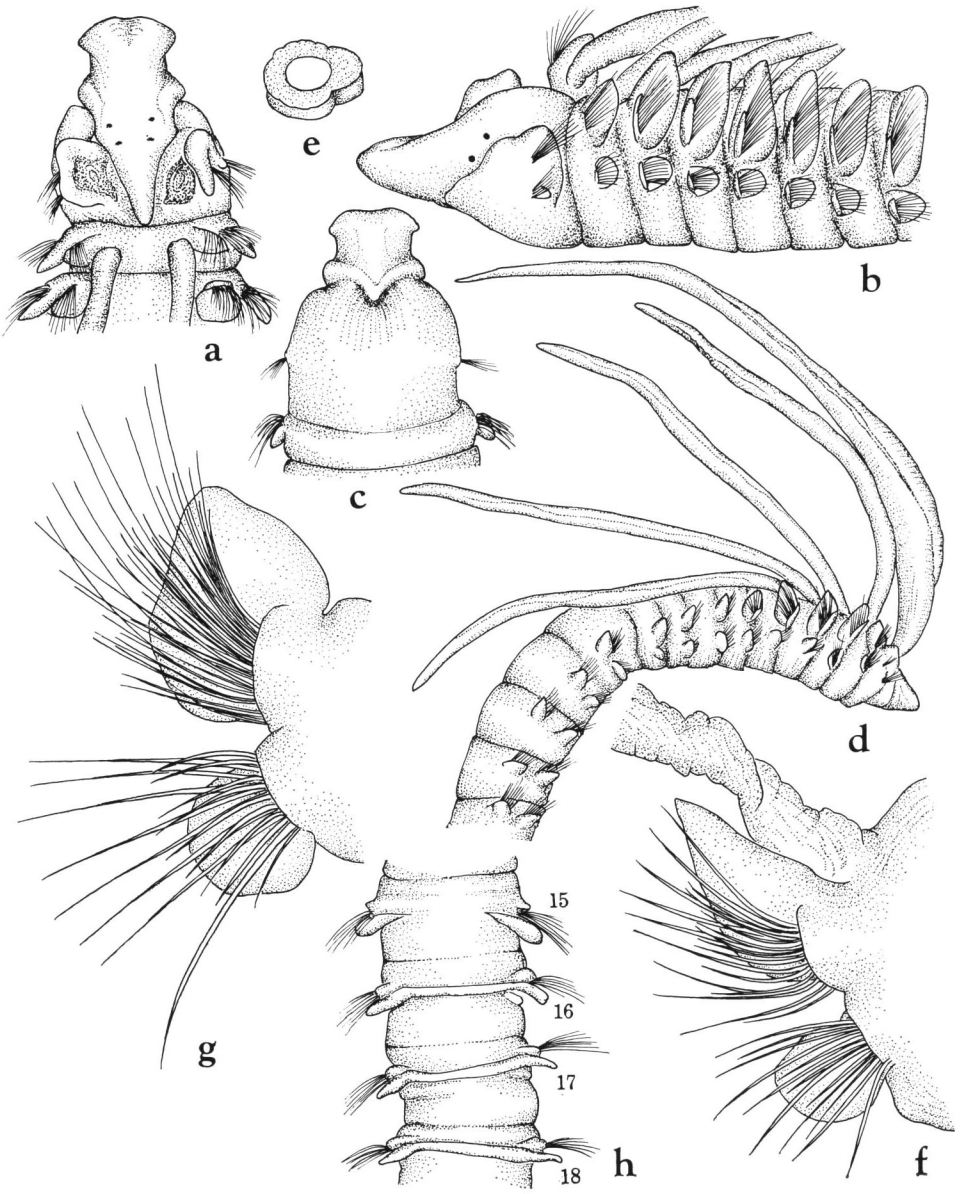

Fig. 4. *Prionospio* (*Minuspio*) *elegantula* sp. nov. —— a, Prostomium, dorsal view, palps removed, ×74; b, anterior end, lateral view, ×74; c, anterior end, ventral view, ×74; d, anterior end of paratype, showing long palp, left palp and branchiae removed, ×44; e, cross section of branchia, ×180; f, setiger 3, anterior view, ×180; g, setiger 12, anterior view, ×180; h, setigers 15 through 18, dorsal view, showing dorsal crests, ×44.

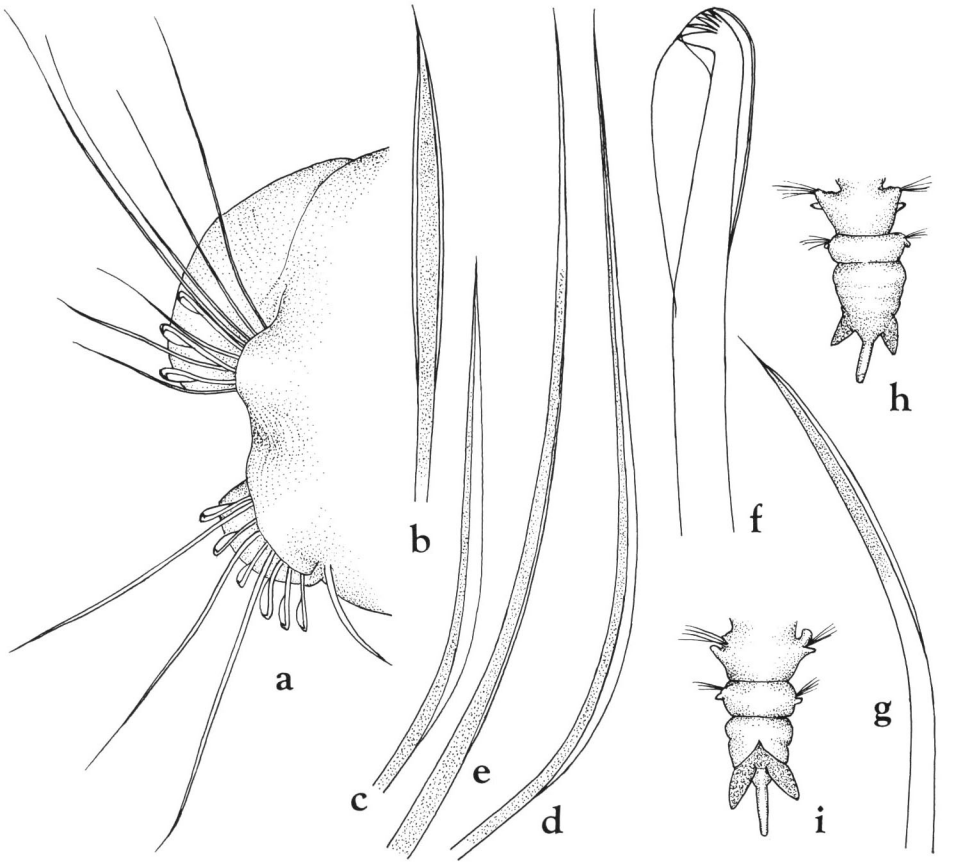

Fig. 5. *Prionospio* (*Minuspio*) *elegantula* sp. nov. —— a, Setiger 38, anterior view, ×180; b, c, capillary setae of anterior row, ×638; d, e, capillary setae of posterior row, ×638; f, hooded hook, ×1,700; g, sabre seta, ×900; h, i, posterior ends, dorsal (h) and ventral (i) views, ×98.

measuring 6 mm in length and 0.27 mm in width including parapodia.

Prostomium broadly triangular, flared on anterior margin, slightly concave at median part, tapered posteriorly, with caruncle extending to base of setiger 1; two pairs of eyes present in trapezoidal arrangement (Fig. 4 a). Peristomium completely fused with setiger 1, forming moderate lateral wings (Fig. 4 b, c). Palps in one of paratypes thick, extending posteriorly for 18 to 24 segments (Fig. 4 d).

Branchiae present on setigers 2–5, apinnate, extremely long, thin, all subequally large, extending posteriorly for 12–13 segments (Fig. 4 d); cross section of branchia heart-shaped (Fig. 4 e).

Setiger 1 reduced, lacking notopodial lamellae (Fig. 4 b). Notopodial lamellae triangular, largest on setiger 13 or 14 (Fig. 4 f, g), lamellae of posterior setigers rounded.

Dorsal crests starting on setiger 16 (Fig. 4 h) and continuing to about setiger 30; dorsal crests lacking on posterior setigers (Fig. 5 a). Neuropodial lamellae on setiger 1 small, conical; lamellae becoming larger, rounded in posterior setigers.

Anterior setae all moderately granulated capillaries, arranged in two rows, setae of anterior row shorter (Fig. 5 b, c), those of posterior row longer (Fig. 5 d, e). Neuropodial hooded hooks from setiger 15–16, numbering up to 6 per fascicle; notopodial hooks from setiger 28–35, up to 3 per fascicle; hooks accompanied by capillaries throughout; hooks with 4 pairs of small teeth above main fang (Fig. 5 f). Ventral sabre setae starting on setiger 12–14, numbering one per fascicle, each seta moderately granulated, with short filament at tip (Fig. 5 g).

Pygidium with one slender unpigmented dorsomedial cirrus and two short ventrolateral lobes with brown pigment (Fig. 5 h, i).

Remarks. *Prionospio* (*Minuspio*) *elegantula* is related to *Prionospio delta* HARTMAN, 1965 (redescribed by MACIOLEK, 1985), from off northeastern South America, in 520–1,500 m, in the complete fusion of the peristomium and setiger 1, in the loss of the notopodial lamellae on setiger 1, in possessing extremely long and thin branchiae and in the presence of the low dorsal crests on several post-branchial setigers. However, *Prionospio* (*Minuspio*) *elegantula* is distinguishable from *P. delta* in having four rather than six pairs of branchiae. *P.* (*M.*) *elegantula* is a shallow-water species, compared to *P. delta*, which occurs at depths of 520–2,200 m.

Type-series. Holotype, NSMT-Pol. H 300; 27 paratypes, NSMT-Pol. P 301.

Distribution. Japan; 29–101 m.

Prionospio* (*Minuspio*) *pulchra sp. nov.

(Figs. 6 a–e, 7 a–i)

Material examined. Hakodate Bay, 41°47.0′N, 140°43.5′E, in 8 m (1), 41°47.1′N, 140°43.2′E, in 9.5 m (4), X–1979, coll. S. NAKAO. Miyako Bay, 39°36.3′N, 141°58.3′E, in 8 m (1), VII–1967. Otsuchi Bay, 39°20.6′N, 141°57.0′E, in 30 m (2), 39°20.5′N, 141°56.2′E, in 24 m (3), VII–1985. Kamaishi Bay, in 19 m (1), XI–1973. Off Oga Peninsula, 39°50.4′N, 139°45.0′E–39°50.8′N, 139°44.7′E, in 90–89 m (1), 39°53.6′N, 139°42.5′E–39°53.7′N, 139°43.2′E, in 75–68 m (1), VI–1983. Tokyo Bay, 35°37.1′N, 140°01.5′E, in 7 m (101), 35°28.0′N, 139°58.0′E, in 10 m (57), XII–1971, KT–71–19; 35°35.0′N, 140°03.6′E, attached on buoy (5), VII–1974; 35°39.0′N, 139°59.2′E, attached on buoy (3), XI–1974; 35°35.0′N, 140°00.0′E, in 11 m (2), 35°32.2′N, 139°55.0′E, in 18 m (1), III–1975, KT–75–2; 35°19.0′N, 139°42.0′E, in 47 m (holotype and 7 paratypes), III–1981; 35°28.0′N, 139°46.0′E, in 23 m (1), V–1982; 35°31.0′N, 139°48.0′E, in 8 m (3), 35°36.0′N, 140°02.2′E, in 10 m (2), 35°22.0′N, 139°44.0′E, in 20 m (1), III–1983. Banzu, Chiba Pref., in tidelands (215), VI–1974; Nagaura Bay, 35°18.0′N, 139°38.7′E, in 12 m (138), X–1977. Sagami Bay, 35°16.5′N, 139°33.4′E, in 17 m (1), 35°15.8′N, 139°32.7′E, in 45 m (1), VII–1969; 35°12.4′N, 139°36.3′E, in 8 m (4), VII–1979; 35°13.2′N, 139°34.1′E–35°13.4′N, 139°34.2′E, in 67 m (1), IX–1979.

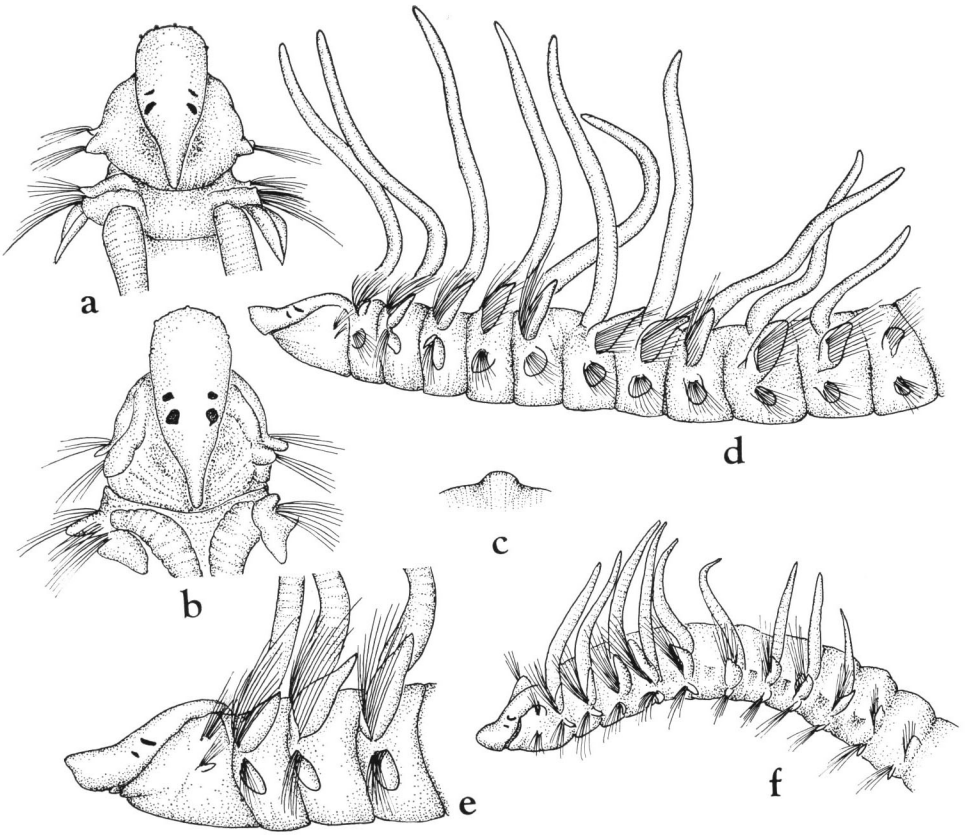

Fig. 6. *Prionospio* (*Minuspio*) *pulchra* sp. nov. —— a, Prostomium and two setigers, dorsal view, ×70; b, same of paratype, dorsal view, ×88; c, enlargement of prostomial peak, dorsal view, ×353; d, anterior end, lateral view, ×44; e, anterior end, lateral view, ×70; f, anterior end of paratype, lateral view, ×44.

Matoya Bay, among attached organisms on rope (3), VIII–1980. Ise Bay, 34°56.8′N, 136°40.0′E, in 9 m (27), 34°53.0′N, 136°45.0′E, in 30 m (5), X–1972. Chita Bay, 34°43.3′N, 136°59.7′E, in 20 m (2), II–1973. Maizuru Bay, in 5–22 m (27), VIII–1975. Omura Bay, 33°03.4′N, 128°49.4′E, in 5 m (2), VI–1972; 33°04.2′N, 128° 47.3′E, in 5 m (1), 33°03.5′N, 128°47.6′E, in 12 m (3), VIII–1972; 32°58.5′N, 128° 54.0′E, in 17 m (1), XI–1972; 33°00.0′N, 128°56.0′E, in 15 m (1), II–1973. Sasebo Bay, 33°07.0′N, 128°42.4′E, in 10 m (1), 33°09.1′N, 128°43.1′E, in 10 m (2), V–1972.

Description. Holotype largest complete individual, measuring 12 mm in length and about 0.4 mm in width for 62 setigers including parapodia. Body slender, subcylindrical, colorless in alcohol.

Prostomium subtriangular, broadly rounded anteriorly, with five small marginal peaks; prostomium extending as narrow caruncle to base of setiger 1; four dark,

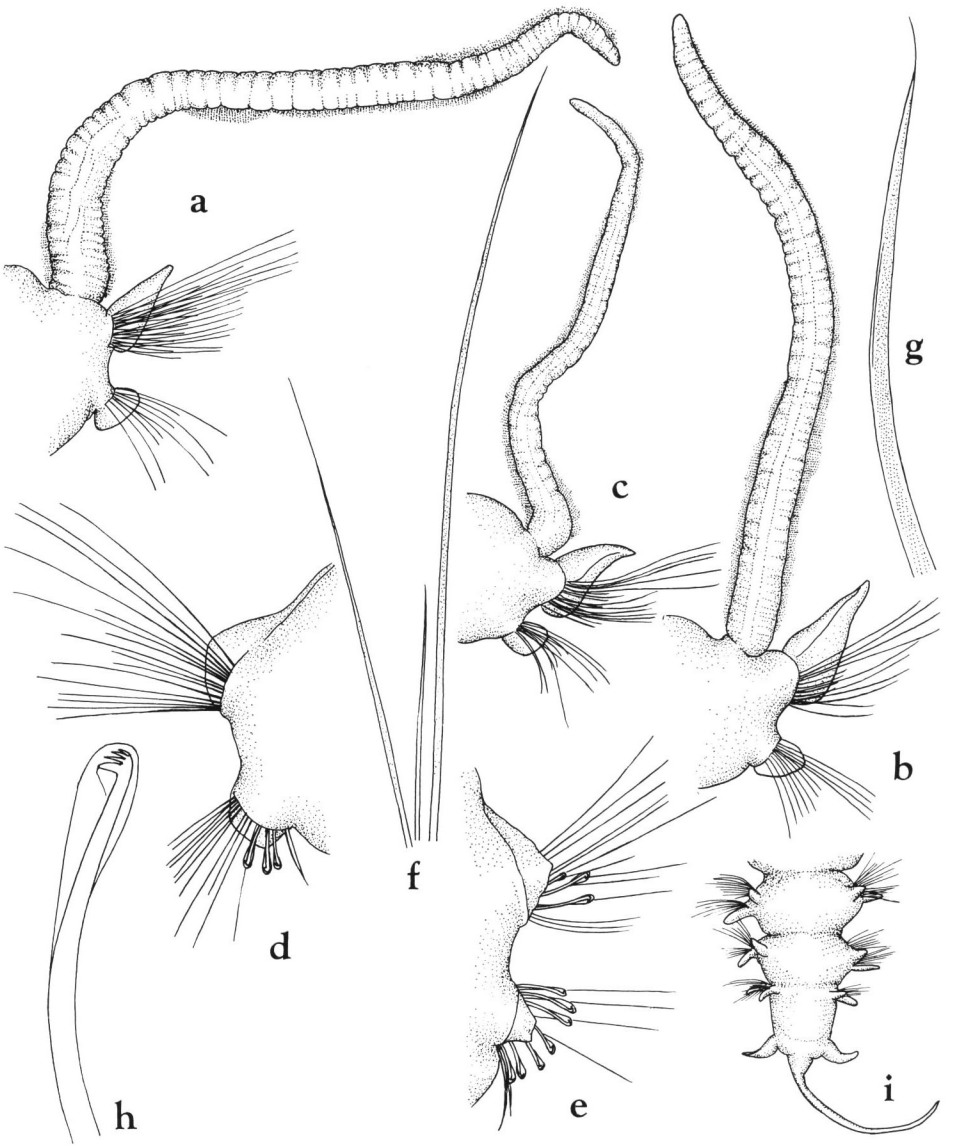

Fig. 7. *Prionospio* (*Minuspio*) *pulchra* sp. nov. —— a, Setiger 2, anterior view, ×88; b, setiger 6, anterior view, ×88; c, setiger 6 of paratype, anterior view, ×88; d, setiger 18, anterior view, ×122; e, setiger 45, posterior view, ×122; f, notopodial setae, ×353; g, sabre seta, ×578; h, hooded hook, ×900; i, posterior end, dorsal view, ×70.

crescent-shaped eyes present, posterior pair larger than anterior pair (Fig. 6 a–c). Peristomium fused to setiger 1, forming moderate lateral wings (Fig. 6 d, e).

Branchiae cylindrical, apinnate, present from setiger 2, numbering 9–10 pairs (Fig. 6 d, f); pairs 1–4 longest, extending to setigers 8–11; last pair shortest, extending over two setigers.

Parapodia of setiger 1 reduced, lacking notopodial lamellae, neuropodial lamellae very small (Fig. 6 e). Parapodia of setiger 2 with erect, triangular notopodial lamellae and bluntly rounded neuropodial postsetal lamellae (Fig. 7 a). Remaining notopodial postsetal lamellae largest in branchial region, somewhat asymetrical, forming V-shaped cup (Fig. 7 b, c); those of posterior setigers rounded, forming low dorsal crest on several post-branchial setigers (Fig. 7 d). Neuropodial lamellae rounded, well developed from setiger 2; lamellae low, rectangular in posterior setigers (Fig. 7 e).

Anterior noto- and neuropodial setae all moderately granulated capillaries with thin sheath (Fig. 7 f); setae arranged in three rows. Ventral sabre setae from setiger 11 (to 12), numbering one or two per fascicle, each seta rather slender with distal filament, moderately granulated (Fig. 7 g). Neuropodial hooded hooks from setiger 15–16, numbering up to 7 per fascicle; notopodial hooks from setiger 30 (25–33), numbering up to 3 per fascicle (Fig. 7 e); hooks accompanied by capillaries throughout; hooks with three pairs of small teeth above main fang (Fig. 7 h); secondary hood small.

Pygidium with one long dorsomedial and two shorter ventrolateral cirri (Fig. 7 i).

Remarks. *Prionospio* (*Minuspio*) *pulchra* is closely related to *P.* (*M.*) *patagonica* AUGENER, 1923 from West Patagonia, *P.* (*M.*) *perkinsi* MACIOLEK, 1985 from the Gulf of Mexico to New England, and *P.* (*M.*) *lighti* MACIOLEK, 1985 from California, in possessing about 10 pairs of extremely long and thin branchiae.

Prionospio (*Minuspio*) *pulchra* differs from *P.* (*M.*) *patagonica* revised by BLAKE (1983) in lacking postsetal lamellae in both rami rather than having neuropodial lamellae.

Prionospio (*Minuspio*) *pulchra* differs from *P.* (*M.*) *perkinsi* in having rather than lacking ventral sabre setae.

Prionospio (*Minuspio*) *pulchra* differs from *P.* (*M.*) *lighti* in having rather than lacking notopodial setae on setiger 1.

Type-series. Holotype, NSMT–Pol. H 302; 7 paratypes, NSMT–Pol. P 303.

Distribution. Japan; intertidal to 67 m.

Prionospio* (*Minuspio*) *multibranchiata BERKELEY, 1927

(Figs. 8 a–e, 9 a–h)

Prionospio multibranchiata BERKELEY, 1927, p. 414, pl. 1, fig. 1.
Prionospio (*Minuspio*) *multibranchiata*: MACIOLEK, 1985, pp. 365–367, fig. 15.
Prionospio cirrifera: IMAJIMA & TAKEDA, 1975, p. 360; IMAJIMA, 1982, p. 159 (not WIRÉN, 1883).

Material examined. Ishikari Bay, 43°24.7′N, 141°03.2′E–43°24.5′N, 141°03.4′E, in 65–67 m (1), V–1987. Miyako Bay, in 38 m (1), VII–1967. Otsuchi Bay, 39° 20.5′N, 141°57.2′E–39°20.6′N, 141°57.4′E. in 43–45 m (6), 39°21.5′N, 141°58.7′E–39°

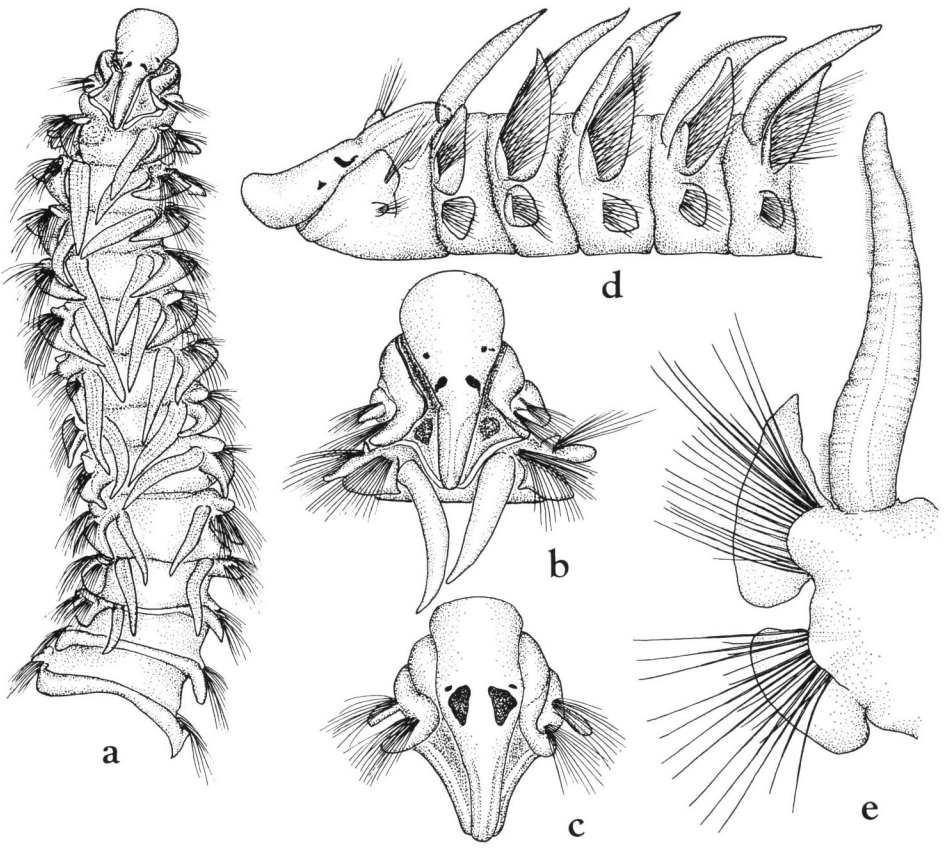

Fig. 8. *Prionospio* (*Minuspio*) *multibranchiata* BERKELEY. —— a, Anterior end of specimen from Matoya Bay, dorsal view, ×44; b, prostomium, dorsal view, palps removed, ×70; c, prostomium of specimen from Tokyo Bay, dorsal view, palps removed, ×70; d, anterior end, lateral view, right branchiae and parapodia omitted, ×74; e, setiger 2, anterior view, ×117.

21.8′N, 141°59.0′E, in 65–70 m (1), VIII–1979; 39°20.4′N, 141°55.8′E, in 10 m (2), VII–1985. Kamaishi Bay, in 29 m (4), in 53 m (1), XI–1973. Around Oga Peninsula, 39°49.9′N, 139°53.3′E–39°49.6′N, 139°53.5′E, in 31–33 m (9), 39°45.3′N, 139°48.8′E–39°45.0′N, 139°48.3′E, in 80–83 m (3), 39°48.5′N, 139°50.5′E–39°48.3′N, 139°50.1′E, in 57–62 m (1), 39°53.6′N, 139°41.4′E–39°53.5′N, 139°42.3′E, in 101–93 m (2), VI–1983. Tokyo Bay, 35°20.5′N, 139°41.0′E, in 38 m (1), VI–1973; 36°00.0′N, 140°02.0′E, in 10 m (2), VIII–1981. Uraga Channel, 35°13.5′N, 139°50.0′E, in 10 m (1), XII–1978. Sagami Bay, 35°17.4′N, 139°30.0′E, in 10 m (1), VII–1979. Nagaura Bay, 35°19.2′N, 139°40.1′E, in 8.5 m (2), X–1977. Off Zushi, Sagami Bay, 35°15.8′N, 139°32.7′E, in 45 m (1), VII–1967. Off Koyahata, Sagami Bay, in 150 m (1), V–1966. Near Shimoda, 34°39.7′N, 138°57.0′E–34°39.6′N, 138°56.9′E, in 17–28 m (2), X–1981.

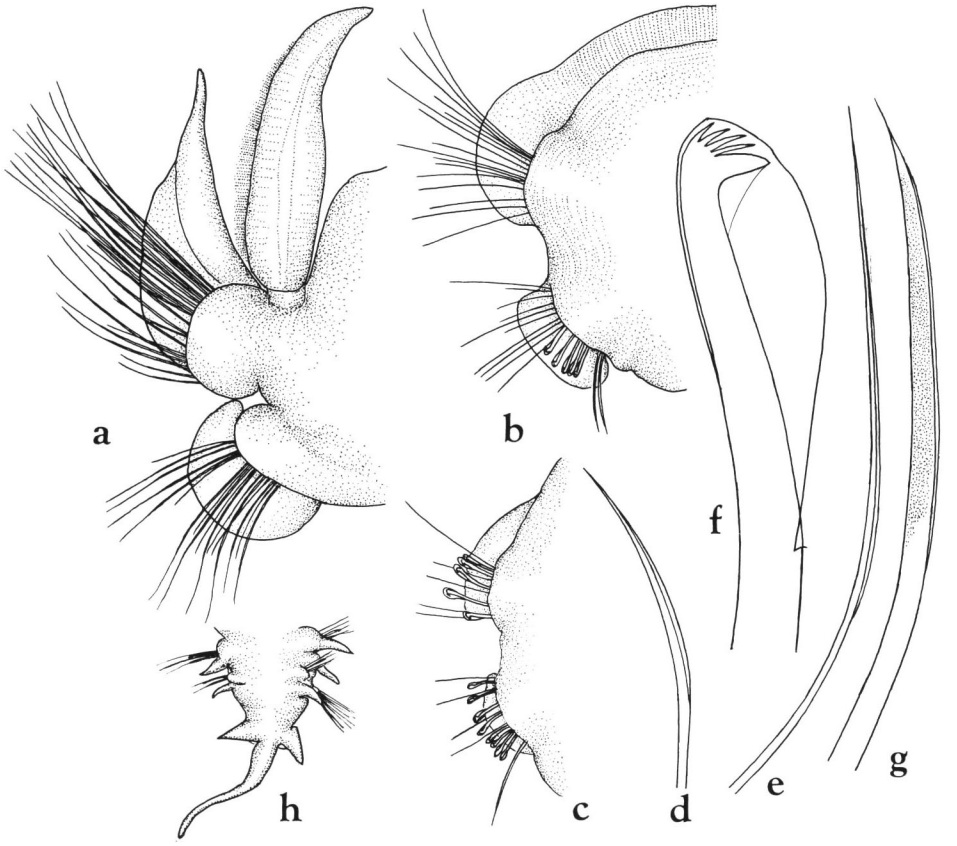

Fig. 9. *Prionospio* (*Minuspio*) *multibranchiata* BERKELEY. —— a, Setiger 6, anterior view, ×88; b, setiger 17, anterior view, ×88; c, setiger 60, anterior view, ×88; d, capillary seta of anterior row, ×240; e, capillary seta of posterior row, ×240; f, hooded hook, ×1,700; g, sabre seta, ×863; h, posterior end, dorsal view, ×44.

Matoya Bay, among attaching organisms (1), V–1981. Off Maizuru Bay, in 34 m (1), VIII–1975. Off Yuragawa, Wakasa Bay, in 30 m (4), IV–1976, coll. I. HAYASHI. Off Kushimoto, 33°27.8′N, 135°47.7′E, in 35 m (1), VII–1978. Off Takamatsu Harbor, in 8 m (5), VII–1983, coll. T. NANJO. Nagasaki Bay, in 44 m (2), III–1971, coll. T. OKINO. Omura Bay, 33°01.5′N, 128°46.0′E, in 30 m (20), 32°57.0′N, 128°52.0′E, in 20 m (6), VIII–1972. Sasebo Bay, 33°04.0′N, 128° 44.0′E, in 20 m (1), V–1972; 33°08.2′N, 128°42.8′E, in 12 m (7), II–1973. Off Tanegashima, 30°41.4′N, 131°07.5′E, in 56 m (3), VI–1975.

Description. Largest complete specimen with 90 setigers, measuring 16 mm in length and about 1 mm in width including parapodia.

Prostomium subtriangular, broadly rounded anteriorly, extending as narrow caruncle to base of setiger 1; two pairs of eyes, posterior pair very large, crescentric

(Fig. 8 a–c). Peristomium fused to setiger 1, forming moderate lateral wings distally curled back (Fig. 8 b–d).

Branchiae apinnate, cirriform, present from setiger 2, numbering 9–11 pairs (Fig. 8 a); anterior branchiae (Fig. 8 e) about 1.3 times as long as median ones (Fig. 9 a), extending beyond dorsal lamellae.

Notopodial lamellae lacking on setiger 1, fused edge of peristomium and setiger 1 sometimes slightly curled back (Fig. 8 a–d); lamellae largest in branchial region, triangular with elongated tip (Figs. 8 a, e, 9 a); those in post-branchial setiger 11–13 low, rounded, extending across dorsum to form low dorsal crests (Figs. 8 a, 9 b), posterior notopodial lamellae separated from each other (Fig. 9 c). Neuropodial lamellae from setiger 2 well developed, rectangular with rounded edges (Fig. 8 e); those in posterior setigers low, rounded (Fig. 9 c).

Anterior setae all moderately granulated capillaries with distinct sheath; setae arranged in two rows from setiger 2, shorter in anterior row (Fig. 9 d), longer in posterior row (Fig. 9 e). Neuropodial hooded hooks from setiger 16–17, numbering up to ten per fascicle; notopodial hooks from setiger 28–30, numbering up to five per fascicle; hooks accompanied by capillaries throughout; hooks with four pairs of small teeth above main fang, secondary hood small (Fig. 9 f). Ventral sabre setae from neuropodial setiger 12–13, moderately granulated, numbering one or two per fascicle (Fig. 9 g).

Pygidium with one long dorsomedial and two shorter ventrolateral cirri (Fig. 9 h).

Remarks. Specimens from Japan agree well with the diagnostic characters of *Prionospio* (*Minuspio*) *multibranchiata* by BERKELEY (1927) from the Nanaimo district of Vancouver Island, British Columbia and by MACIOLEK (1985) from Puget Sound and the Gulf of Mexico, except the number of pairs of small teeth above the main fang (3 pairs vs. 4 pairs).

Distribution. Vancouver Island; Gulf of Mexico; Florida; Japan; intertidal to 83 m.

Prionospio* (*Minuspio*) *elongata sp. nov.

(Figs. 10 a–e, 11 a–d, 12 a–i)

Material examined. Around Oga Peninsula, 39°50.4′N, 139°45.0′E–39°50.8′N, 139°44.7′E, in 90–89 m (holotype and 1 paratype), VI–1983. Off Tsukumo Bay, Noto Peninsula, in 40 m (1), V–1973. Tokyo Bay, 35°20.5′N, 139°41.0′E, in 38 m (1), VI–1973, KT–73–6. Sagami Bay, 35°13.2′N, 139°34.1′E–35°13.4′N, 139°34.2′E, in 67 m (1), IX–1979; 35°15.4′N, 139°16.0′E, in 110 m (1), VIII–1980. Korea Strait, 34° 56.4′N, 129°32.9′E, in 145 m (1), VIII–1968. Aso Bay, Tsushima, in 34 m (1), in 64 m (1), VII–1968.

Description. All specimens, including holotype, missing posterior ends. Holotype with 37 setigers, measuring 10 mm in length and about 1 mm in width including parapodia.

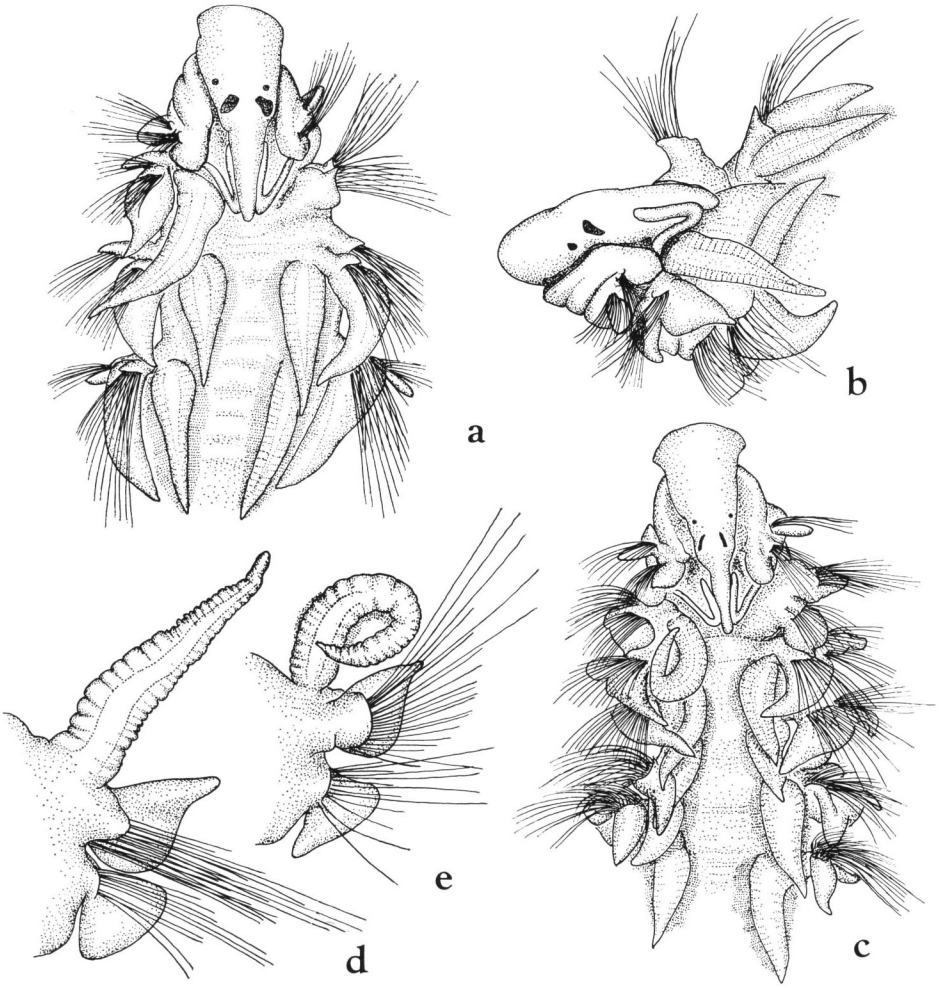

Fig. 10. *Prionospio* (*Minuspio*) *elongata* sp. nov. —— a, b, Anterior ends of holotype, dorsal (a) and lateral (b) views, ×38; c, anterior end of specimen from Aso Bay, dorsal view, ×38; d, setiger 2 of holotype, anterior view, ×58; e, setiger 2 of paratype, anterior view, ×58.

Prostomium rounded, broadly flared on anterior margin, posteriorly tapered with narrow caruncle ending at base of setiger 1; caruncle surrounded by V-shaped nuchal organs (Fig. 10 a–c); four eyes present, posterior pair very large (Fig. 10 a). Peristomium fused to setiger 1, forming low lateral wings (Fig. 10 c).

Branchiae apinnate, present on setigers 2–14; first pair about twice length of dorsal lamellae, slender, slightly wrinkled, without cilia in holotype (Fig. 10 d), but with cilia in paratype (Fig. 10 e); pairs 2–9 flattened, triangular, heavily ciliated, narrowing abruptly at tip, extending slightly beyond tip of dorsal lamellae (Figs. 10 a, 11 a, b);

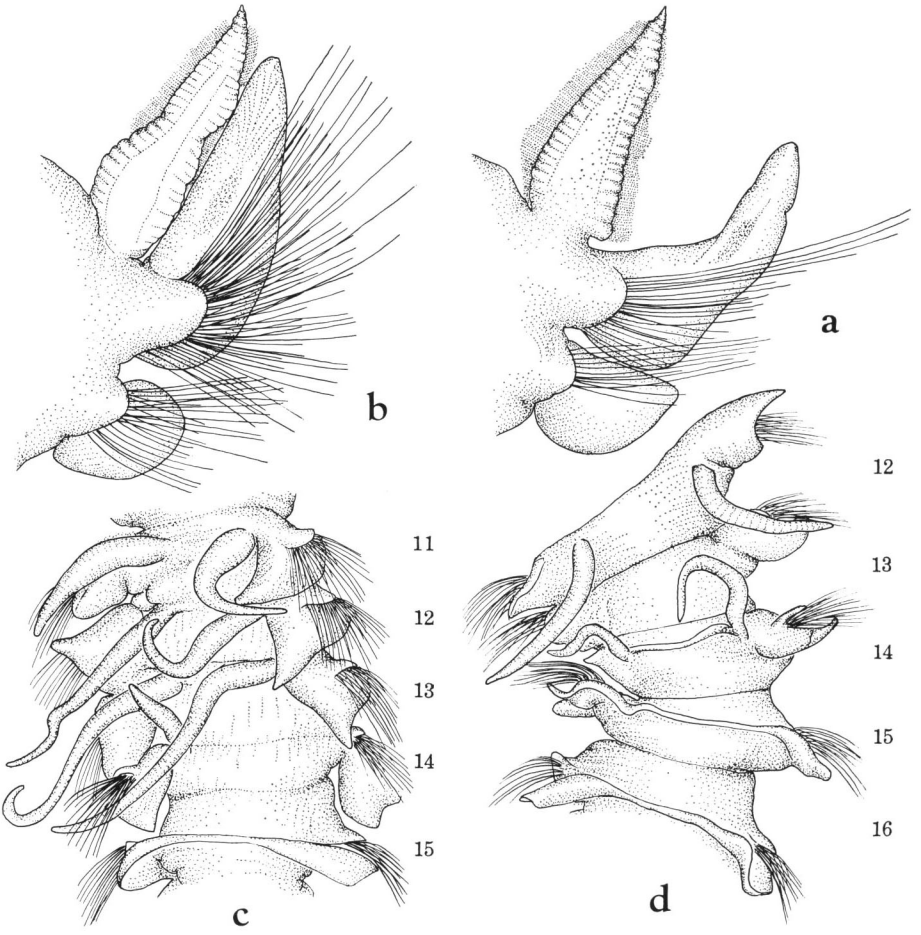

Fig. 11. *Prionospio* (*Minuspio*) *elongata* sp. nov. —— a, Setiger 3, anterior view, ×58; b, setiger 8, anterior view, ×58; c, 5 setigers in setigers 11 through 15, dorsal view, ×32; d, 5 setigers in setigers 12 through 16 of paratype, dorsal view, ×38.

pairs 10–13 subcylindrical with distally tapered ends (Fig. 11 c, d); pair 10 similar in size to first pair (Fig. 12 a); pairs 11 and 12 noticeably longer, slenderer with wrinkled cylindrical distal part lacking cilia (Fig. 12 b); last pair shorter, digitiform (Fig. 11 c, d).

Setiger 1 well developed, with conical notopodial lamellae and elongated neuropodial lamellae (Fig. 12 c). Notopodial lamellae elongated, triangular, largest on setigers 3–10 (Fig. 11 a, b), thereafter lamellae smaller, foliose (Fig. 12 a, b), becoming lower in posterior setigers (Fig. 12 d). Neuropodial lamellae of setigers 2–3 subtriangular (Figs. 10 d, e, 11 a), rounded thereafter (Figs. 11 b, 12 a, b). Dorsal membranous crest present on several setigers (Fig. 11 c, d) beginning on setiger 14–15.

Anterior setae all moderately granulated capillaries, with clear, narrow sheaths

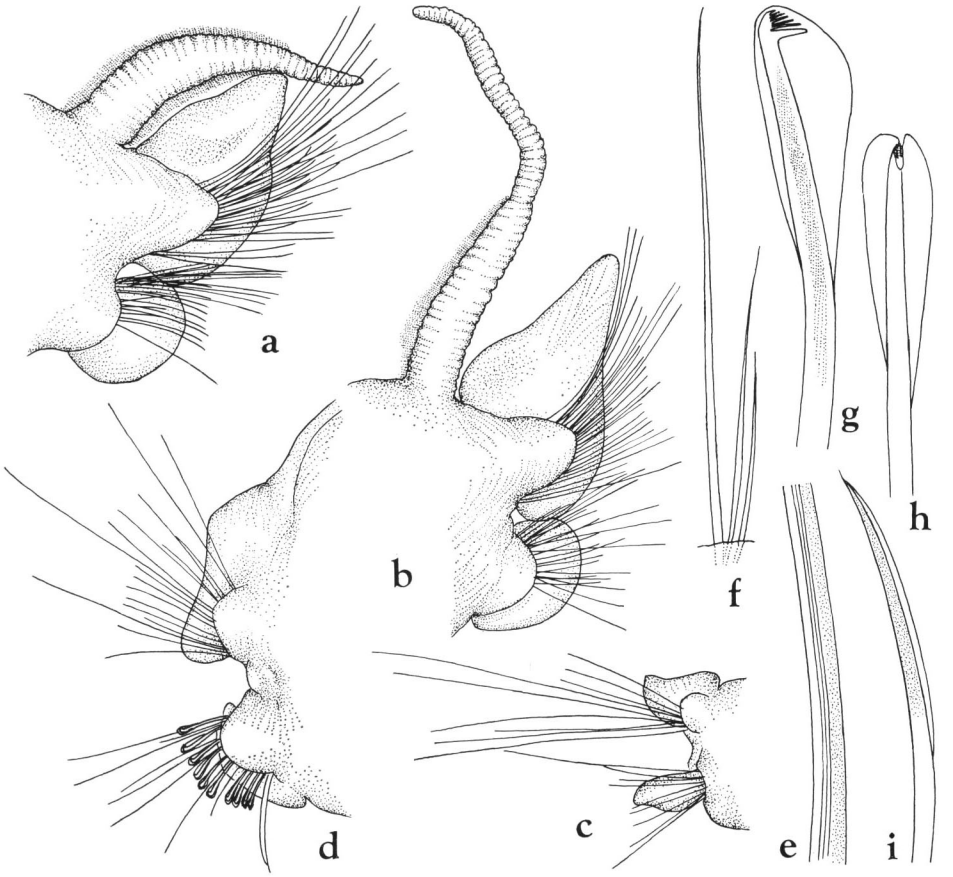

Fig. 12. *Prionospio* (*Minuspio*) *elongata* sp. nov. —— a, Setiger 11, anterior view, ×58; b, setiger 12, anterior view, ×58; c, setiger 1, anterior view, ×88; d, setiger 37, anterior view, ×88; e, part of capillary seta, ×638; f, capillary setae, part of notopodial fascicle on setiger 37, ×180; g, h, hooded hooks, lateral (g) and frontal (h) views, ×900; i, sabre seta, ×420.

(Fig. 12 e); notopodial capillaries more numerous, arranged in three rows (Fig. 12 f) with setae of anterior row shortest; neuropodial capillaries arranged in two rows, with anterior row shorter and posterior row longer. Neuropodial hooded hooks from setiger 19, numbering up to ten per neuropodium, accompanied by capillaries; hooks with six to seven pairs of small teeth above main fang (Fig. 12 g, h), notopodial hooks lacking in 37 setigers. Ventral sabre setae from neuropodial setiger 16, numbering one per fascicle; each seta lightly granulated, with short distal filament (Fig. 12 i).

Pygidium unknown.

Remarks. *Prionospio* (*Minuspio*) *elongata* differs from other species of the genus

in having flattened, triangular branchiae in addition to the four pairs of long, slender branchiae that occur on posterior branchial segments.

Type-series. Holotype, NSMT-Pol. H 304; 1 paratype, NSMT-Pol. P 305.

Distribution. Japan; 34–145 m.

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