Spionidae (Annelida, Polychaeta) from Japan
VIII. The Genus *Scoelepis*

By

Minoru IMAJIMA

Department of Zoology, National Science Museum, Tokyo

Abstract. Ten species of the genus *Scoelepis* are described from Japanese waters. These ten include six new species, herein named *Scoelepis* (Scoelepis) branchia, *S. (S.) lingulata*, *S. (S.) sagittaria*, *S. (S.) variegata*, *S. (S.) planata* and *S. (Parascolepis) geniculata*. *Scoelepis* (Scoelepis) lefebvrei Gravier, *S. (S.) kudenovi Hartmann-Schröder* and *S. (Parascolepis) texana* Foster are newly recorded from Japan. *Scoelepis* (Scoelepis) branchia appears to be transitional between the genera *Scoelepis* and *Dispio* in having accessory branchiae on notopodia. *Scoelepis* (Scoelepis) planata is characterized in having flattened occipital tentacle.

During the course of a study on Japanese spionids, ten species including six new species of the genus *Scoelepis* were recorded. Of these species, *Scoelepis* (Parascolepis) *yamaguchii* (Imajima, 1959) (as *Nerinides yamaguchii*) was previously reported from the intertidal zone of Hokkaido. *Scoelepis* (Scoelepis) *kudenovi* Hartmann-Schröder, 1981, *S. (S.) lefebvrei* (Gravier, 1905) and *S. (Parascolepis) texana* Foster, 1971 are newly reported from Japan. Six new species of *Scoelepis* are described.

The genus *Scoelepis* was reviewed by Pettibone (1963) and more recently by Maciok (1987) who proposed two subgenera, *Scoelepis* and *Parascolepis*, based on the structure of the hooded hooks.

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 *Scoelepis* Blainville, 1828

Prostomium pointed on anterior margin, extended posteriorly as narrow caruncle; caruncle attached or detached posteriorly. Occipital tentacle present or absent. Peristomium well developed, lateral wings present or absent. Branchiae present from setiger 2, continuing to near end of body, anterior branchiae completely fused to notopodial lamellae or distally free; accessory branchiae present or absent. Anterior setae limbate, sometimes reticulated capillaries; neuropodial hooded hooks
present; notopodial hooks present or absent. Hooks either falcate with 0–2 small apical teeth and straight shaft (subgenus *Scolelepis*); or multidentate with large main fang, several apical teeth and curved shaft (subgenus *Parascolelepis*). Pygidium with oval disc or multilobed (quoted from *Maciolek*, 1987: 17).

**Key to Japanese Species of *Scolelepis***

1. Hooks falcate with 0–2 small apical teeth, with straight shaft.............
Spionidae (Polychaeta) from Japan VIII.

1’. Hooks multidentate with large main fang and several apical teeth, with curved shaft ........................................ (Subgenus *Scolelepis*) 2
2. Notopodial setae absent on setiger 1; branchiae completely fused with notopodial lamellae anteriorly, becoming free; hooded hooks bidentate; with pigmented pattern on prostomium .......... *Scolelepis (Scolelepis) variegata* sp. nov.
2’. Notopodial setae present on setiger 1; branchiae partially fused with notopodial lamellae, tips free; hooded hooks unidentate or bidentate .......... 3
3. Occipital tentacle present ........................................ 4
3’. Occipital tentacle absent, but caruncle present ......................... 6
4. With short digitate occipital tentacle ................................... 5
4’. With flattened occipital tentacle ..................................... *S. (S.) planata* sp. nov.
5. Prostomium sagittate; hooded hooks bidentate; with notopodial hooks on posterior setigers ........................................... *S. (S.) sagittaria* sp. nov.
5’. Prostomium conical; hooded hooks unidentate; without notopodial hooks on posterior setigers ........................................ *S. (S.) lingulata* sp. nov.
6. With accessory branchiae on notopodia and broad reticulated setae ... .......................................................... *S. (S.) branchia* sp. nov.
6’. Without accessory branchiae and reticulated setae .................. 7
7. Hooded hooks bidentate; with notopodial hooks on posterior setigers; pygidium with smooth oval ventral cushion ........ *S. (S.) kudenovi* Hartmann-Schröder
7’. Hooded hooks unidentate; without notopodial hooks on posterior setigers; pygidium with incised ventral cushion ................. *S. (S.) lefebvrei* (Gravier)
8. Branchiae completely fused with notopodial lamellae throughout posterior setigers; with 2 pairs apical teeth .......... *S. (Parascolelepis) yamaguchii* (Imajima)
8’. Branchiae completely fused with notopodial lamellae anteriorly, becoming free posteriorly; with 3 pairs apical teeth ........................................ 9
9. Setiger 1 with notopodial setae and small neuropodial lamellae; pygidium with 2 ventral lobes ........................................... *S. (P.) geniculata* sp. nov.
9’. Setiger 1 without notopodial setae and with large, rounded neuropodial lamellae; pygidium with small ventral papillated lobe ................. *S. (P.) texana* Foster

Subgenus *Scolelepis* Blainville

*Scolelepis (Scolelepis) branchia* sp. nov.

(Figs. 2a–i, 3a–k)


*Description.* All specimens missing posterior end; holotype with 110 setigers, measuring 53 mm in length and 2.5 mm in width including parapodia. Body subequal in width through to about setiger 50, then gradually tapering posteriorly; generally
Fig. 2. *Scolelepis (Scolelepis) branchia* sp. nov. — a, Anterior end, dorsal view, ×22; b, same, lateral view, ×22; c, setiger 1, anterior view, ×40; d, setiger 2, anterior view, ×40; e, setiger 6, posterior view, ×40; f, setiger 20, anterior view, ×40; g, same, posterior view, ×40; h, accessory branchiae on setiger 30, ×58; i, setiger 40, anterior view, ×40.
rectangular in cross section; intersegmental boundaries with distinct annulations (Fig. 2a). Palps missing from holotype.

Prostomium fusiform, acutely pointed, tapered anteriorly, with posterior raised caruncle extending to setiger 2; eyes not visible; occipital tentacle absent (Fig. 2a, b). Peristomium separate from setiger 1, forming small lateral wings (Fig. 2a).

Setiger 1 with small, subtriangular notopodial lamellae and oval neuropodial lamellae; capillary setae present in both rami (Fig. 2c). Branchiae present from setiger 2, with ruffled, amber pigmented glandular margins (Figs. 2d–g, i, 3a); all branchiae fused basally to notopodial postsetal lamellae, with free, distally pointed tips (Figs. 2d–g, i, 3a). Accessory digitiform branchiae present at posterior bases of notopodia starting on setiger 7 as a single small lobe, thereafter increasing in number up to 7 lobes in setiger 30 (Fig. 2h), then gradually decreasing to 1 lobe through
setiger 84.

Notopodial postsetal lamellae of setiger 2 and succeeding setigers entire, fused with branchiae, lamellae distally free with pointed tips (Figs. 2d–g, i, 3a); lower corners of lamellae in posterior setigers ventrally pointed (Fig. 3a). Notopodial presetal lamellae low, rounded anteriorly (Fig. 2d); thereafter, lamellae becoming more conspicuous, triangular with acute tips (Figs. 2i, 3a). Neuropodial postsetal lamellae lower, rounded in anterior setigers (Fig. 2d, e); thereafter, slightly elongated dorsally (Fig. 2f, g); dorsal portion becoming dorsally elongated in posterior setigers, directed dorsally towards ventral portion of notopodial postsetal lamellae (Fig. 3a); presetal lamellae low, rounded throughout.

Notopodial setae arranged in 2 rows throughout; setae of anterior row in anterior notopodia very broad, striated, with wide sheaths and reticulation across width (Fig. 3b, c); setae of posterior row longer and narrower, with narrow sheaths and light granulations (Fig. 3d, e); separate group of long, narrowly sheathed capillaries present dorsal to anterior row (Fig. 2f). Posterior notopodial setae sheathed capillaries with granulations (Fig. 3f) and thin, sheathed capillaries lacking granulations (Fig. 3g). Anterior neuropodial setae similar to notopodial setae, with broad, reticulated setae in anterior row and thin capillaries in posterior row. Neuropodial hooded hooks present from setiger 22, numbering up to 9 per fascicle, accompanied throughout by broad limbate setae and thin alimbrate capillaries (Fig. 3h); hooks stout, unidentate (Fig. 3i, j). Ventral sabre setae present from setiger 19, numbering 1 or 2 per fascicle; each with sheath, heavily granulated (Fig. 3k).

Pygidium unknown.

Remarks. Scolelepis branchia has affinities to some species of Dispio in having an anteriorly pointed prostomium, accessory branchiae at the posterior bases of the notopodia and broad, reticulated capillaries. However, S. branchia can be distinguished from Dispio in having branchiae present from setiger 2 rather than setiger 1.

Scolelepis branchia is very closely related to S. pettiboneae Maciolek, 1987, described from deep water off Georgia of the east coast of North America. The two species are similar in having the accessory branchiae at the posterior bases of the notopodia and the broad, reticulated capillaries on the anterior noto- and neuropodia. Scolelepis branchia differs from S. pettiboneae in having unidentate hooded hooks, rather than bidentate hooded hooks and the notopodial postsetal lamellae fused with the dorsal lamellae through posterior setigers (at least to the 110th setiger), rather than separated from the dorsal lamellae, with pointed upper and lower corners in the 42nd setiger.

Type. Holotype, NSMT-Pol. H 337.

Distribution. Japan; 5–19 m.
**Scolelepis (Scolelepis) lingulata** sp. nov.

(Figs. 4a–g, 5a–n)


**Description.** Holotype complete individual with 46 setigers, measuring 20 mm in length and 1.8 mm in width at anterior region including parapodia. Body wide anteriorly, tapering posteriorly. Color in alcohol pale yellow. Palps missing from holotype, but one paratype with slender palps lacking palpal sheath.

Prostomium anteriorly pointed, with subterminal protuberanum, posteriorly ending bluntly on setiger 1; occipital tentacle present; 4 eyes arranged in transverse row (Fig. 4a). Peristomium completely separated from setiger 1, forming well-developed lateral wings (Fig. 4a, b).

Setiger 1 with small, conical notopodial lamellae and large, subtriangular lamellae; sheathed capillary setae present in both rami (Fig. 4c). Branchiae present from setiger 2, fused to notopodial postsetal lamellae but distally free (Fig. 4d); lamellae oval with elongated pointed tip, branchiae elongated, tapered, with yellow pigment distally; branchiae in median setigers slender and more elongated (Fig. 4f, g), overlapping ones in mid-dorsal region; those becoming smaller again in posterior setigers (Fig. 5a). Neuropodial postsetal lamellae small and rounded anteriorly (Fig. 4d), then becoming flattened and elongated in subsequent anterior segments (Fig. 4e); slight notch developed by setiger 17 (Fig. 4f); thereafter lamellae divided into low, rounded interramal lobe and small triangular ventral lobe (Fig. 4g); neuropodial interramal lobe becoming conspicuous, lingulate, protruding obliquely in posterior setigers (Fig. 5a).

Anterior noto- and neuropodial setae all capillaries, arranged in 2 rows (Fig. 5b, c); setae of anterior row shorter than those of posterior row; anterior notopodial setae thickened, broadly limbate, setae of anterior row heavily granulated, setae of posterior row lightly granulated (Fig. 5d, e), those setae becoming gradually slender (Fig. 5f) and longer (Fig. 5g). Neuropodial setae on setiger 1 similar in structure to notosetae, setae in anterior row short and granulated (Fig. 5b, h), those setae gradually thickening over successive setigers (Fig. 5c). Neuropodial hooded hooks present from setiger 21, numbering up to 9 per fascicle, accompanied throughout by about 10 limbated and slightly granulated capillaries (Fig. 5i); hooks stout and unidentate (Fig. 5j, k); notopodial hooded hooks lacking.

Pygidium with ventral, entire cushion; anus opening dorsally (Fig. 5l–n).

**Remarks.** *Scolelepis lingulata* is very closely related to *S. knight-jonesi* (DE SILVA, 1961) from Sr: Lanka in that an occipital tentacle is present on the prostomium, the notopodia on setiger 1 have capillary setae, the neuropodial hooded hooks are
Fig. 4. *Scolelepis (Scolelepis) lingulata* sp. nov. — a, Anterior end, dorsal view, ×32; b, same, lateral view, ×32; c, setiger 1, anterior view, ×58; d, setiger 2, anterior view, ×58; e, setiger 10, anterior view, ×58; f, setiger 17, posterior view, ×58; g, setiger 21, anterior view, ×58.
Fig. 5. *Scolelepis* (*Scolelepis*) *lingulata* sp. nov. — a, Setiger 39, posterior view, ×47; b, neuropodial setae from setiger 1, ×350; c, neuropodial setae from setiger 10, ×350; d, notopodial seta in anterior row from setiger 10, ×350; e, notopodial seta in posterior row from same setiger, ×350; f, notopodial setae from setiger 21, ×180; g, notopodial seta from posterior setiger, ×180; h, neuropodial seta in anterior row from setiger 1, ×350; i, hooded hook and companion seta from setiger 21, ×350; j, hooded hook from setiger 21, ×357; k, hooded hook from setiger 39, ×637; l, posterior end, dorsal view, ×22; m, same, lateral view, ×22; n, pygidium and 1 posterior setiger, dorsal view, ×44.
unidentate and the branchiae are partially fused with dorsal lamellae throughout. However, *S. lingulata* can be distinguished from *S. knight-jonesi* in that (1) the neuropodial interramal lamellae on the posterior setigers are conspicuously lingulate and obliquely protruded, rather than being low and elongate and (2) neuropodial hooded hooks are present from setiger 21, rather than from setiger 31–43.


**Distribution.** Japan; 5–75 m.

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**Scolelepis (Scolelepis) lefebvrei** (Gravier, 1905)

(Figs. 6a–i, 7a–o)

*Nerine Lefebvrei* Gravier, 1905, pp. 43–44.


**Material examined.** Off Shimoda, in 45 m (1), III–1977.

**Description.** A large species, measuring 80 mm in length and 2 mm in width for 150 setigers (fide Gravier, 1905: 44); present complete material measures 113 mm in length and 3.3 mm in width at anterior region including parapodia for 201 setigers. Color in alcohol: body yellowish white, but pygidium brownish.

Prostomium sharply pointed anteriorly, protuberating subterminally, with carnuncle pointed posteriorly, extending to posterior margin of setiger 1; 4 small black eyes present in transverse row; occipital tentacle absent (Fig. 6a, b). Peristomium distinct from setiger 1, forming well-developed lateral wings (Fig. 6b).

Setiger 1 well developed, with large, subtriangular notopodial lamellae and small neuropodial lamellae; both rami with capillary setae (Fig. 6c). Branchiae present from setiger 2, with thick, glandular, subtriangular tips (Fig. 6e–h). Notopodial lamellae distally free from branchiae both branchiae and notopodial lamellae nearly equal in length through posterior setigers (Fig. 6e–g, i); notopodial presetal lamellae rounded. Neuropodial lamellae rounded anteriorly (Fig. 6e), slight notch developing around setiger 26–30 (Fig. 7a–c), lamellae becoming distinctly bilobed into small ventral lamellae and larger flattened interramal lamellae in middle setigers (Fig. 6g); interramal lamellae in posterior setigers divided into 3–4 lobes (Fig. 6i).

Anterior noto- and neuropodial setae all sheathed capillaries, arranged in 2 rows, setae of anterior row shorter, more granulated than those of posterior row (Fig. 6m, n); setal fascicle of notopodia with 5–6 long capillaries in superior position near anterior row (Figs. 6e, 7f); last 3 notopodia near end of body lacking setal fascicles (Fig. 7o). Neuropodial setae on setiger 1 similar in structure to notosetae; neurossetae in anterior row short and granulated (Fig. 7g, h), those of subsequent setigers curved and thickened (Fig. 7i). Neuropodial hooded hooks present from setiger 38, up to 5 per fascicle, accompanied throughout by sheathed capillaries (Fig. 7j); hooks stout, unidentate (Fig. 7k, l), hooks in posterior setigers with reduced hoods (Fig. 7l); notopodial hooks lacking.
Fig. 6. *Scolelepis (Scolelepis) lefebvrei* (Gravier). — a, Anterior end, dorsal view, ×20; b, same, lateral view, ×20; c, setiger 1, anterior view, ×52; d, setiger 2, anterior view, ×52; e, setiger 3, anterior view, ×52; f, setiger 12, anterior view, ×42; g, setiger 40, anterior view, ×30; h, tip of branchia from setiger 40, ×77; i, posterior setiger, anterior view, ×30.
Pygidium with brownish, incised ventral cushion; anus opening dorsally (Fig. 7m–o).

Remarks. The present material corresponds well with Gravier’s (1905) original description of this species from the Red Sea.
The species is new to the Japanese fauna.

Distribution. Red Sea; Japan; 45 m.

*Scolelepis* (*Scolelepis*) *sagittaria* sp. nov.

(Figs. 8a–h, 9a–h, 10a–k)

Material examined. Off Shimoda, in 50 m (holotype and 5 paratypes), III–1977.

Description. Holotype largest complete individual with 75 setigers, measuring 21 mm in length and 1.5 mm in width at anterior region including parapodia. Body rectangular in cross section.

Prostomium sagittate, extended anteriorly to long, tapering point, posteriorly ending on setiger 1 with terminal portion raised into occipital tentacle; 4 eyes present at sides of prostomium (Fig. 8a, b). Peristomium completely separated from setiger 1, forming well-developed lateral wings (Fig. 8c).

Setiger 1 well developed, with subtriangular noto- and neuropodial lamellae, neuropodial lamellae larger than neuropodial lamellae; capillary setae present in both rami (Fig. 8d). Neuropodial lamellae almost completely fused to branchiae in anterior setigers (Fig. 8e–h); free tips of branchiae tapered, elongate with pigmented glands (Fig. 8g, h); neuropodial lamellae becoming gradually smaller (Fig. 9a) and almost free in posterior setigers (Fig. 9b). Neuropodial presetal lamellae rounded anteriorly (Fig. 8e–g), with slight notch developing from setiger 29 (from setigers 19–25 in paratypes) (Fig. 8h), lamellae divided into interramal lamellae and ventral lamellae (Fig. 9a, b); posterior neuropodial lamellae elongated ventrally, interramal lamellae low, rounded, with elongated upper tip (Fig. 9b).

Anterior setae all sheathed capillaries; neuropodial setae separated into superior and inferior fascicles (Figs. 8f, g, 9a, b); setae of superior fascicle numbering 3–5, longer with slender sheaths, non-granulated; capillaries of inferior fascicle arranged in 2 rows, setae of anterior row short, broadly limbate and heavily granulated (Fig. 9c, d), setae of posterior row long, lightly granulated (Fig. 9e, f), those setae conspicuous in about setigers 10–30; setae in posterior setigers narrower, narrowly sheathed, non-granulated (Fig. 9g, h). Neuropodial setae similar in arrangement and structure to neuropodial setae (Fig. 10a–c), setae of anterior row broadly limbate and heavily granulated (Fig. 10d). Neuropodial hooded hooks present from setiger 32 (from setiger 31–33 in paratypes), numbering up to 10 per fascicle, accompanied by slender capillaries with clear sheaths (Fig. 10e); a single superior hook tridentate, with 2 small apical teeth arranged in parallel, surmounting large falcate spine (Fig. 10f), remaining hooks all bidentate (Fig. 10g–i), primary hood long, clear; neuropodial hooded hooks present from setiger 52 (from setiger 52–58 in paratypes), numbering 4 per fascicle, all hooks tridentate with 2 small apical teeth (Fig. 10j), bidentate in lateral view.

Pygidium forming entire ventral cushion, anus dorsal, surrounded by crenulate
Spionidae (Polychaeta) from Japan VIII.

Fig. 9. *Scolelepis (Scolelepis) sagittaria* sp. nov. — a, Setiger 40, anterior view, ×80; b, posterior setiger, anterior view, ×80; c, notopodial seta in anterior row from setiger 4, ×353; d, notopodial seta in anterior row from setiger 14, ×353; e, notopodial seta in posterior row from setiger 4, ×353; f, notopodial seta in posterior row from setiger 14, ×353; g, notopodial seta in anterior row from setiger 40, ×240; h, notopodial seta in posterior row from setiger 40, ×240.

margin (Fig. 10k).

Remarks. *Scolelepis sagittaria* is closely related to *S. balihaiensis* Hartmann-Schröder, 1979 from the west coast of Australia. The two species are similar in the shape and development of the notopodial lamellae and branchiae, which are almost completely fused in the anterior setigers and almost free from each other in the posterior setigers. The two species are also similar in the structure of the notopodial

Fig. 8. *Scolelepis (Scolelepis) sagittaria* sp. nov. — a, Anterior end, dorsal view, ×40; b, same, dorso-lateral view, ×44; c, same, lateral view, ×40; d, setiger 1, anterior view, ×80; e, setiger 2, anterior view, ×80; f, setiger 4, anterior view, ×80; g, setiger 14, anterior view, ×80; h, setiger 29, posterior view, ×80.
hooks, which are tridentate and the neuropodial hooks, which are mostly bidentate. *Scolelepis sagittaria* differs from *S. balihaiensis* in having rather than lacking an occipital tentacle on the prostomium and notopodial setae on setiger 1.

**Type-series.** Holotype, NSMT-Pol. H 340; 5 paratypes, NSMT-Pol. P 341.

**Distribution.** Japan; 50 m.
Spionidae (Polychaeta) from Japan VIII.

**Scolelepis (Scolelepis) kudenovi** Hartmann-Schröder, 1981
(Figs. 11a–g, 12a–p)


**Material examined.** Off Shimoda, in 45 m (16), III–1977.

**Description.** Largest complete individual with 81 setigers, measuring 45 mm in length and 1.5 mm in width including parapodia.

Prostomium conical, extended anteriorly to long, tapering point, posteriorly pointed, ending at posterior margin of setiger 1; occipital tentacle absent; 4 eyes present, but obscure in dorsal view. Palps extending to about setiger 20, lacking basal sheaths. Peristomium separated from setiger 1, forming lateral wings (Fig. 11a, b).

Setiger 1 with lanceolate noto- and neuropodial lamellae, notopodial lamellae smaller than neuropodial lamellae; capillary setae present in both rami (Fig. 11c). Branchiae present from setiger 2, fused to notopodial lamellae for approximately half the length in anterior setigers (Fig. 11d–f) and for approximately one-third the length in posterior setigers (Fig. 12a, b); posterior notopodial lamellae flaglike, with upper and lower corners pointed (Fig. 12c, d). Notopodial presetal lamellae rounded throughout (Figs. 11d, f, g, 12a, d). Neuropodial postsetal lamellae mammiform anteriorly (Fig. 11d, e), becoming low, rounded (Fig. 11f), slight notch beginning on setiger 24–27, divided into interramal lamellae and ventral cirri (Fig. 11g); interramal lamellae slightly elongated dorsally, upper edge of lamellae overlapping pointed ventral portion of notopodial lamellae (Fig. 12a–d). Neuropodial postsetal lamellae increasing in transverse length (Fig. 12b–d).

Anterior setae all capillaries, limbate, moderately granulated, arranged in 2 rows (Fig. 12e–h). Neuropodial hooded hooks present from setiger 26–30, numbering up to 17 per fascicle, accompanied by 3–4 slender capillaries (Fig. 12k); notopodial hooded hooks present from setiger 55–62, numbering 2–3 per fascicle; hooks all bidentate, posterior noto- and neuropodial hooks bearing very long primary hood (Fig. 12l, m).

Pygidium with ventral, entire cushion; anus dorsal (Fig. 12n–p).

**Remarks.** The specimens from Japanese waters agree well with those from Australia (Hartmann-Schröder, 1981) in the structures of the parapodia and hooded hooks. However, the Japanese specimens have neuropodial hooks from setiger 26–30, rather than setiger 44 and notopodial hooks from setiger 55–62, rather than setiger 98. The specimens examined are similar to *Scolelepis squamata* (Müller, 1806) from Denmark (as described in Maciolek, 1987) in the prostomial shape and the parapodial structures. However, the present specimens differ from *S. squamata* in that the noto- and neuropodial setigers have only bidentate hooded hooks, rather than uni-, bi- and tridentate hooded hooks.
Fig. 11. *Scolelepis (Scolelepis) kudenovi* Hartmann-Schröder. — a, Anterior end, dorsal view, ×37; b, same, lateral view, ×37; c, setiger 1, anterior view, ×88; d, setiger 2, anterior view, ×58; e, setiger 4, posterior view, ×58; f, setiger 10, anterior view, ×58; g, setiger 25, anterior view, ×58.

The species is newly recorded from Japan.

*Distribution.* Australia; Japan; 45 m.
Fig. 12. Scolelepis (Scolelepis) kudanovii Hartmann-Schröder. — a, setiger 30, anterior view, × 58; b, setiger 40, posterior view, × 58; c, setiger 60, posterior view, × 58; d, far posterior setiger, anterior view, × 58; e, f, neuropodial setae in anterior row (e) and posterior row (f) from setiger 10, × 240; g, h, neuropodial setae in anterior row (g) and posterior row (h) from setiger 10, × 240; i, neuropodial hooded hook from setiger 40, lateral view, × 638; j, distal end of same hook, front-lateral view, × 900; k, companion seta from setiger 40, × 353; l, neuropodial hooded hook from far posterior setiger, frontal view, × 638; m, neuropodial hooded hook from same setiger, lateral view, × 638; n–p, pygidium and 3 setigers, dorsal (n), ventral (o) and lateral (p) views, × 44.
Scolelepis (Scolelepis) variegata sp. nov.

(Figs. 13a–h, 14a–k)

Material examined. Mukaishima, Hiroshima Pref., intertidal zone (holotype

Fig. 13. Scolelepis (Scolelepis) variegata sp. nov. — a, Anterior end, in dorsal view, ×20; b, same, lateral view, ×20; c, d, basal sheath of palps, ×23; e, setiger 1, anterior view, ×23; f, setiger 2, anterior view, ×23; g, setiger 16, anterior view, ×23; h, setiger 29, anterior view, ×23.
Fig. 14. *Scolelepis* (*Scolelepis*) *variegata* sp. nov. — a, Setiger 30, anterior view, ×23; b, setiger 40, anterior view, ×23; c, posterior setiger, anterior view, ×23; d, far posterior setiger, posterior view, ×23; e, notopodial capillary seta from setiger 16, ×130; f, neuropodial capillary seta from same setiger, ×130; g, h, neuropodial hooded hooks, lateral (g) and front-lateral (h) views, ×450; i, inferior capillary seta of neuropodium from setiger 40, ×130; j, pygidium and 2 setigers, dorsal view, ×42; k, pygidium, lateral view, (n) showing dorsal side, ×42.


*Description.* Holotype largest complete individual with 74 setigers, measuring 31 mm in length and 3.6 mm in width at anterior region including parapodia.

Prostomium conical, distally pointed, posterior with rounded swelling just behind 2 pairs of small eyes; nuchal papilla present on setiger 2; 2 subtriangular, brown pigmented areas present lateral to eyes (Fig. 13a, b). Peristomium separated from setiger 1, with lateral wings (Fig. 13a). Palps extending back to setiger 30, with smooth basal sheath on anterior side of base (Fig. 13c, d).

Setiger 1 with small, oval, noto- and neuropodial lamellae; capillary setae present on neuropodia, lacking on notopodia (Fig. 13e). Notopodial lamellae completely
fused with branchiae from setiger 2 to setiger 29 (to setiger 25 in paratypes) (Fig. 13f–h), thereafter lamellae separated from branchiae, with flaglike distal lamella (Fig. 14a); notopodia gradually reduced to subtriangular lamellae (Fig. 14c, d), branchiae becoming elongate, straplike, with small flaglike distal lamella (Fig. 14b–d). Notopodial precetal lamellae rounded in anterior setigers (Fig. 13f, g), becoming reduced in posterior setigers (Fig. 14b, c). Neuropodial postsetal lamellae rounded in anterior setigers (Fig. 13e–h), becoming elliptical in posterior setigers (Fig. 14a–d); lateral ciliated organs present at interramal channel between notopodial and neuropodial lamellae (Fig. 13h).

Anterior setae all limbate, moderately granulated capillaries, arranged in 2 rows (Fig. 14e, f). Neuropodial hooded hooks present from setiger 27 (setiger 24–25 in paratypes); hooks bidentate with distinct secondary tooth, numbering up to 16 per fascicle (Fig. 14g, h), with 1–4 thin limbate capillaries in inferior position of fascicle (Fig. 14i); notopodial hooks lacking.

Pygidium with small ventral lobe and 2 lateral lamellae, anus with wide opening (Fig. 14j, k).

Remarks. *Scolelepis variegata* is closely related to *S. victoriensis* Blake and Kudenov, 1978, from southeastern Australia, in having the prostomial swelling and separate nuchal papilla. However, *S. variegata* is distinguished by the presence of a pair of subtriangular, brown pigmented areas on the prostomium and by the nature of the hooded hook, which has a stout secondary tooth. *Scolelepis variegata* is also similar to *S. atitutakii* Gibbs, 1972, from the Cook Islands and *S. vexillatus* Hutchings and Rainer, 1979, from New South Wales in the nature of the parapodia and the hooded hooks, but can be distinguished from them by the prostomial features.


Distribution. Japan; intertidal zone.

*Scolelepis* (*Scolelepis*) *planata* sp. nov.

(Figs. 15a–h, 16a–i)

Material examined. Off Zushi, Sagami Bay, 35°16.3'N, 139°33.2'E, in 12 m (holotype and 1 paratype), X–1985.

Description. Holotype incomplete, 9 mm in length and 2 mm in width including parapodia at anterior part for 34 setigers; paratype complete, 14 mm in length and 1.5 mm in width for 52 setigers. Color in alcohol opaque white.

Prostomium anteriorly truncated, inflated with medial, conical protuberance; subapically depressed, elevated posteriorly into flattened occipital tentacle with entire margin and distal point (Fig. 15a, b); eyes obscure in holotype, but 4 eyes clear in paratype; palps missing. Peristomium moderately developed, with short, lateral wings erected in posterior half (Fig. 15a–c).
Fig. 15. *Scolelepis* (*Scolelepis*) *planata* sp. nov. — a, Anterior end, dorsal view, ×32; b, same, front-lateral view, ×32; c, same, frontal view, ×32; d, setiger 1, anterior view, ×58; e, setiger 2, anterior view, ×58; f, setiger 3, anterior view, ×58; g, setiger 11, anterior view, ×58; h, setiger 19, anterior view, ×58.
Setiger 1 reduced, with small conical notopodial lamellae and rounded neuropodial lamellae; notopodial setae lacking (Fig. 15d). Notopodial lamellae distally free from branchiae from setiger 2 (Fig. 15e) through end of body; anterior lamellae greatly folded, lower portion of lamellae rounded, directed ventrally toward dorsal portion of neuropodial postsetal lamellae (Fig. 15f, g); thereafter lamellae gradually decreasing in length posteriorly (Fig. 16a–c). Branchiae robust, wide, increasing in size over anterior region, decreasing in length posteriorly. Notopodial presetal lamellae low, rounded. Neuropodial postsetal lamellae rounded anteriorly (Fig. 15g), thereafter lamellae elongated, dorsal portion overlapping notopodial lamellae (Fig. 15h); slight notch developing on setiger 21 (Fig. 16a), lamellae becoming divided into large, flattened interramal lamella and small ventral lobe (Fig. 16b); interramal lamellae gradually becoming smaller, square in far posterior setigers (Fig. 16c).
Anterior setae all narrow, thinly sheathed capillaries, arranged in 2 rows; neuropodial setae on setiger 1 very slender with ciliary distal end (Fig. 16d); capillaries of subsequent setigers better developed, setae of anterior row shorter and more heavily granulated than setae of posterior row (Fig. 16e, f). Neuropodial hooded hooks from setiger 19, numbering up to 8 per fascicle; single notopodial hooded hook from setiger 45 of paratype. Hooks with 3–4 pairs of rudimentary apical teeth surmounting large, sharp main fang; shaft with long primary hood (Fig. 16g, h).

Pygidium of paratype slightly bilobed disc ventral to anus (Fig. 16i).

Remarks. Scolelepis planata is closely related to S. occipitalis Blake and Kudenov, 1978, from New South Wales in having a characteristic flat occipital tentacle. However, Scolelepis planata is distinguished from S. occipitalis in that the occipital tentacle is entire with pointed tip, rather than irregularly branched, and hooded hooks have 3–4 pairs of multidentate apical teeth, rather than 2 pairs of apical teeth.


Distribution. Japan; 12 m.

Subgenus Parascolelepis Maciolek, 1987

Scolelepis (Parascolelepis) yamaguchii (Imajima, 1959)

(Fig. 17a–n)

Nerinides yamaguchii Imajima, 1959, pp. 155–165, 3 pls.


Description. Largest specimen 50 mm in length and 4.5 mm in width for 102 setigers. Prostomium anteriorly pointed, ending bluntly on setiger 1 with erect occipital tentacle at posterior margin; 4 eyes present (Fig. 17a). Palps extending posteriorly as far as setiger 10, with basal sheath bearing 8–14 triangular papillae (Fig. 17b, c). Peristomium completely distinct from setiger 1, forming small lateral wings (Fig. 17a).

Notopodial postsetal lamellae small, digitiform on setiger 1 (Fig. 17d), completely fused with branchiae from setiger 2 through posterior setigers (Fig. 17e–j); lamellae small, rounded in far posterior setigers (Fig. 17j). Neuropodial postsetal lamellae rounded anteriorly (Fig. 17d, e), thereafter elongated dorsally, becoming less rounded (Fig. 17f, g) and eventually forming square interramal lamellae (Fig. 17h, i); ventral lamellae lacking.

Anterior noto- and neuropodia with sheathed capillaries (Fig. 17k) arranged in 2 rows; setae present in both noto- and neuropodia on setiger 1. Neuropodial hooded hooks present from setiger 20–21; hooks with 2 pairs of well-developed apical teeth surmounting sharp main fang, shaft long, slightly curved, with long primary hood
hooks numbering 20 per fascicle in setiger 30, 30 per fascicle in setiger 70, thereafter gradually decreasing in number posteriorly. Notopodial hooded hooks lacking.

Pygidium with distinctly bilobed disc ventral to anus (Fig. 17n).

Remarks. *Scolelepis yamaguchii* is closely related to *S. tridentata* Southern, 1914, from the North Atlantic. Both species have an occipital tentacle, palps with papillated basal sheath, notopodial setae on setiger 1, multideterminate hooded hooks and a bilobed pygidium. However, *Scolelepis yamaguchii* can be distinguished from *S. tridentata* in that the body is larger (50 mm long for 102 setigers, rather than 16–20 mm long for 61–70 setigers), and the notopodial lamellae are completely fused with the branchiae through the posterior setigers of the body rather than distally free in the posterior setigers.

Distribution. Hokkaido, Japan; intertidal zone.

*Scolelepis* (*Parascolelepis*) *geniculata* sp. nov.

(Figs. 18a–j, 19a–m)


Description. Holotype complete individual with 49 setigers, measuring 11 mm in length and about 1 mm in width at anterior region including parapodia. Body slender, subcylindrical, filled with oocytes.

Prostomium anteriorly pointed, with cephalic crest on posterior part extending to setiger 1; 4 eyes and erect occipital tentacle present (Fig. 18a, b). Peristomium partly fused with setiger 1, lacking lateral wings (Fig. 18b). Palps extending posteriorly to setiger 12, with basal sheath bearing 12 triangular papillae laterally (Fig. 18c, d).

Setiger 1 with small subtriangular nato- and neupododial lamellae; capillary setae present in both rami (Fig. 18e). Notopodial postsetal lamellae completely fused with branchiae on setigers 2–14 (Fig. 18f–j), distally free from branchiae on setiger 15 (Fig. 19a); branchiae becoming elongate, digitiform with expanded, flaglike tip bearing yellow pigment in median setigers (Fig. 19b, c); thereafter branchia becoming shorter (Fig. 19d), absent in posterior setigers (Fig. 19e). Notopodial presetal lamellae digitiform, conspicuous on setigers 2–14 (Fig. 18f–j). Neuropodial postsetal lamellae elongate, oval through setiger 14 (Fig. 18j); thereafter lamellae becoming flattened.
Fig. 18. *Scolelepis (Parascolelepis) geniculata* sp. nov. — a, Anterior end, dorsal view, ×40; b, same, lateral view, ×40; c, d, palpal sheaths, ×58; e, setiger 1, anterior view, ×80; f, setiger 2, anterior view, ×80; g, setiger 3, anterior view, ×80; h, setiger 10, anterior view, ×80; i, same, posterior view, ×80; j, setiger 14, anterior view, ×80.
directed dorsally, positioned dorsal to setae in posterior setigers (Fig. 19a–e). Ciliated sensory organs present between rami (Fig. 18h).

Anterior setae all capillaries through setiger 14; first 2 setigers with very long, slender notopodial setae (Fig. 18e, f); superior notopodial capillaries (Fig. 19f) longer than inferior ones (Fig. 19g); subsequent notopodial setae becoming shorter,
arranged in 2 rows (Fig. 19h). Neuropodial capillary setae thick, granulated, with narrow sheaths (Fig. 19i). Neuropodial hooded hooks present from setiger 15, numbering 8 per fascicle; shaft of hook distinctly geniculate, with 3 pairs of apical teeth surmounting sharp main fang (Fig. 19j, k); posterior neuropodia with 13–17 hooks per fascicle; notopodial hooks lacking.

Pygidium with ventral disc widely separated into 2 lobes, with 1 achaetous preanal segment. Anus dorsal, surrounded by crenulate margin (Fig. 19l, m).

Remarks. *Scolelepis geniculata* is closely related to *S. bousfieldi* Pettibone, 1963 from the Gulf of St. Lawrence in having characteristic neuropodial hooded hooks with geniculated shafts. However, *Scolelepis geniculata* is distinguished in that the anterior notopodial preset lamellae are conspicuously elongated and digitiform, rather than moderately triangular. Also the pygidial ventral disc of *S. geniculata* is widely separated into 2 lobes, rather than being an entire oval disc.

Type. Holotype, NSMT-Pol. H 346.

Distribution. Japan; 5–21 m.

*Scolelepis (Parascolelepis) texana* Foster, 1971

(Figs. 20a–g, 21a–h)

*Scolelepis (Scolelepis) texana* Foster, 1971, pp. 63–64, figs. 132–142.
*Scolelepis (Parascolelepis) texana*: Maciolek, 1987, pp. 34–36, fig. 10.


Description. All material posteriorly incomplete; largest fragment with 42 setigers, measuring 13 mm in length and 2.2 mm in width including parapodia. Body slender, subcylindrical.
Fig. 20. *Scolelepis* (*Parascolelepis*) texana Foster. — a, Anterior end, dorsal view, ×22; b, same, dorsolateral view, ×22; c, papillated palpal sheath, ×54; d, setiger 1, anterior view, ×54; e, setiger 2, anterior view, ×54; f, setiger 3, anterior view, ×54; g, setiger 16, anterior view, ×54.

Prostomium conical, pointed anteriorly, ending bluntly on setiger 1 with erect occipital tentacle present near posterior margin; 4 eyes present (Fig. 20a, b). Peristomium partly separated from setiger 1, forming lateral wings (Fig. 20a). Palps with papillated basal sheath; papillae triangular, numbering about 20 (Fig. 20c). Notopodial lamellae small, conical on setiger 1 (Fig. 20d); lamellae completely
Fig. 21. *Scolelepis (Parascolelepis) texana* Foster. — a, Setiger 17, anterior view, ×54; b, setiger 18, anterior view, ×54; c, setiger 21, anterior view, ×54; d, setiger 35, anterior view, ×54; e, notopodial setae in anterior and posterior rows from setiger 16, ×180; f, neuropodial setae in anterior and posterior rows from same setiger, ×180; g, h, neuropodial hooded hooks, lateral (g) and frontal (h) views, ×900.

fused with branchiae from setiger 2 through setiger 16 (Fig. 20e–g); thereafter lamellae partially separated from branchiae on setiger 17–18 (Fig. 21a); lamellae completely separated from branchiae on setiger 18–19 (Fig. 20i). Notopodial presetal lamellae low, rounded on setiger 2 (Fig. 20e); lamellae of subsequent setigers conspicuously elongated, triangular, maximally developed on setiger 20, protruding distally nearly
to outer margin of notopodial lamellae (Figs. 20g, 21a), decreasing in size thereafter. Neuropodial postsetai lamellae rounded in anterior setigers (Fig. 20d–f), lamellae on setiger 1 conspicuously larger than notopodial lamellae (Fig. 20d); thereafter lamellae with dorsally elongated upper portion, overlapping notopodial lamellae (Fig. 20b, c); lamellae divided into interramal lamellae and small ventral papilla from setiger 27 (Fig. 21d). Branchiae very long and tapered anteriorly, becoming very short around setiger 30. Lateral ciliated organs present in interramal channel between notopodial and neuropodial lamellae (Figs. 20e–g, 21a–d).

Anterior setae all capillaries; notopodial setae lacking in setiger 1; setae arranged in 2 rows from setiger 1, with setae of anterior row limbate, moderately granulated, setae of posterior row lacking granulations (Fig. 21e, f). Neuropodial hooded hooks present from setiger 18–20, numbering up to 14 per fascicle; hooks with 3 pairs of apical teeth surmounting large, sharp main fang (Fig. 21g, h). Notopodial hooks lacking. Pygidium not seen.

Remarks. The specimens from the Japanese waters correspond well with Foster’s (1971) original description of this species from Texas.

The species is new to the Japanese waters.

Distribution. Texas, North Carolina, Massachusetts, New Hampshire; Japan; low water to 85 m.

Literature Cited


Imajima, M., 1959. A description of a new species of the Spionidae (Polychaeta), Nerinides yama-


