New arctic species of *Scolelepis* (Polychaeta, Spionidae)

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ABSTRACT

Three new species of *Scolelepis* were present in the Russian collections from the Arctic Ocean and the border areas *S. matsugae*, *S. burkovskii* and *S. korsuni*. All these are from the Barents Sea. *S. korsuni* is known also from the nothern part of the North Sea, and *S. matsugae* from the Kara Sea and Franz-Josef Land. There are no another species of *Scolelepis* in the Russian arctic zoological collections. The diagnostic characters for *S. korsuni* are: presence of superior flag-like process in middle dorsal lamellae, absence of setae in first notopodiae, shape of hooks and their number; for *S. matsugae*: shape of prostomium, shape of hooks, setiger of hooks starting and pattern of branchiae decreasing. *S. burkovskii* separated by complex of characters. Five species with *S. squamatus* (O.F.Müller, 1806) and *S. foliosus* (Audouin & Milne Edwards, 1833) are now known from the Arctic Ocean and the border areas.

RÉSUMÉ

Nouvelles espèces arctiques du genre *Scolelepis* (Polychètes, Spionidae)

Trois nouvelles espèces de *Scolelepis* ont été trouvées dans les collections russes de l'océan Arctique et des mers polaires : *S. matsugae*, *S. burkovskii* et *S. korsuni*. Ces trois espèces proviennent de la mer de Barents. *S. korsuni* est aussi présente dans la partie nord de la mer du Nord, et *S. matsugae* dans la mer de Kara et près de la Terre François-Joseph. Les caractères distinctifs de *S. korsuni* sont les suivants : la présence d'expansion en forme de drapeau au milieu de la lamelle dorsale, l'absence de soies dans les premiers notopodes, la forme et le nombre des crochets ; ceux de *S. matsugae* sont : la forme du prostomium et des crochets, le niveau d'apparition du premier sitigère avec des crochets et la forme de la branchie. *S. burkovskii* a été séparée des autres espèces par plusieurs caractères. Cinq espèces, y compris *S. squamatus* (O.F. Müller, 1806) et *S. foliosus* (Audouin & Milne Edwards, 1833), sont maintenant connues dans l'océan Arctique.

INTRODUCTION

Only two species of *Scolelepis* de Blainville, 1828, *S. squamatus* (O.F. Müller, 1806) and *S. foliosus* (Audouin & Milne Edwards, 1833), are known from the Arctic Ocean and the border areas. The former has been recorded off Iceland (WESENBERG-LUND, 1951) and from the Norwegian Sea (HARTMANN-SCHRÖDER, 1971);

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tentacle absent. Palps without basal sheath (present in only the holotype) reaching posteriorly to setiger 6-7. Peristomium without lateral wings.

Branchiae flattened, partly fused basally with notopodial lamellae. Branchiae of setiger 2 approximately 1.5 times longer than notopodial lamellae. On the following setigers the ratio increases to 2 or 3 times (Figs 1 k-l). Branchiae continuing throughout body, but becoming progressively smaller in posterior third of body with the upper margins becoming of equal length with notopodial lamellae in the last setigers.

Notopodial lamellae of several anterior setigers slightly elongated becoming more or less semicircular in the following setigers. Neuropodial lamellae of setiger 1 small and low lamellae becoming higher and semicircular in the following setigers; they are slightly asymmetrical anteriorly with a wide dorsal half (Fig. 1-j). Notch on neuropodial lamellae absent.

Setiger 1 with notosetae (Fig. 1-j). An inferior fascicle of capillary setae present in the neuropodium in all setigers (sabre setae absent). Notopodial fascicle becomes narrow posteriorly consisting of a small number of capillaries (Fig. 1-m). Neuropodial hooks from setiger 17-19, numbering 6-8 per fascicle ; hooks tridentate with pair of widely arranged apical teeth surmounting main tooth (Figs 1 o-p). Notopodial hooks absent.

Pygidium with the scalloped membrane surrounding terminal anus.

PIGMENTATION. — Medial longitudinal narrow dark strip present from the anterior margin of prostomium to behind the posterior pair of eyes. In addition, several small spots may be present behind eyes forming 2 dark fields connected with a longitudinal strip (Fig. 1-i).

REMARKS. — This species may be confused with *Spio theeli* (SÖDERSTRÖM, 1920) in habiting in the same area. MACIOLEK (1987) placed *Microspio theeli* into *Scolelepis* but this species does belong to *Spio*-genus group. The new species can be separated by the shape of the hooded hook and the absence of sabre setae in inferior fascicle of neuropodium. I attribute this species to *Scolelepis* because of the shape of pygidium and prostomium, the absence of segmented nuchal organ and the absence of sabre setae. This species differs from the other species of genus *Scolelepis* by starting of hooded hooks, shape of hooks, prostomium, parapodial lobes and composition of setae in neuropodia.

ETYMOLOGY. — The species is named in honour of Professor Igor V. BURKOVSKI who was my principal advisor of my Ph. D. Thesis.

Scolelepis matsugae sp.nov.

MATERIAL EXAMINED. — Barents Sea. Drozdovka Inlet. Exp. of Murmansk Marine Biological Instution, coll. A.V.SIKORSKI: stn P1, 68°18'20"N, 38°25'E, grab, 7.5 m, sandy silt with detritus, 17.VIII.1984: holotype (ZMUM Pl 818). Franz Josef Land. Hayes Isl. Exp. ZIN, coll. V.G.AVERINTSEV & A.F.PUSHKIN: stns 22, 40, 43, 44, 54, 73, 83; 80°35'N, 57°50'E, 3-7 m, silt and in *Alaria esculenta* on stones, X-XII.1981: 10 paratypes (ZMUM Pl 819 and Pl 820; ZIN 2/47388-8/47394; one specimen in ZMUC). Kara Sea. R/V "Zarja", coll. Russian Polar Exp.: stn 12d, 74°28'N, 83°33'E, 52 m, thin clay, 19.VIII.1900: one paratype (ZIN 1/47387).

DESCRIPTION. — Holotype complete, 1.7 mm wide and 9.5 mm long for 48 setigers; maximal number of setigers 50; largest specimen incomplete, 2.8 mm wide. Figs 2a-k.

Prostomium with three semicircular anterior projections (Fig. 2-a); middle projection, especially in juveniles, less prominent than the lateral ones (Fig. 2-c) ; occipital crest high, well pronounced, posteriorly ending abruptly; caruncle ending at base of setiger 1; two pairs of eyes present, with anterior pair larger, crescent-shaped and further apart spaced than posterior pair. Longitudinal groove on prostomium well developed in adults, and extend from the base of occipital crest to the anterior margin around middle projection. Peristomium large in comparison to prostomium, high, laterally inflated. Pharynx often more or less eversed, resulting in anterior margin of prostomium being abruptly turned dorsally. Peristomium distinct from setiger 1, lateral wings lacking; palps thick, long, without basal sheath extending posteriorly to setiger 14.

Setiger 1 without notosetae but with notopodial lamellae. Branchiae flattened, fused entirely to wide Setiger 1 without notosetae but with notopodial lamellae. Branchiae flattened, fused entirely to wide notopodial lamellae. Branchiae of setiger 2 are well developed, long and only 1.5 times shorter than longest one on setiger 14 or 15; fused branchiae and notopodial lamellae abruptly diminished on setiger 22-29, becoming low, semicircular and not changing in shape and size posteriorly.

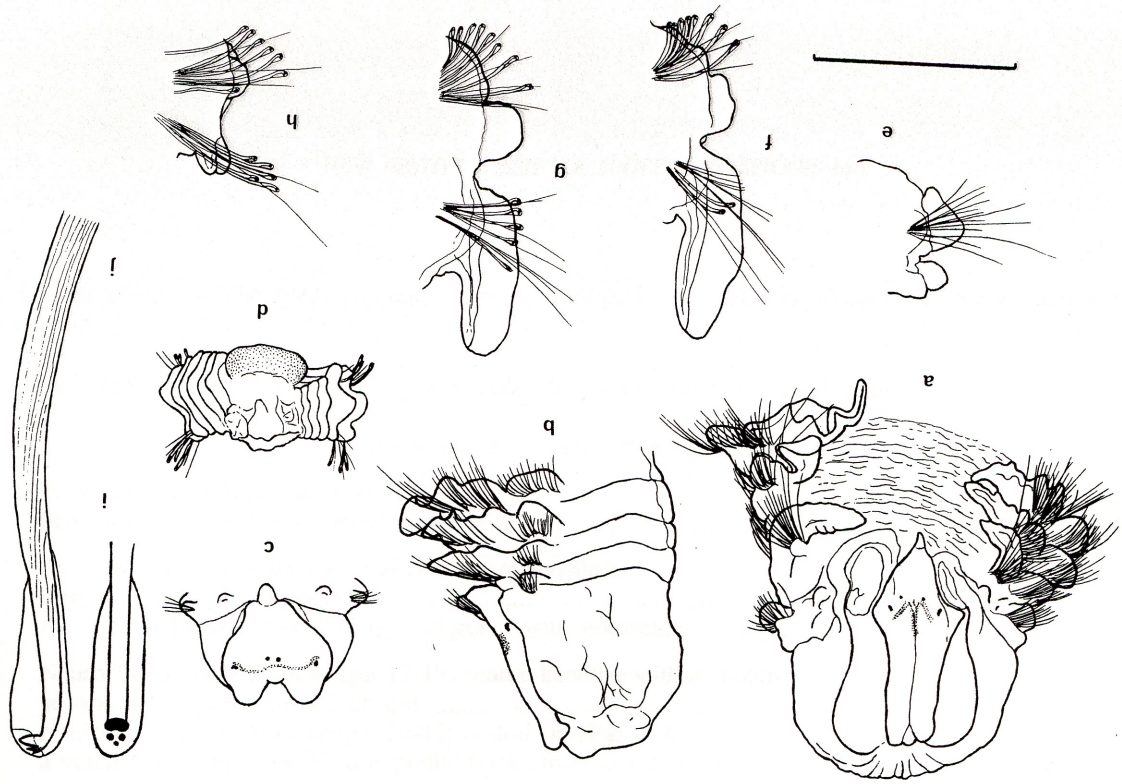

FIG. 2. — *Scolelepis matsugae* sp. nov.: a, anterior end through first four setigers, in dorsal view (palps missing). b, same anterior end, in lateral view. c, anterior end of juvenille specimen, in dorsal view. d, pygidium. e, first parapodium. f, parapodium 23. g, parapodium 25. h, parapodium 36. i, distal end of a hooded hook (in frontal view scheme). - j, a hooded hook from parapodium 25, in lateral view. Scale: a and b, 1 mm; c, 0.3 mm; d, 0.8 mm; e-h, 0.5 mm; j, 0.035 mm.

Neuropodial postsetal lamellae of anterior setigers irregularly rounded, with notch starting from setiger 16-18; ventral parts of neuropodial postsetal lamellae on following segments reduced, resembling narrow membrane and absent on posterior setigers. Almost all neuropodial fascicles of anterior half of body shorter than the upper part of neuropodial postsetal lamellae. Superior notopodial capillares of anterior setigers longest. Sabre setae or inferior fascicle of neuropodium absent. Neuropodial hooks present from setiger 11-22, numbering up to 9 per fascicle. Only young specimens (≤ 0.5 mm width) have hooks from setiger 11-13. Shedding of hooks connected with age confirmed by presence of one hook in neuropodium 14 of holotype; the next neuropodium with hooks in the holotype was in setiger 17. Notopodial hooded hooks begin at setigers 13-26, numbering up to 5 per fascicle. Hooks are tridentate in side view, but in frontal view main tooth clearly surmounted by pair of apical teeth and a single, unpaired (Figs 2 i-j).

Anus terminal, sometimes slightly displaced to dorsum (Fig. 2h). Pygidium with ventral transverse cushion.

PIGMENTATION. — A slight dark stripe present along posterior part of longitudinal groove on prostomium with two dispersing stripes in front of eyes (Fig. 2-a). One juvenile specimen with transverse dark stripes behind anterior pair of eyes (Fig. 2-c). Proximal part of eversed pharynx usually with dark ring. One specimen with pigment on tip of notopodial postsetal lamellae on setiger 3. Anal cushion pigmented. Palps with diffused pigment.

REMARKS. — This species resembles *Scolelepis oligobranchus* (CHLEBOVITSCH, 1959). However, *S. matsugae* differs from *S. oligobranchus* in its smaller size, fused branchiae and notopodial postsetal lamellae reduced more anteriorly, absence of an inferior fascicle of neuropodium, shape of pygidium and shape of hooks. Hooks of *S. oligobranchus* are bifid in side view but their apical tooth paired; it had not been mentioned in original description but it is clearly visible in the holotype.

ETYMOLOGY. — The species is named for my mother Nina Pavlovna SIKORSKA. Her maiden name was MATSUGA.

There are now five valid species of genus *Scolelepis* known from the Arctic Ocean.

Key to species of *Scolelepis* from the Arctic Ocean

1	Prostomium pointed anteriorly	**2**
	Prostomium rounded or trifid anteriorly	**4**
2	Anterior branchiae completely fused to dorsal lamellae; setiger 1 without notosetae	*S. korsuni*
	Anterior branchiae free distally; setiger 1 with notosetae	**3**
3	Neuropodial hooks from setiger 17-19; ventral lamellae without notch; notopodial hooded hooks absent	*S. burkovskii*
	Neuropodial hooks from setiger 26-42; ventral lamellae with a notch after setiger 18-20; notopodial hooks from setiger 60-75	*S. squamatus*
4	Neuropodial hooks from setiger 11-22; branchiae become very short abruptly on setiger 22-29	*S. matsugae*
	Neuropodial hooks from setiger 50-67; branchiae diminish gradually becoming very short near end of body	*S. foliosus*

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