

A New Species of the Genus *Spinther* (Polychaeta, Spintheridae) from Japan

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Abstract A new species, *Spinther ericinus* from off Kushiro, Hokkaido, northern Japan, is described. The family Spintheridae is known for nine species. *Spinther ericinus* is characterized by: (1) one kind of bifid notosetae are arranged in wavy rows; (2) the smooth ventral surface has segmental ridges; and (3) neuropodia have a parapodial extension.

Introduction

The family Spintheridae is known for its only genus, *Spinther* JOHNSTON, 1845. *Spinther oniscooides* JOHNSTON, 1845, the type species, was reported from Belfast Bay, Ireland, and thereafter 12 species have been described by various authors; *S. arcticus* (SARS, 1851) from the Arctic Ocean, *S. citrinus* (STIMPSON, 1854) from the eastern coast of Canada, *S. miniaceus* GRUBE, 1860 from Trieste, the Adriatic Sea, *S. major* LEVINSEN, 1883 from the Bering Sea, *S. australiensis* AUGENER, 1913 from southwestern Australia, *S. vegae* AUGENER, 1928 from the Bering Sea, *S. alaskensis* HARTMAN, 1948 from the Alaska Peninsula, *S. wireni* HARTMAN, 1948 from the Bering Sea, *S. hystrix* USCHAKOV, 1950 from the Okhotsk Sea and the Sea of Japan, *S. japonicus* IMAJIMA *et* HARTMAN, 1964 from the coast of Japan, and *S. usarpia* HARTMAN, 1967 from the Antarctic Peninsula.

GRAFF (1888) revised three species, *S. oniscooides* JOHNSTON, *S. miniaceus* GRUBE and *S. arcticus*, *sensu* WIRÉN, 1883. RIDDELL (1909), referred *S. oniscooides*, *sensu* GRAFF, 1888 to *S. citrinus* (STIMPSON) on the basis of a study of topotypes of *S. oniscooides*. HARTMAN (1948) synonymized *S. miniaceus* GRUBE, 1860 to *S. arcticus* (SARS, 1851), and *S. major* LEVINSEN, 1883 to *S. citrinus* (STIMPSON, 1854). HARTMAN (1948) also proposed a new name, *S. wireni* for “*S. arcticus*” WIRÉN, whereas “*S. arcticus*” WIRÉN had already been synonymized to *S. vegae* by AUGENER (1928). As a result, the nine recognized species of *Spinther* are as follows: (1) *S. oniscooides* JOHNSTON, 1845; (2) *S. arcticus* (SARS, 1851) including *S. miniaceus* GRUBE, 1860; (3) *S. citrinus* (STIMPSON,

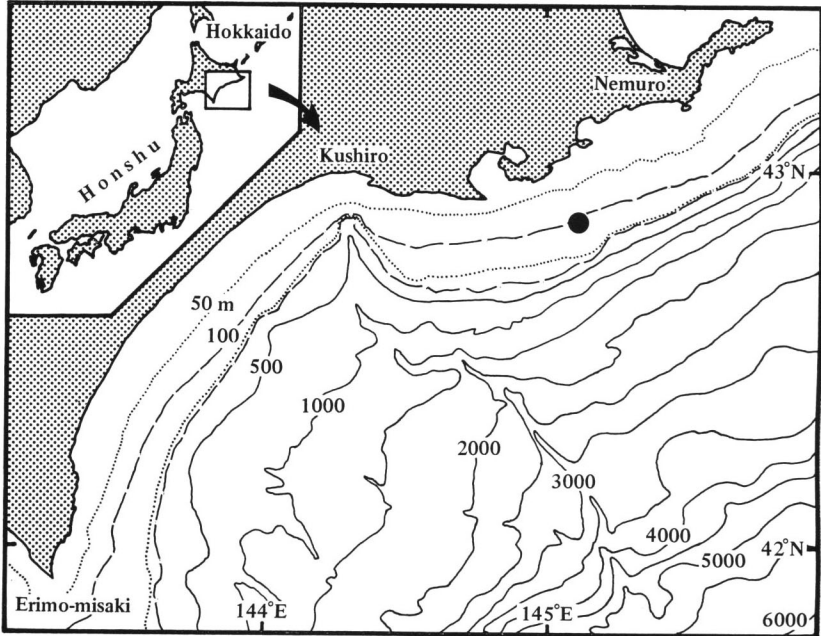


Fig. 1. Location and topography of the sampling station (solid circle), southeast Hokkaido.

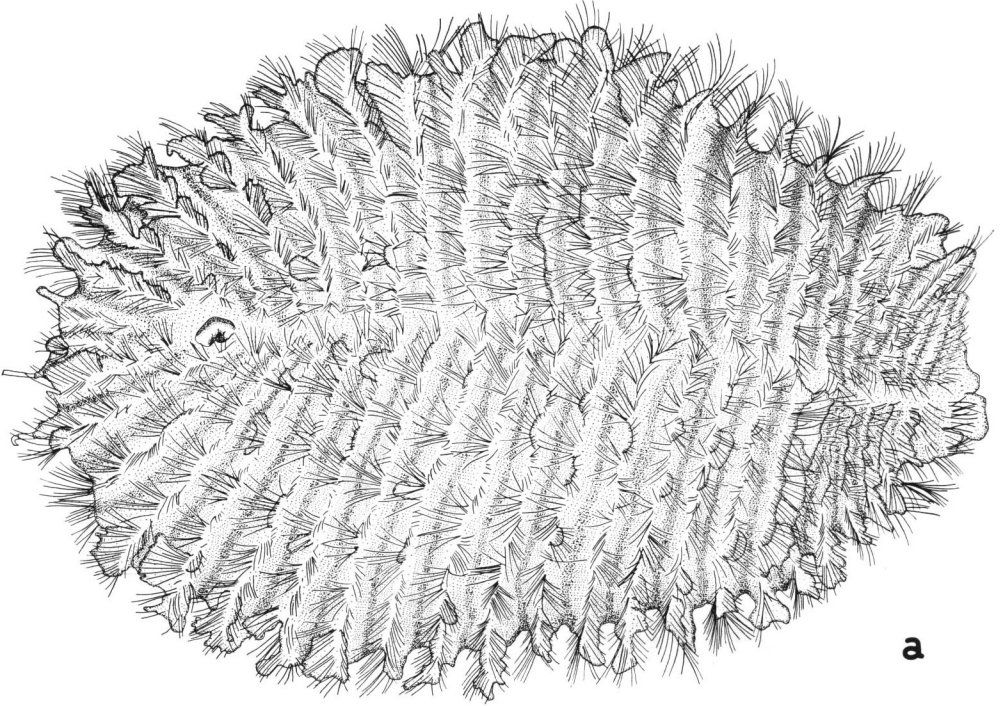
1854) including *S. major* LEVINSEN, 1883; (4) *S. australiensis* AUGENER, 1913; (5) *S. vegae* AUGENER, 1928 including "*S. arcticus*" WIRÉN, 1883 and *S. wireni* HARTMAN, 1948; (6) *S. alaskensis* HARTMAN, 1948; (7) *S. hystrix* USCHAKOV, 1950; (8) *S. japonicus* IMAJIMA *et* HARTMAN, 1964 and (9) *S. usarpia* HARTMAN, 1967. The tenth species, *S. ericinus*, is newly described below.

The material was collected from a depth of 102 m off Kushiro, Hokkaido (Fig. 1) during the cruise KT-83-11 of the R.V. *Tansei Maru*, Ocean Research Institute, University of Tokyo (ORI) with an Agassiz beam trawl of 2-m span. The holotype is deposited in the National Science Museum, Tokyo.

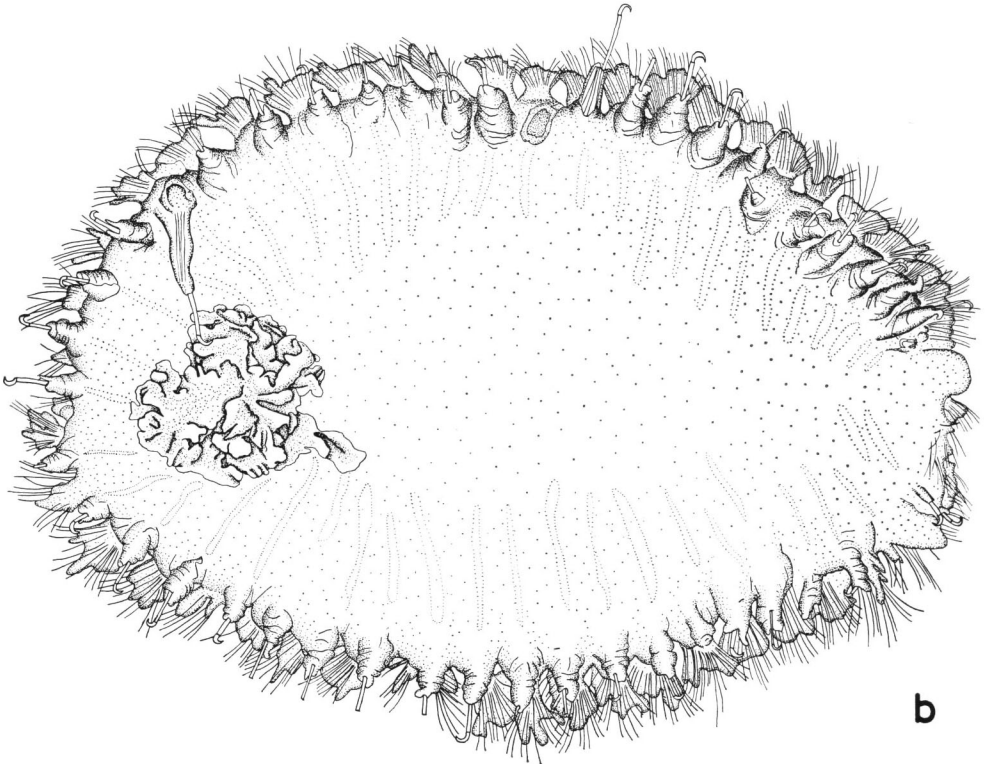
The authors wish to express their sincere gratitude to Dr. Masuoki HORIKOSHI, former professor of ORI for his keen interest in this work and to the director of the cruise KT-83-11, Dr. Noriyuki IKEYA of Shizuoka University, for providing us with the sample, to Dr. D. D. SWINBANKS of ORI for his help in correcting the English of the manuscript. One of the authors, R. YAMAMOTO, especially wants to thank Dr. Tomoyuki MIURA of ORI for his fruitful discussions of polychaete taxonomy and for his critical reading of an earlier draft, and the staff of the Division of Marine Ecology, ORI for their encouragement of this study.

Table 1. Morphological characteristics of *Spinther*.

Species	Ventrum	Parapodial extension	Neurosetae	Notosetae	Number of segments	Length in mm	References
<i>S. oniscoides</i> JOHNSTON	papillate	present	falcate smooth	bifid only	20-25	4-13	HARTMAN, 1948
<i>S. citrinus</i> (STIMPSON)	papillate	present	falcate smooth	largely entire, a few bifid, both equally thick	30-48	11-26	HARTMAN, 1948
<i>S. vegae</i> AUGENER	papillate	present	falcate smooth	bifid and entire, both equal in number and equally thick	43-52	20-25	HARTMAN, 1948
<i>S. alaskensis</i> HARTMAN	papillate	present	falcate smooth	entire except for very few, very slender bifid ones, golden and entire, about two times as long as skin folds	46-47	ca. 28	HARTMAN, 1948 USCHAKOV, 1955
<i>S. hystrix</i> USCHAKOV	papillate	present	falcate smooth	entire except for very few, very slender bifid ones, golden and entire about five times as long as skin folds	up to 50	max. 50	USCHAKOV, 1955
<i>S. arcticus</i> (SARS)	smooth	absent	falcate smooth	bifid only, distal part spread	12-24	1-9	GRAFF, 1888
<i>S. australiensis</i> AUGENER	smooth	absent	falcate lateral tooth	bifid only	15-31	4.5-7.5	HARTMAN, 1948
<i>S. japonicus</i> IMAJIMA et HARTMAN	smooth	absent	falcate smooth	bifid and entire, the ratio is between 1:2 and 1:3	29	5	IMAJIMA and HARTMAN, 1964
<i>S. usarpia</i> HARTMAN	smooth	absent	falcate smooth	bifid only, distal part not spread	20	3	HARTMAN, 1967
<i>S. ericinus</i> sp. nov.	smooth and segmentally ridged	present	falcate smooth	bifid only, distal part spread	27	10.1	present authors



a



b

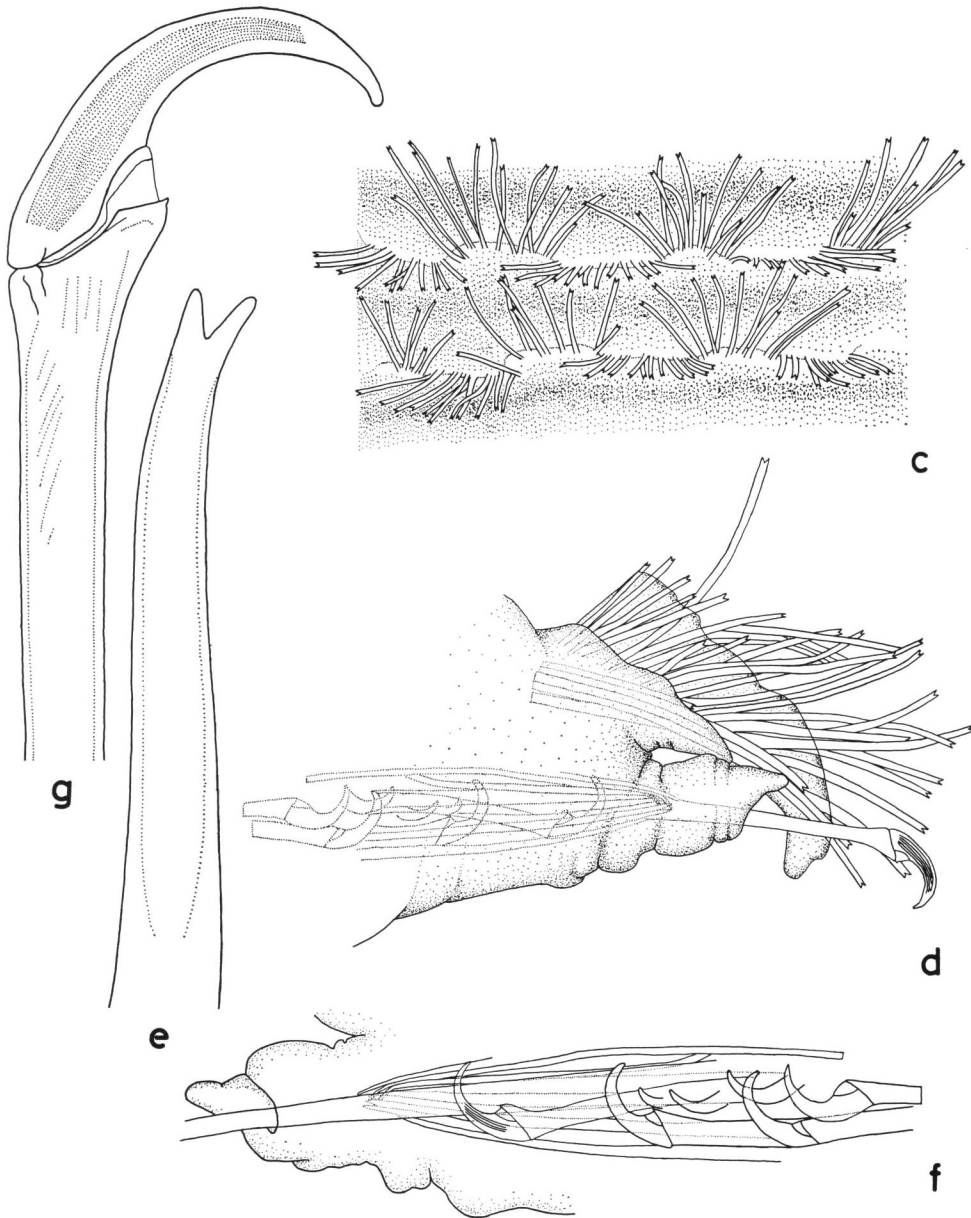


Fig. 2. *Spinther ericinus* sp. nov. a. entire animal, in dorsal view, $12\times$; b. the same, in ventral view, $12\times$; c. notopodial ridge of median region from setigers 8 and 9, $31\times$; d. parapodium from setiger 10, in anterior view, $43\times$; e. notoseta from setiger 10, $560\times$; f. developing hooks and setal bundle from setiger 10, in posterior view, $63\times$; g. distal end of neuroseta from setiger 14, $260\times$.

Genus *Spinther* JOHNSTON, 1845*Spinther ericinus* sp. nov.

(Figs. 2a–g)

(New Japanese name: Toge-hireashigokai)

Material examined. One complete specimen taken at a depth of 102 m off Kushiro, 42°52.5' N, 145°06.5'E—42°52.3' N, 145°05.9'E, on July 10, 1983. Holotype, NSMT-Pol. H 194.

Description. The holotype measures 10.1 mm in length and 7.0 mm in width, excluding setae at the broadest part; it consists of 27 setigerous segments (Fig. 2a). The color is monotonously yellowish brown in ethanol preservation. The body is oval in outline and dorso-ventrally depressed. The dorsum is covered with notopodial setae, except for the central longitudinal area which is bare. Notopodial lamellae are supported by notosetae. Segmental intervals are smooth. The prostomium is small and cylindrical with a rounded end and is situated between the notopodial ridges of setiger 3 in a mid-dorsal region posterior to setiger 2. Eyes are absent. The smooth ventral surface is ridged in each segment (Fig. 2b). The everted proboscis, located ventrally just behind the prostomium, is very lamellated.

Notopodia are directed forward in the first three pairs, and thereafter they are lateral. The notopodial ridge of each parapodium is wavy, except for the lateral margin which is straight. Notopodial setae are directed alternately and regularly to the anterior and posterior directions in correspondence with the wavy ridges (Fig. 2c), except at the lateral margin where the setae are arranged on double rows.

Neuropodia are thick and conical with a prominent, superior parapodial extension (Fig. 2d). The notosetae are slightly curved and bifid distally (Fig. 2e); they are similar to notopodial setae. The distal part of the notosetae is spread. A thick, compound neuropodial hook projects from the distal end of each neuropodium; it is flat and the appendage is strongly curved. The neurosetal shaft and appendage have conspicuous medullae. There are seven developing hooks surrounded by five to six acicula in the embedded basal part (Figs. 2f, g).

Remarks. *Spinther ericinus* is characterized by: (1) one kind of bifid notosetae are arranged in wavy rows; (2) the smooth ventral surface has segmental ridges; (3) neuropodia have a parapodial extension. The members of the genus *Spinther* can be separated into two groups depending on features of the ventrum. The first group is characterized by a papillate ventral surface and it includes five known species, *S. oniscoides*, *S. citrinus*, *S. vegae*, *S. alaskensis* and *S. hystrix*. The second has a smooth ventrum and it includes four known species, *S. arcticus*, *S. australiensis*, *S. japonicus* and *S. usarpia*. *S. ericinus* apparently belongs to the second group as it has a smooth ventrum, but the species is unique in the second group in having a parapodial extension. Moreover this species can be differentiated from *S. australiensis* because of the absence of the falcate lateral teeth on the neurosetae, from *S. japonicus* because

of the absence of unidentate notosetae and from *S. arcticus* and *S. usarpia* because of the presence of segmental ridges on the ventral surface (see Table 1).

Habitat. *Spinther ericinus* may be associated with sponges, because specimen was collected together with sponges at the same sampling station, and such an association has already been reported by several authors for some other species (GRAFF, 1888; MCINTOSH, 1894; FAUCHALD and JUMARS, 1979).

Type locality. Lower continental shelf at a depth of 102 m, off Kushiro, Hokkaido, northern Japan.

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