

## FIVE SPECIES OF THE GENUS *EURYSTOMINA* FILIPJEV, 1921<sup>1)</sup>

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*With Text-figures 1-5 and Tables 1-6*

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Free-living marine nematodes of the genus *Eurystomina* Filipjev, 1921, are relatively long and slender species, belonging to the order Enoplida. They are prominent especially in that males have characteristic two pairs of pre-cloacal supplements. But the taxonomy of them is still much in confusion because of their relatively simple body structure, which is a prevailing situation in the taxonomy of the order Enoplida. In their checklist of aquatic nematodes, Gerlach and Riemann (1973-74) enumerated 42 species which had been described as *Eurystomina*, but considered only half of them as valid species.

Up to the present only one species of the genus *Eurystomina*, i.e. *E. ophthalmophora*, has been known from Japan and adjacent regions (Steiner, 1921; Wieser, 1955; as for the species name, see the discussion below). In the course of the author's works on Japanese marine nematode fauna, especially on the order Enoplida, additional four species which are apparently belonging to the genus *Eurystomina* have been found. The descriptions of them, together with *E. ophthalmophora*, and some discussions on the taxonomical characters of the genus are given below.

Specimens were collected from shores around Shirahama, on the southern west Kii Peninsula, and from intertidal zones of Kuroshima Island and Iriomote Island, in the southwest part of Ryukyu Islands.

### *Eurystomina ophthalmophora* (Steiner, 1921)

(Fig. 1 and Table 1)

*E. terricola* var. *ophthalmophorus*, Steiner, 1921

*E. ophthalmophora* (Steiner, 1921), Filipjev, 1927

*E. ornatum*, Wieser, 1955

*E. ornatum*, Chitwood, 1960

non *Eurystominum terriculum* var. *ophthalmophorum*, Allgén, 1947 (sp. inq.)

Specimens Examined: 7 males and 7 females from *Sargassum thunbergii* collected at Hatake-jima Island, Shirahama.

Description: Measurements are shown in Table 1. The head is truncate

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1) Contributions from the Seto Marine Biological Laboratory, No. 663.

and slightly set off, with ten cephalic setae, of which the shorter ones are about  $1/3$  of the longer ones in length. The cervical setae are rather stout. The buccal cavity is divided into two parts by two encircling and one incomplete transverse rows of minute denticles. The large subventral tooth is reaching before the transverse rows. The ocelli lie at  $35-41 \mu$  (or about twice the depth of the buccal cavity) from the anterior end, lacking conspicuous lenses in some specimens. The oesophagus is broadened toward its base, surrounded by a nerve ring around 40 % of the oesophagus length from the anterior end. The excretory pore opens on a small process, a little before the edge of cephalic capsule. The terminal excretory duct narrows gradually toward its aperture, without an ampulla. The posterior end of the ventral gland is at 42.1–72.5 % in males or 60.3–115.7 % in females of the oesophagus length behind the base of it.

Males: The spicule is cephalated proximally, and is equipped with a weak dorsal process on the distal part. The gubernaculum is provided with a well developed postero-dorsal apophysis, the proximal end of which is bent posteriorly (compare with that of *E. indica*). Three setae are present on each sub-ventral side of the pre-cloacal lip. There are two large pre-cloacal supplements typical for the genus.

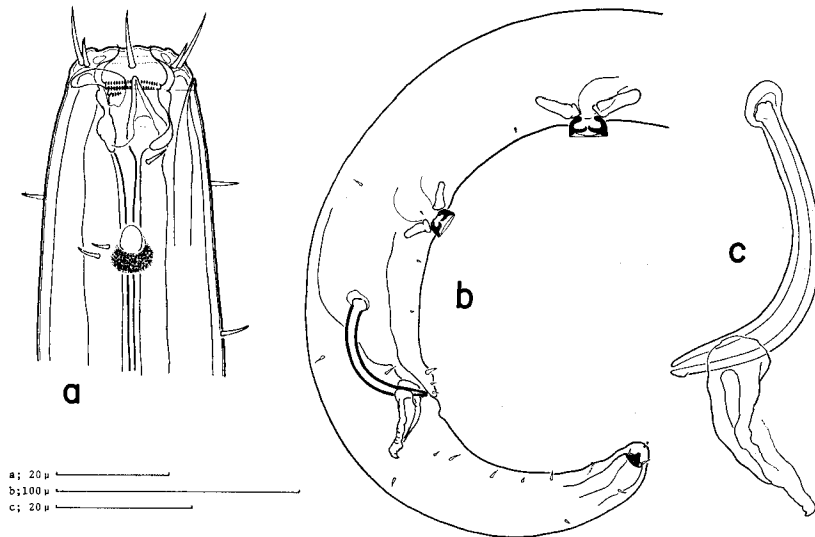


Fig. 1. *Eurystomina ophthalmophora* (Steiner, 1921). A) Head of male. B) Tail of male. C) Spicule and gubernaculum.

Each supplement has two large wings (cf. *E. indica*) posteriorly and anteriorly. The distance between the two supplements almost equals to that between the posterior one and the cloaca. The tail is 2.7–3.1 times the cloacal body diameter long, slightly rounded, and provided with short sub-median setae and two pairs of terminal setae. The tail bears a minute ventral papilla shortly before its end. The first testis begins at about 25 % of the body length from the anterior end.

Females: The ovaries are paired, opposed and reflexed at 11.2–19.3 % and

Table 1. Measurements of *Eurystomina ophthalmophora*.

Abbreviations for tables. L: Body length. eso: Oesophagus length. hd: Head diameter. bd: Body diameter at the level of the base of oesophagus. cd: Cloacal diameter (in males). ad: Anal diameter (in females). mbd: Maximal body diameter (in males). vd: Vulval diameter. nr: The distance of nerve ring from the anterior end. vg: The distance of ventral gland from the anterior end. t: Tail length. spic: Spicule length. gub: Gubernaculum length. V: The distance of vulva from the anterior end. G<sub>1</sub> (or G<sub>2</sub>): The length of the anterior (or posterior) gonad. Sup<sub>1</sub> (or Sup<sub>2</sub>): The length between the cloaca and the first supplement (or that between the two supplements). a,b,c,Vu: De Man's ratio.

MALES							
L	3900	4020	4070	4080	4320	4390	4400
eso	563	567	551	563	592	608	629
hd	20	20		20	20	20	
bd	46	47	47	45	45	45	48
cd	47	46	49	53	44	49	50
mbd	46	49	51	52	48	47	50
nr	247	251	238	226	226	263	242
vg	971		868	911	993	1018	894 (?)
t	126	129	130	138	135	132	144
spic	58	59	58	60	51	54	54
gub	25	26	31	31	30	30	30
Sup <sub>1</sub>	72	75	63	70	82	74	65
Sup <sub>2</sub>	76	83	66	70	75	99	87
a	84.8	82.0	79.8	78.5	90.0	93.4	88.0
b	6.9	7.1	7.4	7.2	7.3	7.2	7.0
c	31.0	31.2	31.3	29.6	32.0	33.3	30.6
FEMALES							
L	3740	3810	4410	4520	4540	4600	4620
eso	633	579	670	625	629	625	637
hd	19	19	20	21		19	
bd	49	46	47	53			51
ad	45	37	37	40	40	41	42
vd	59	59	60	66	64	61	65
nr	238	214	271	247	255	242	
vg	1048	1112	1074	1129	1087	1348	1074
t	138	115	123	133	134	141	135
V	2100	2230	2400	2380	2550	2610	2570
G <sub>1</sub>	488	526	492	616	877	612	676
G <sub>2</sub>	501	552	483	727	881	727	616
a	63.4	64.6	73.5	68.5	70.9	75.4	71.1
b	5.9	6.6	6.6	7.2	7.2	7.4	7.3
c	27.1	33.1	35.9	34.0	33.9	32.6	34.2
Vu	56.1	58.3	54.4	52.7	56.2	56.7	55.6

11.0–19.4 % of the body length before and after the vulva respectively. 1–5 eggs were found in each uterus. The tail is 3.1–3.4 times the anal body diameter long, furnished with few minute setae. The pre-anal lip lacks setae.

**Diagnostic Characters:** The ocelli lie at about twice the depth of the buccal cavity from the anterior end. The excretory pore opens before the level of the transverse rows of the buccal denticles. The distal end of a spicule bears a process. The proximal end of the gubernaculum is bent posteriorly.

**Distribution:** Yellow Sea; California; Shirahama.

**Remarks:** Wieser (1955) considered *E. ophthalmophora* to be a synonym of *E. ornata*, and described an *Eurystomina* species from Shirahama as *E. ornata*. On the contrary, Inglis (1962) admitted the validity of *E. ophthalmophora*, emphasizing the difference in the shapes of gubernacula between the two, i.e. that of *E. ornata* is divided into two parts proximally, but that of *E. ophthalmophora* is not. Because the difference is striking and if the geographical distributions of the two forms are taken into consideration, it seems that the opinion of Inglis is acceptable. The present specimens show great similarities to the description by Wieser. So it may be concluded that the present specimens are *E. ophthalmophora* which is not conspecific with *E. ornata*. As for *E. ornata indica*, which Inglis (1962) synonymized with *E. ophthalmophora*, see the description below.

### *Eurystomina indica* n. sp.

(Fig. 2 and Table 2)

*E. ornata indica* Micoletzky, 1930

**Specimens Examined:** Three males and one female collected from sandy mud deposited in a shallow tide pool at Kuroshima Island (Ryukyu Islands).

**Description:** Measurements are shown in Table 2. The body is long but relatively stout, attenuating anteriorly and posteriorly, with a truncate head. The cuticle is smooth, with few scarcely visible setae. The longer cephalic setae attain to half the corresponding body diameter length. The shorter cephalic setae are about 1/2 of the longer ones in length. The cervical setae are short and stout. The buccal cavity is cylindrical and divided into two parts by three transverse rows of denticles. The sub-ventral tooth does not exceed the level of the transverse rows. The ocelli lie at about twice the depth of the buccal cavity from the anterior end. The breadth of an amphid is about half of the corresponding body diameter. The excretory pore opens on the level of or a little behind the transverse rows of the buccal denticles. The terminal excretory duct is rather long, followed by a small ampulla. The oesophagus is surrounded by a nerve ring at 44.5–46.9 % of its length in males and 37.4 % in a female. The ventral glands are inconspicuous in the present specimens.

**Males:** The shape of the pre-cloacal supplements of this species is typical in

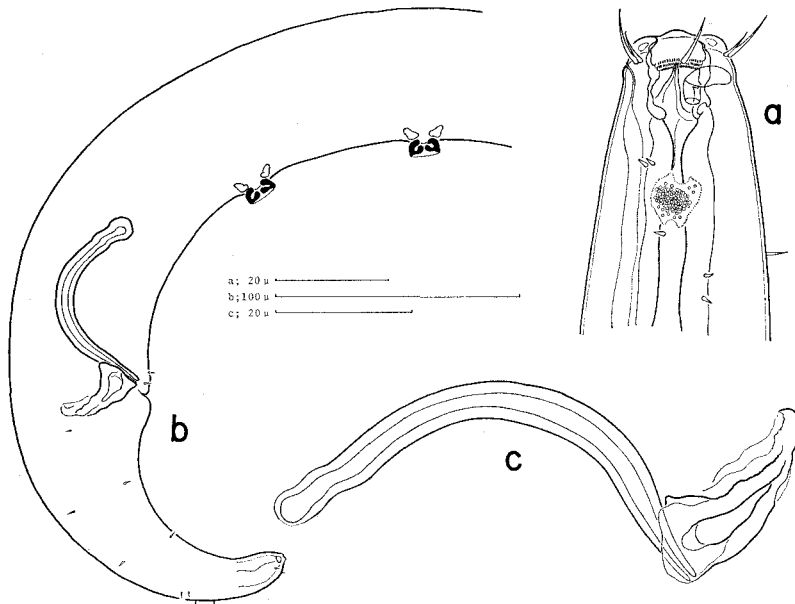


Fig. 2. *Eurystomina indica* n. sp. type specimen (male). A) Head. B) Tail. C) Spicule and gubernaculum.

Table 2. Measurements of *Eurystomina indica*

MALES				FEMALE	
L	3960	4100	4110*	L	4150
eso	597	582	633	eso	690
hd	19	17	19	hd	20
bd	57	57	59	bd	59
cd	55	55	55	ad	37
mbd	65	62	58	vd	88
nr	263	257	282	nr	258
t	125	154	151	t	175
spic	78	78	82	V	2340
gub	24	28	31	G <sub>1</sub>	637
Sup <sub>1</sub>	101	120	104	G <sub>2</sub>	650
Sup <sub>2</sub>	69	99	78		
a	60.9	66.1	70.9	a	47.2
b	6.6	7.0	6.5	b	5.9
c	31.7	26.6	27.2	c	23.7
				Vu	56.4

\* Type specimen

that its lateral wings are weakly developed (see the discussion below). The spicule is heavily cuticularized and strongly curved. The proximal end of the spicule, twisted and slightly cephalated, is at about the middle between the cloaca and the first sup-

plement. The postero-dorsal side of the spicule is smooth. The gubernaculum is stout, with a broad base, and the proximal end of it is bent anteriorly. The distance between the two supplements (69–78  $\mu$ ) is shorter than that between the cloaca and the posterior supplement (101–120  $\mu$ ). The tail is plump (2.3–2.8 times the cloacal body diameter long). There are one pair of terminal setae, minute setae dispersed on the sub-median lines of tail and two pairs of setae on the pre-cloacal lip.

Female: The ovaries are paired, opposed and reflexed at 15.3 % and 15.7 % of the body length before and after the vulva respectively. One egg (73–74  $\times$  130–132  $\mu$ ) was found in each uterus. The tail is slender (4.7 times the anal body diameter long). The vulva opens shortly behind the middle of the body length. The body diameter at the corresponding part is very large.

Diagnostic Characters: The ocelli lie at about twice the depth of the buccal cavity from the anterior end. The excretory pore does not exceed the level of the transverse rows of the buccal denticles. The proximal end of the gubernaculum is directing anteriorly. The distal end of the spicule is smooth. The wings of the pre-cloacal supplements are weakly developed.

Distribution: Indonesia; Bay of Bengal (?); Kuroshima Island.

Remarks: Inglis (1962) suggested the possibility that *E. ornata* var. *indica* Micoletzky, 1930, is a synonym of *E. ophthalmophora*, but they are decisively different from each other in the following characters; the position of the excretory pore, the size and shape of the spicule, the shape of the gubernaculum, and above all, the shape of the pre-cloacal supplements. Most of former workers have considered the small wings of the pre-cloacal supplements shown in the description by Micoletzky, 1930, as an immature condition. For example, Wieser (1955) says, "The taxonomic value of the lacking wings of the supplement in males is not quite clear. In one specimen of my *E. ornatum* these wings were also absent which shows that their presence or absence is not always a reliable species character." Although the present author could examine only three males, all of them had weakly developed wings, which well agreed with the description by Micoletzky. In fact they did not "lack wings" at all. Immature supplements without wings could be found in one male of *E. parva* (Fig. 3, d) which was molting. So it may be concluded that the small wings of *E. ornata* var. *indica* is a reliable species character. *E. ornata* var. *indica* was also described by Timm (1961), but he described it on female specimens only. In addition, there are some disagreements between the description by Micoletzky or the present specimens and those of Timm, so the full conspecificity of them cannot be established now.

### *Eurystomina parva* n. sp.

(Fig. 3 and Table 3)

Specimens Examined: Four males and one female collected from sea weeds

on a coral reef at Kuroshima Island.

Description: Measurements are shown in Table 3. This species is one of the smallest species in *Eurystomina*. The head is truncate with ten cephalic setae, of which the shorter ones are slightly longer than half the length of the longer ones. The cervical setae, rather stout, are scattered between the mouth and the ocelli. The buccal cavity is divided into two parts by three transverse rows of denticles, the anterior part is wider and shallower than the posterior one. The subventral tooth reaches the first transverse row. The amphids, the width of which is about 1/4 the corresponding body diameter, lie behind the level of the transverse rows of the buccal denticles. The aperture of the excretory duct is inconspicuous in the present specimens. The ocelli lie at 3.5–3.7 times in males (4.2 times in a molting male) or 3.9 times in a female the buccal cavity depth behind the anterior end. The nerve ring surrounds the oesophagus at 33.1–38.5 % in males or 28.0 % in a female of the oesophagus length from the anterior end. The ventral gland ends at 70.0–71.6 % in males or 23.0 % in a female of the oesophagus length behind the base of the oesophagus.

Males: The spicule is arcuate, with a weakly developed proximal head. The distal part of the spicule is smooth. The gubernaculum is stirrup-shaped with the proximal half bent slightly anteriorly. The distance between the two pre-cloacal supplements is shorter than that between the posterior one and the cloaca. The proximal end of the spicule is at about the middle of the interval. In one molting male, the supplements are immature without wings and embedded under the cuticle (Fig. 3, d). The tail is 3.2–3.8 times the cloacal body diameter long, and it is smooth

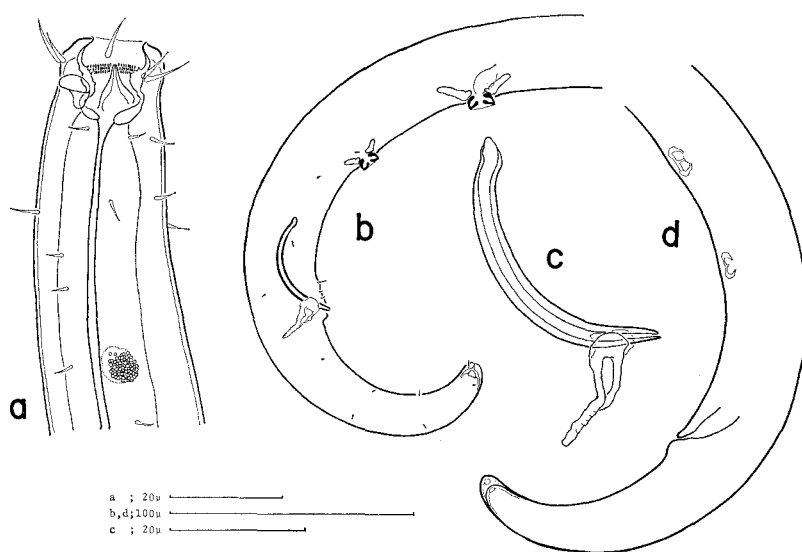


Fig. 3. *Eurystomina parva* n. sp. A) Head of the type specimen (male). B) Tail of the type specimen. C) Spicule and gubernaculum of the type specimen. D) Tail of an immature male, which lacks wings of pre-cloacal supplements.

Table 3. Measurements of *Eurystomina parva*

MALES					FEMALE	
L	2470*	2610	2670**	2860	L	3110
eso	537	558	579	664	eso	855
hd	17	16	16	17	hd	23
bd	33	33	35	35	bd	46
cd	29	30	33	33	ad	33
mbd	31	33	33	35	vd	54
nr	207	201	180	222	nr	257
vg	913		1016	1129	vg	1052
t	112	108	107	110	t	118
spic	52	49		47	V	1940
gub	21	19		20	G <sub>1</sub>	714
Sup <sub>1</sub>	69	70	80	80	G <sub>2</sub>	565
Sup <sub>2</sub>	53	57	49	69		
a	79.7	79.1	80.9	81.7	a	57.6
b	4.6	4.7	4.6	4.3	b	3.6
c	22.1	24.2	25.0	26.0	c	26.4
					Vu	62.4

\* Type specimen

\*\* A molting male

with few minute setae. The pre-cloacal lip bears three pairs of setae, of which the anterior one is longer.

Female: The ovaries are paired, opposed and reflexed at 23.0 % and 18.2 % of the body length before and after the vulva respectively. No eggs were found in the present specimen. The tail, 3.6 times the anal body diameter long, is smooth without conspicuous setae.

Diagnostic Characters: The ocelli lie at more than 3 times the buccal cavity depth behind the anterior end. The buccal cavity is divided by three transverse rows of the buccal denticles. The spicule is smooth. The gubernaculum is stirrup-shaped.

Distribution: Kuroshima Island.

Remarks: The present new species is different from all the *Eurystomina* species hitherto known in that their body size is small and that matured males have characteristic stirrup-shaped gubernacula.

*Eurystomina pareurylaima* n. sp.

(Fig. 4 and Table 4)

Specimens Examined: Two males and three females collected from sandy mud at the mouth of Nakama River, Iriomote Island.

Description: Measurements are shown in Table 4. This is a very thin species,



i.e. de Man's ratio  $a$  exceeds 100 in males and 80 in females respectively. The head is truncate, with ten cephalic setae, of which the shorter ones are half as long as the longer ones. There are stout cervical setae around halfway between the anterior end and the ocelli. The buccal cavity is divided by three transverse rows of denticles. The large sub-ventral tooth reaches before the transverse rows. The amphids,  $1/3$  the corresponding head diameter in width, lie behind the rows. The excretory pore opens on the level of the amphids (or behind the denticular rows), with a short terminal duct and an ampulla. The ocelli lie at 3.1–3.2 times the buccal cavity depth behind the anterior end, without conspicuous lenses. The oesophagus is relatively short (i.e., the de Man's ratio  $c$  of the present species is 6.1 in males and 5.1–6.2 in females) and is surrounded by the nerve ring at 35.9–36.7 % (in males) or 32.9–35.8 % (in females) of its length from the anterior end. The large excretory cell (or ventral gland) ends at 80.8–85.5 % (in males) or 63.2–87.8 % (in females) of the oesophagus length behind the oesophagus base.

Males: The spicule is slightly arcuate, with its distal end lacking any modification, and with a weakly developed proximal head which is bent ventrally. The gubernaculum, about  $1/3$  the spicule in length, narrows gradually toward its proximal end, slightly curved dorsally on the whole. There are well developed pre-cloacal supplements. The distance between the two supplements is longer than that between the posterior one and the cloaca. The proximal end of the spicule is halfway between the cloaca and the posterior supplement. The tail, 2.8–3.4 times

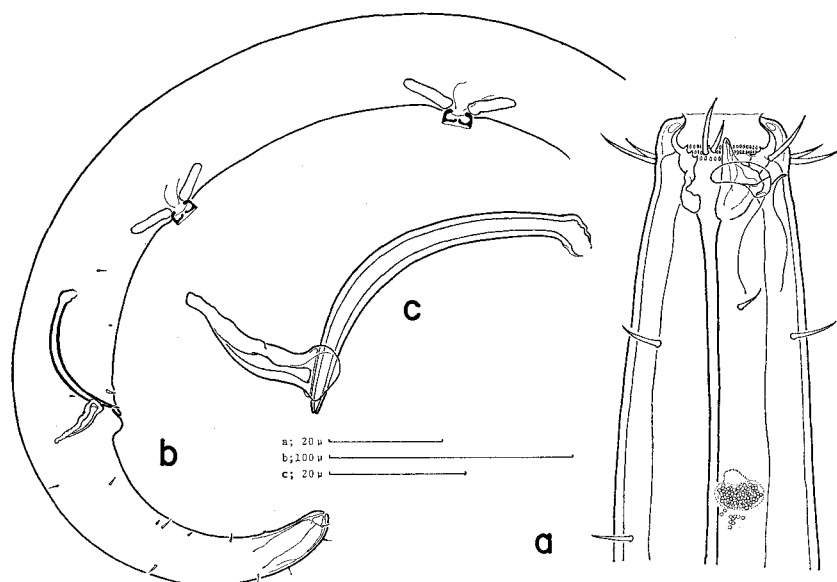


Fig. 4. *Eurystomina pareurylaima* n. sp. type specimen (male). A) Head. B) Tail. C) Spicule and gubernaculum.

the cloacal body diameter long, is rounded, with short setae scattered along submedian lines. There are one pair of terminal setae and a ventral papilla before the tail end. Only two pairs of setae can be found on the pre-cloacal lip.

Table 4. Measurements of *Eurystomina pareurylaima*

MALES			FEMALES			
L	4620*	4760	L	3730	3420	4910
eso	761	781	eso	697	671	794
hd	21	21	hd	19	19	21
bd		41	bd	39	39	44
cd	42	45	ad	29	30	32
mbd	39	43	vd	40	42	56
nr	291	287	nr	248	240	261
vg	1412	1412	vg	1309	1129	1296
t	141	128	t	125	117	122
spic	56	56	V	2420	2050	2790
gub	24	25	G <sub>1</sub>	298	505	984
Sup <sub>1</sub>	87	98	G <sub>2</sub>	351	458	742
Sup <sub>2</sub>	127	98				
a	118.5	110.7	a	93.3	81.4	87.7
b	6.1	6.1	b	5.4	5.1	6.2
c	32.8	37.2	c	29.8	29.2	40.2
			Vu	64.9	59.9	56.8

\* Type specimen

Females: The ovaries are paired, opposed and reflexed at 8.0–20.0 % and 9.4–15.1 % of the body length before and after the vulva respectively. In the matured female (L=4910  $\mu$ ) six eggs were found in the anterior uterus (the largest egg measures  $49 \times 117 \mu$ ), but the posterior uterus developed weakly and contained no eggs. Other females were immature. The tail, 3.8–4.3 times the anal body diameter long, is smooth without conspicuous setae. In the matured female a post-anal ventral papilla is present.

Diagnostic Characters: The ocelli lie at about 3 times the buccal cavity depth from the anterior end. The buccal cavity is divided into two parts by three rows of the denticles. The amphids and the excretory pore lie behind the transverse rows. The distal end of the spicule is smooth. The gubernaculum narrows gradually toward its proximal end, slightly curved dorsally on the whole.

Distribution: Iriomote Island.

Remarks: The present species reminds me of *E. eurylaima* in the shape and the proportion of the spicule and the gubernacula. But they are not conspecific in that the spicule of the present species does not swell distally and that the distance of the two supplements is longer than that between the posterior one and the cloaca.

*Eurystomina setosa* n. sp.

(Fig. 5 and Table 5)

**Specimens Examined:** Four males and one female collected from sandy substratum, 3 m deep, off the north shore of Seto Marine Biological Laboratory, Shira-hama.

**Description:** Measurements are shown in Table 5. This species is an *Eurystomina* of median size with a truncate head. A circle of ten long cephalic setae present, of which the shorter ones are longer than half the longer ones. In males characteristic cervical setae measure about half of the corresponding body diameter, lying at about the middle between the anterior end and the ocelli. But in females they are much thinner and shorter. The buccal cavity is divided into two parts by three transverse rows of denticles. The large sub-ventral tooth reaches before the transverse rows. The anterior part of the buccal cavity is very wide and the broadest portion of it is about  $\frac{3}{4}$  the corresponding head diameter. The amphids, wider than  $\frac{1}{3}$  the corresponding head diameter, lie behind the transverse rows of the buccal denticles. The excretory pore opens on the level of the amphids, followed by a short terminal duct and an ampulla. The ocelli, lacking pigments, lie at 2.9–3.3 times in males or 3.7 times in a female the buccal cavity depth after the anterior end. The nerve ring surrounds the oesophagus at 33.8–36.6 % in males or 30.8 % in a female of the oesophagus length from the anterior end. The base of the ventral gland lie at 49.0–55.1 % in males or 41.1 % in a female of the oesophagus length behind the base of the oesophagus.

**Males:** The spicule is arcuate, equipped with a proximal head and a postero-

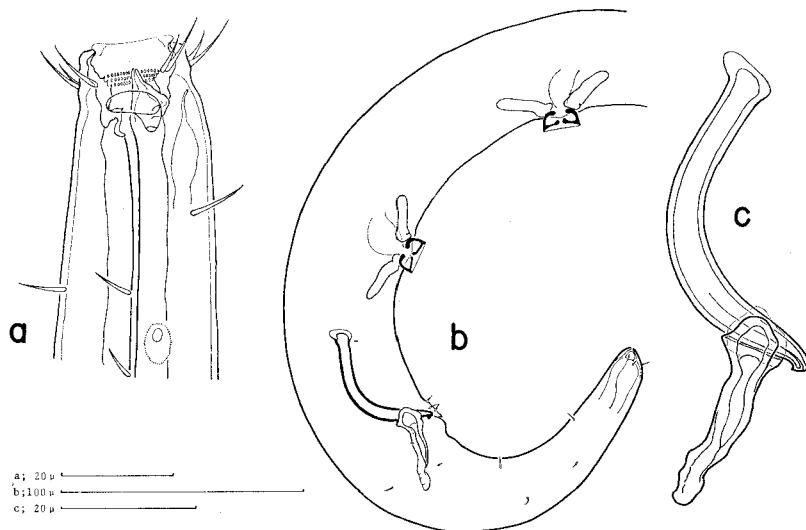


Fig. 5. *Eurystomina setosa* n. sp. type specimen (male). A) Head. B) Tail. C) Spicule and gubernaculum.

dorsal process. The gubernaculum, longer than half the spicule length, is almost straight and the proximal end of it does not narrow so heavily. The distance between the two well developed pre-cloacal supplements is a little longer than that between

Table 5. Measurements of *Eurystomina setosa*

MALES					FEMALE	
L	3050	3300*	3830	3870	L	3690
eso	710	770	732	738	eso	890
hd	16	18	17	16	hd	18
bd	38	43	50	42	bd	50
cd	40	45	47	48	ad	33
mbd	39	47	47	54	vd	51
nr	248	278	257	270	nr	278
vg	1082	1147	1168	1145	vg	1264
t	123	132	144	149	t	131
spic	54	62	58	64	V	2150
gub	34	33	31	34	G <sub>1</sub>	607
Sup <sub>1</sub>	78	68	88	95	G <sub>2</sub>	483
Sup <sub>2</sub>	99	83	90	103		
a	78.2	70.2	81.5	71.7	a	72.4
b	4.3	4.3	5.2	5.2	b	4.1
c	24.8	25.0	26.6	26.0	c	28.2
					Vu	58.3

\* Type specimen

the posterior one and the cloaca, and the proximal end of the spicule is situated nearer to the posterior supplement. The tail is thick, 2.9–3.1 times the cloacal body diameter long, with some short setae on the sub-median lines and three pairs of terminal setae. The pre-cloacal lip bears three pairs of setae.

Female: The ovaries are paired, opposed and reflexed at 16.4 % and 13.1 % of the body length before and after the vulva respectively. No eggs were found in a uterus. The tail is smooth and 4.0 times the anal body diameter long.

Diagnostic Characters: The ocelli lie at about 3 times the buccal cavity depth behind the anterior end. The buccal cavity is divided by three transverse rows of the buccal denticles. The excretory pore opens behind the level of the transverse rows. The spicule bears a dorsal process on its posterior end. The straight gubernaculum is longer than half the spicule length.

Distribution: Shirahama (Kii Peninsula).

Remarks: This species resembles *E. minutisculae* of Wieser and Hopper, 1967, at the first glance, but differs from the latter in that males of the present species have much longer cervical setae and especially in that they bears a dorsal process on the posterior end of the spicule.

### General Remarks

In 1962 Inglis reviewed the genus *Eurystomina* and incidentally admitted 38 species through amalgamation and division of the contemporary species. He took mostly the shape of the gubernaculum as an almost sole reliable species character to distinguish the species within this genus, depending upon the figures in the literatures, many of which were, however, imperfectly drawn. Thus, he synonymized *E. ornata indica* Micoletzky, 1930, with *E. ophthalmophora*. But, as is stated elsewhere, the present author's close observation has revealed that there are not a few differences between the two, even in the shapes of the gubernacula, and that they are not conspecific.

Table 6. Relations of *E. americana*, *E. minutisculae* and *E. chitwoodi*

A) Proposal by Inglis (1962)		
<i>E. minutisculae</i>		
of Chitwood, 1951	————	<i>E. minutisculae</i> Chitwood, 1951
of Timm, 1952		
<i>E. americana</i>	} ———	<i>E. americana</i> Chitwood, 1936
of Chitwood, 1936		
of Chitwood, 1951	————	<i>E. chitwoodi</i> Inglis, 1962
B) Comparison by Wieser and Hopper (1967)		
	<i>E. americana</i> of Chitwood, 1936	<i>E. minutisculae</i> of Timm, 1952
row of denticles	one	three
ocelli	—	+
spicule	rectangularly bent	semicircular
terminal excretory duct	short	long
tail	provided with setae	naked
C) Additional proposal by Inglis (1971)		
<i>E. minutisculae</i>		
of Wieser and Hopper, 1967	————	<i>E. americana</i> Chitwood, 1936
D) Suggested synonymy in this paper		
<i>E. americana</i> Chitwood, 1936		
<i>E. americana</i> of Chitwood, 1951		
<i>E. minutisculae</i> Chitwood, 1951		
<i>E. minutisculae</i> of Timm, 1952		
		of Wieser and Hopper, 1967

The treatment of *E. americana* and *E. minutisculae* by Inglis seems to be still more irrelevant. *E. americana* was described originally by Chitwood in 1936. In 1951 he redescribed *E. americana*, and simultaneously described a new species, *E. minutisculae*. Timm also described *E. minutisculae* in 1952. Inglis (1962) synonymized *E. minutisculae* of Timm, 1952, with *E. americana* of Chitwood, 1936, but separated *E. americana* of Chitwood, 1951, from *E. americana* of Chitwood, 1936, and raised it to a new species, *E. chitwoodi* (see Table 6, A). On the other hand, Wieser and Hopper

(1967) indicated differences in several characters between *E. americana* of Chitwood, 1936, and *E. minutisculae* of Timm, 1952, in addition to the redescription of *E. minutisculae*, and rejected the conspecificity of the two species (see Table 6, B). But in 1971 Inglis renewed his former opinion, with a new synonymization of *E. minutisculae* of Wieser and Hopper, 1967, with *E. americana* of Chitwood, 1936 (see Table 6, C). Recently, Lambshhead and Platt (1979) gave a short review of the sub-family Eurystomininae. They expressed the opinion that *E. americana* of Chitwood, 1936, and that of Chitwood, 1951, were conspecific, but did not refer to *E. minutisculae*.

As Inglis (1962) pointed out, the contour of the gubernaculum of *E. americana* of Chitwood, 1951, looks different from that of *E. americana* of Chitwood, 1936. Nevertheless, there are not a few features which rather emphasize the similarity between the two: for example, the buccal cavity is very narrow for the species of this genus, and has only one row of buccal denticles; the terminal excretory duct is long; the spicule is somewhat broadened in its middle region (the spicule is "sickle-shaped" in *E. americana* of Chitwood, 1936); the altitude of the cuticularized portion of a pre-cloacal supplement is as long as or rather longer than the breadth of it; etc. Therefore, the separation of *E. americana* of Chitwood, 1951, from that of Chitwood, 1936, and the establishment of a new species, *E. chitwoodi*, may not be accepted.

As for *E. minutisculae*, all the three *E. minutisculae*<sup>2)</sup> (described by Chitwood, 1951; Timm, 1952; Wieser and Hopper, 1967) have common natures in several characters, which are distinct from the above-mentioned natures of *E. americana*. Those are: a shallow buccal cavity which bears three rows of the buccal denticles; a short terminal excretory duct; a spicule which is gradually attenuated to its distal end; flat supplements; etc. Hence, these three eurystominid species described as *E. minutisculae* are conspecific and they cannot be synonymized with *E. americana* (see Table 6, D).

A comprehensive treatment of a group should be necessary at certain stage of investigation and the revision by Inglis (1962) is naturally helpful for the further development of the study of free-living marine nematodes. It is also true, on the other hand, that the taxonomic knowledge and ecological information are still insufficient on many free-living marine nematodes already reported, on which such revision should base. Thus, the accumulation of examination of new materials, as well as the adequate redescrptions of the species formerly described, is certainly mostly required.

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2) *E. minutisculae* is also mentioned by Gerlach (1955; as *aff. minutisculae*) and Mc Closkey (1970). But both of them referred to it only in tables. Thus I excluded them in this discussion.

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