

# An Initial Report on a Collection of Chilean Marine Nematodes<sup>1)</sup>

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(With 10 Figures)

This study represents a partial coverage of a nematode collection made in Chile by Dr. GERD HARTMANN and Dr. GESA HARTMANN-SCHRÖDER, prepared in conjunction with the honoring of Prof. Dr. KONSTANTIN V. HAFFNER at the time of his 70th birthday. Presented at this time are descriptions of 10 species of free-living marine nematodes, five species and one subspecies of which are new to science:

Oncholaimidae FILIPJEV, 1916  
*Oncholaimellus* DE MAN, 1890  
*O. vonhaffneri* n. sp.  
 Cyatholaimidae FILIPJEV, 1918  
*Paracyatholaimus* MICOLETZKY, 1921  
*P. paucipapillatus* GERLACH, 1955  
 Chromadoridae FILIPJEV, 1917  
*Metachromadora* FILIPJEV, 1918  
*M. (Chromadoropsis) hartmanni* n. sp.  
 Microlaimidae MICOLETZKY, 1922  
*Microlaimus* DE MAN, 1880  
*M. pecticauda* n. sp.  
 Leptolaimidae ORLEY, 1880  
*Leptolaimus* DE MAN, 1876  
*L. gerlachi* n. sp.

Linhomoeidae FILIPJEV, 1922  
*Eleuthrolaimus* FILIPJEV, 1922  
*E. obtusicaudatus* ALLGEN, 1947  
 Araeolaimidae SCHNEIDER, 1939  
*Odontophora* BÜTSCHLI, 1874  
*O. pacifica chiliensis* n. subsp.  
 Monhysteridae DE MAN, 1876  
*Theristus* BASTIAN, 1865  
*T. resinus* WIESER, 1959  
*T. flevensis* STEKHOVEN, 1935  
*Steineria* MICOLETZKY, 1921  
*S. chiliensis* n. sp.

All specimens are preserved in glycerin on permanent mounts. The nematodes reported here-in were collected from the vicinity of Estero Lenga near Concepción, Chile. The reader is referred to the detailed analysis given by HARTMANN-SCHRÖDER and HARTMANN (1962) of the individual collection sites. Stations referred to in this study are those given in the above mentioned work.

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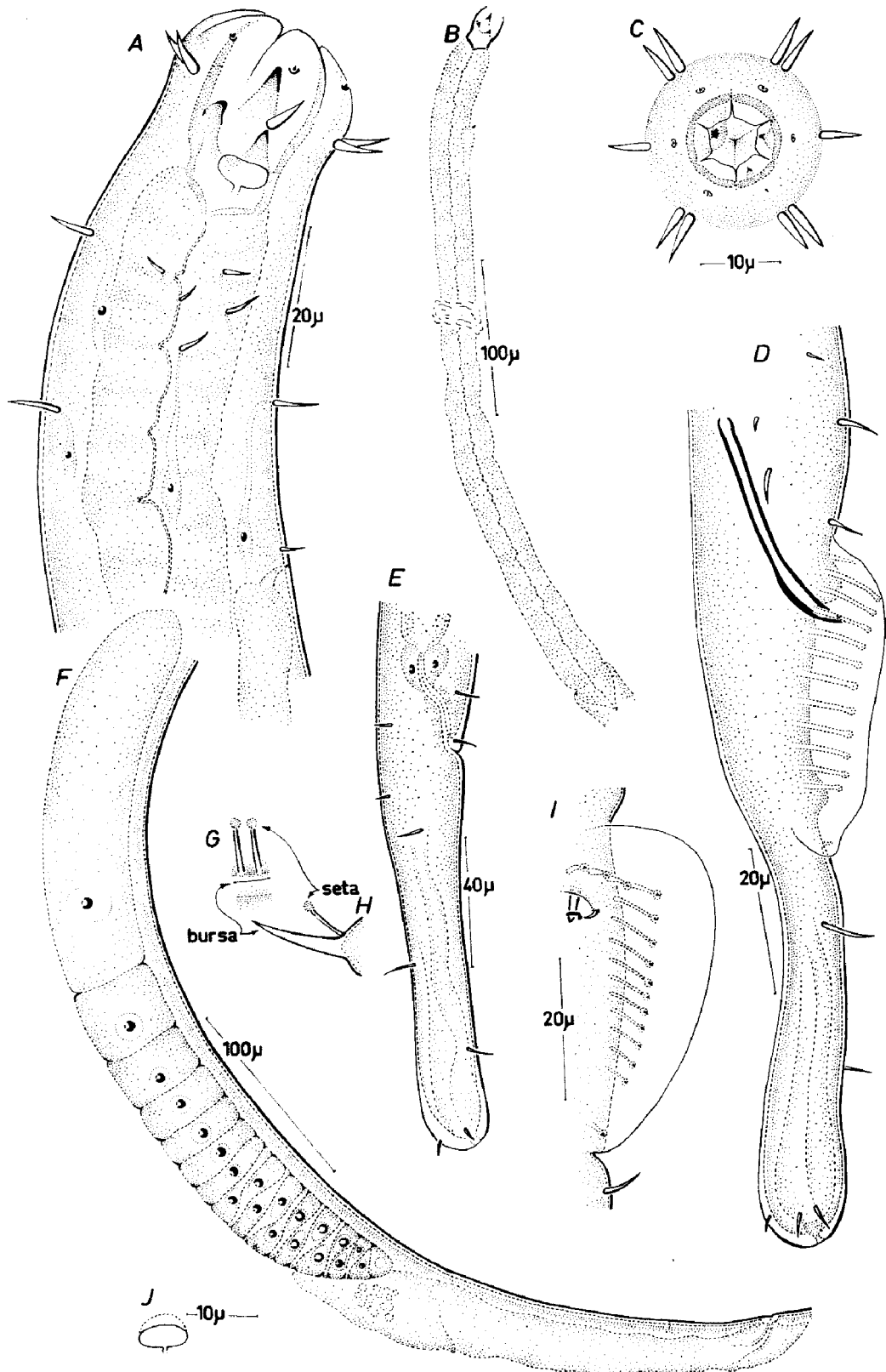


Fig. 1: *Oncholaimellus vonhaffneri* n.sp. A, male anterior. B, male esophagus. C, face view of male. D, male tail. E, female tail. F, female genital duct. G & H, schematic presentation of male bursa from lateral and cross-sectional perspectives respectively. I, male bursal region from ventral view: only left-hand side illustrated. J, female amphid.

*Oncholaimellus vonhaffneri* n. sp.

(Figure 1: A—J)

Description of male: (figure 1: A—D, G—I)

Holotype: L=2.54 mm, a=64.2, b=6.6, c=28.5

Paratypes:	L (mm)	a	b	c
	3.00	63.0	7.7	28.6
	2.74	72.0	6.7	28.8
	2.75	72.2	6.4	28.9

The head is bluntly rounded, with a slight constriction posterior to the cephalic setae. The lips are large: each bears a small papillae. There is a single circle of 10 cephalic setae, these being of about  $8\ \mu$  in length. The head diameter at the level of the cephalic setae is  $24\ \mu$ . — The cuticle is smooth; there are weak indications of lateral lines running the length of the body. Cervical setae are as illustrated; large nerve-cells are clearly visible leading to these setae. Other than in the tail region, no additional setae were observed. — The stoma is large:  $25\ \mu$  deep by  $15\ \mu$  in breadth. The stomal walls are prominently sclerotized. The only differentiation in stomal-wall sclerotization is at the level of the base of the teeth. At this level there is a thickening of the stomal wall which forms a ridge within the stoma and this ridge is manifested as a ring encircling the stoma. Within the stoma is a large dorso-lateral tooth located on the right-hand side, and two smaller teeth, one located laterally, the other subventrally on the left-hand side of the stoma. — The amphid is located opposite the base of the teeth, is oval in contour: about 28% of the corresponding head diameter in width. — The esophagus is long, conical: opposite the excretory pore it has a diameter of  $14\ \mu$ , at its base the diameter is  $29\ \mu$ . The nerve-ring is located at 42% of the esophagus. The excretory pore is located  $72\ \mu$  posteriad. Body diameter at the base of the esophagus is  $44\ \mu$ .

The spicules are  $38\ \mu$  long, slightly curved, and somewhat broad distally. There is no evidence of gubernaculum or lateral-pieces. A large, prominent bursa is present. I have interpreted the bursa as a relatively thick, hyaline structure lacking "ribs". Ventral to the bursa on either side is a row of 15 setae. It would be reasonable to argue that these setae are actually papillae with prominent ducts or nerve attachments which project from a no-longer discernable ventral portion of the bursa. The knob-like appearance of the distal end of these setae would tend to confirm the latter view. Genital setae are located as illustrated (figure 1: D & I). — The tail is club-shaped, becoming of greater diameter distally from the point at which the bursa terminates. It is 5.3 anal diameters long.

Description of female: (figure 1: E, F, &amp; J)

Allotype: L=3.04 mm, a=51.0, b=7.1, c=31.9, V=67%

Paratypes:	L (mm)	a	b	c	V (%)
	2.78	64.8	6.6	27.8	65.1
	2.19	61.4	5.9	25.6	65.3
	2.81	65.6	6.9	31.0	64.3

The female closely resembles the male. The amphid illustrated (figure 1: J) is not to indicate dimorphism between the sexes, but rather to demonstrate the type of variation in amphid appearance that can be encountered. — The single ovary is reflexed. — The tail is 4.8 anal diameters long. As in the case of the

male tail, its diameter is least at a point midway between the anus and the terminus.

**Remarks:** *O. vanhaffneri* is not closely related to any here-to-fore described *Oncholaimellus*. (The genus does not appear to be uniform: not all species, for example, are bursate; and at some future date will require splitting). The stomal structure is not characteristic: that is to say that it is of "simpler" form, lacking a prominent differentiation between anterior and posterior regions. It is this feature that has been considered the primary character of the genus (WIESER, 1953, p. 104).

The new species is placed in this genus because of the presence of a bursa, although even in this feature the structural differences are quite striking: that is a large bursa with subventral rows of setae distinct from and ventral to the bursa. *O. vanhaffneri* cannot be accommodated within any other existing genus, and it would seem unwise to erect a new genus at this time on the basis of differences in stoma and bursa given here.

Type-specimens are being maintained temporarily by the author under collection number DM 148.

Type-locality: Estero Lenga, near Concepción, Chile. Collections were made 150 meters from the mouth of the estuary at a depth of 30 cm from fine, brown sand on 28. VII. 59.

*Paracyatholaimus paucipapillatus* GERLACH, 1955

(Figure 2: A—H)

Synonym: *Paracanthonchus tumepapillata* TIMM, 1957

Description of male: (figure 2: A, D—F, H)

L (mm)	a	b	c
1.67	25.8	6.6	21.9
1.54	26.5	6.0	15.4
1.03	19.7	6.2	13.2

Head blunt. Six lips present, each bordered by labial rugae (see figure 2: C & D) and each possessing a single papilla. Cephalic setae are 10 in number, the longer being  $11\ \mu$  long and the shorter  $7\ \mu$  long. Head diameter at level of cephalic setae is  $26\ \mu$ . — The cuticle is punctate. There are 8 longitudinal rows of papillae and numerous somatic setae. — The stoma is cup-shaped, and is armed with a large dorsal tooth and 2 small subventral teeth. The orientation of the labial rugae to the sclerotization of the stomal wall is pictured in figure 2: C. — The amphid is a spiral of 4.5 turns located opposite the base of the stoma. Breadth of the amphid is 38 % of the corresponding body diameter. — The esophagus is cylindro-conical, having a diameter of  $20\ \mu$  at the level of the excretory pore, and  $29\ \mu$  at its base. The nerve-ring is located at about 50 % of the esophagus. The excretory pore is located at 60 % the distance from the anterior end to the nerve-ring. Body diameter at the base of the esophagus is  $62\ \mu$ . — The spicules are simple, arcuate,  $45\ \mu$  long. The lateral pieces are prominent, broad distally with moderate "dentation". No gubernaculum was observed. — A very striking feature of this species is the very large, prominent ejaculatory duct. The intestine in this region is reduced to an inconspicuous, thin tube. The supplements are 5 in number. The two nearest the anus are

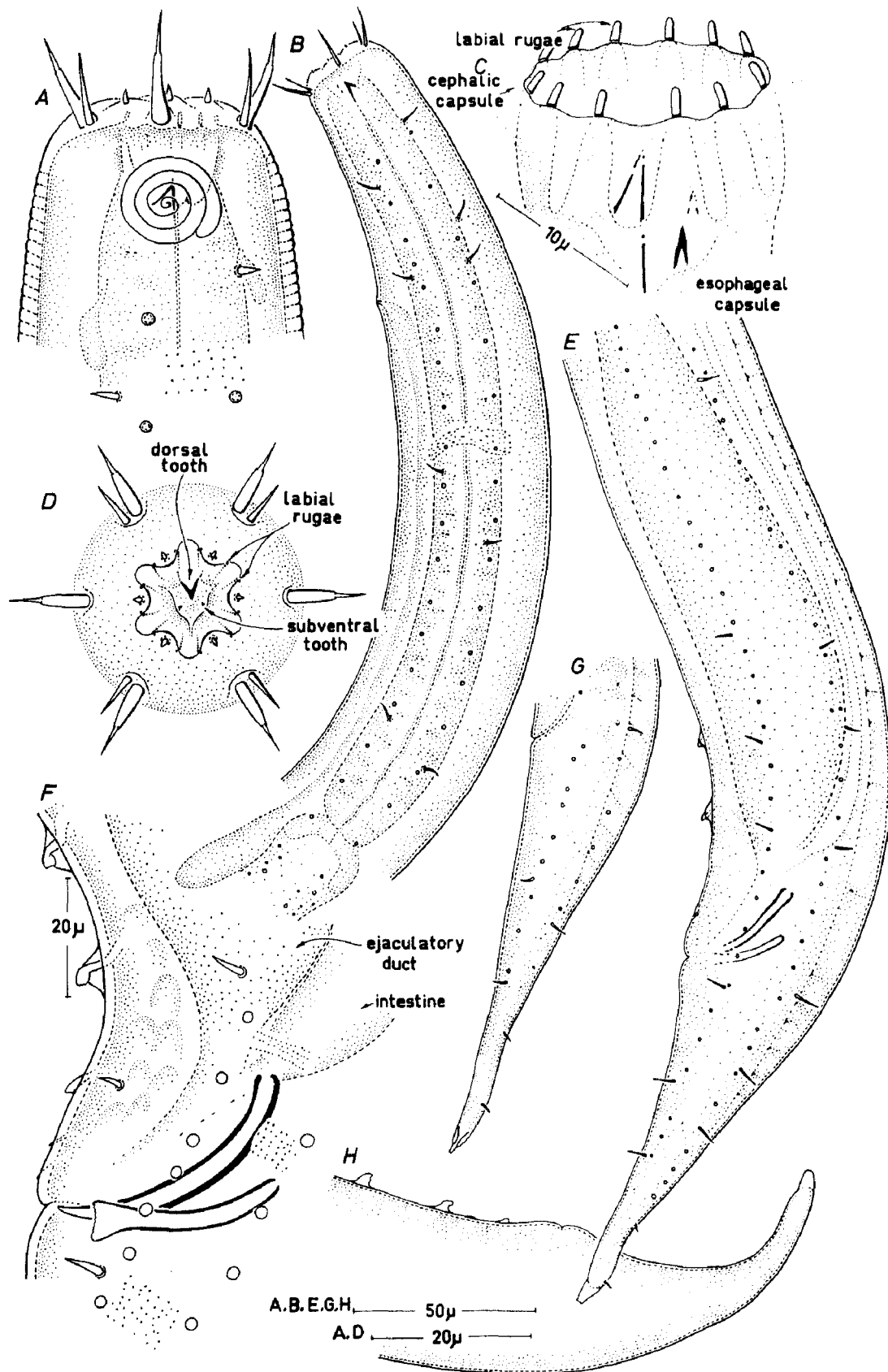


Fig. 2: *Paracyatholaimus paucipapillatus* GERLACH, 1955. A, male head. B, female anterior. C, schematic presentation of stomal walls and labial rugae. D, face view of male. E, male tail. F, male genital region. G, female tail. H, silhouette of posterior region of a male specimen.

inconspicuous tubes similar to those found in the same position in *Paracanthonus*. The third is somewhat larger and protruding. The fourth and fifth are very prominent, "S"-shaped structures embedded in a conical cuticular protrusion. — The tail is conical, 2.5 anal diameters long.

Description of female: (figure 2: G)

L (mm)	a	b	c	V (‰)	Ov1 (‰)	Ov2 (‰)
1.80	24.7	7.1	10.5	53.2	13.2	14.8
1.57	27.5	6.5	12.7	48.5	11.8	10.9
1.63	20.7	6.2	13.7	51.5	13.4	14.1
1.73	25.5	7.3	13.2	47.6	12.4	13.0

The female closely resembles the male. The ovaries are paired, reflexed. The tail is conical, 3.7 anal dimeters long.

Remarks: My specimens appear to fall within a normal variation range for the species, considering, in addition to the original description, *Paracanthonus tumepapillata* TIMM, 1957 which I consider identical, and illustrations of two unpublished finds made by Prof. Dr. S. A. GERLACH, both made from the Maldiv Islands (under Gerlach's collection numbers 120 and 196, respectively from: Addu Atoll, Island of Heratera: small, temporary lagoon, sand and detritus; and Fadifollu Atoll: lagoon, sand and detritus).

I would call attention to the very prominent ejaculatory duct, in all probability the same structure illustrated by TIMM (1957, p. 135, figure 1: b) as intestine.

Specimens studied are maintained in the author's collection under DM 133 and DM 138.

Locality: DM 133 taken from station number 6 on 31. X. 59, Estero Lenga in the middle of the estuary at high tide from a substrate of fine sand and detritus. Salinity = 17.18 ‰. Temperature = 19.1 ° C. DM 138: from samples taken from stations 10 and 12 on 5. I. 60 from a substrate high in detritus and decaying plant remains. Salinity = 38.25 ‰. Temperature = 27—38 ° C.

*Metachromadora (Chromadoropsis) pacifica* n. sp.

(Figure 3: A—F)

Description of male: (figure 3: A—D, F)

Holotype: L = 0.86 mm, a = 22.3, b = 6.7, c = 8.2

A small nematode with a finely punctate cuticle. The punctations are relatively uniform over the entire surface of the body, and are arranged in distinct lateral rows which, in mid-body region, are spaced about  $0.8\ \mu$  apart. The distance between individual punctations in the individual rows in the same region is also  $0.8\ \mu$ . The cuticle bears no lateral differentiation. Somatic setae are short. — The head is blunt, bears 12 lips, a circle of 6 small cephalic papillae, and a circle of 4 cephalic setae, the later being about  $5\ \mu$  in length. Head diameter at level of cephalic setae =  $13\ \mu$ . — The stoma, posteriorly, appears cylindrical from lateral view, although it is probably composed of 3 plates; anteriorly the stoma broadens, and is armed with a single, large dorsal tooth. No additional teeth were observed. Over-all stomal length is  $24\ \mu$ . — The amphid is a spiral of two turns,  $5.5\ \mu$  broad. The forward rim of the amphid is located about

7  $\mu$  posterior to the lips. The anterior portion of the esophagus is cylindrical; posteriorly is located a large bulb. The bulb comprises 38 % of the total esophagus length. Two pairs of glands (ventral glands) are positioned posterior to the base of the esophagus with ducts extending into the esophageal region. The smaller, subventral pair are likely the excretory glands, the larger, latero-ventral pair appear to be esophageal glands. The nerve-ring encircles the esophagus at 50 %. The excretory pore opens opposite the anterior edge of the esophageal bulb. Body diameter at base of esophagus is 35  $\mu$ . — The spicule is

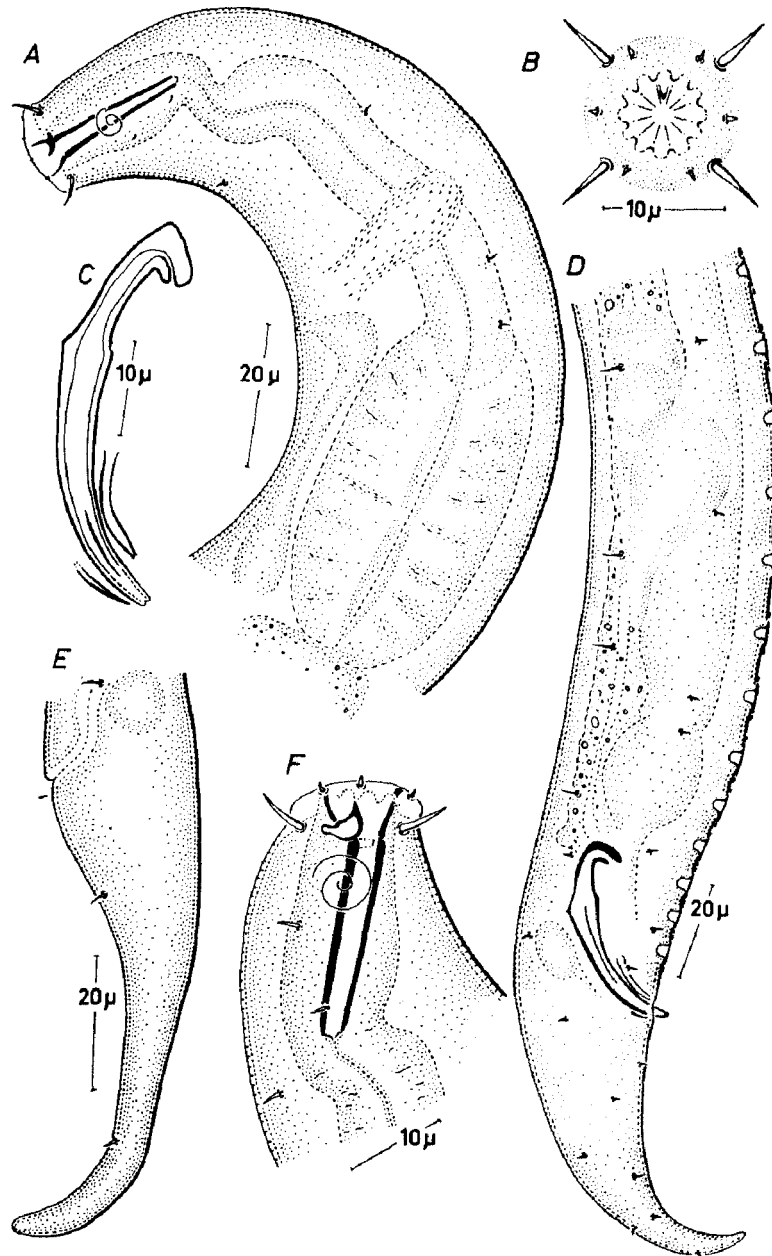


Fig. 3: *Metachromadora hartmanni* n.sp. A, male anterior. B, male face view. C, spicular apparatus of male. D, male tail. E, female tail. F, stomal region of male.

arcuate,  $43\ \mu$  long, with "shoulders" located at 65 % (figure 3: C); lateral pieces are tuboid; gubernaculum a small plate. The ejaculatory duct is large and conspicuous; at least three pairs of large ejaculatory glands lie latero-dorsal to the posterior limits of the ejaculatory duct. — A large, genital seta (the structure is even suggestive of a small, tuboid supplement) is located  $5\ \mu$  forward of the anus. Fourteen microns anterior to the anus is located the first of 22 chromadoroid (cup-shaped) ventral supplements. The anteriormost extends  $296\ \mu$  forward of the anus. — The tail is conical, 2.5 anal diameters long.

Description of female: (figure 3: E)

Allotype:  $L = 0.87\ \text{mm}$ ,  $a = 20.4$ ,  $b = 6.3$ ,  $c = 9.5$ ,  $V = 51.0\ \%$

The female closely resembles the male. The ovaries are paired, reflexed. The tail is cylindro-conical, 3.5 anal diameters long.

Remarks: *M. pacifica* is assigned most readily to the subgenus *Chromodoropsis* FILIPJEV, 1918, although the relationship to either of the species currently assigned to the genus does not appear close. From *M. quadribulba* GERLACH, 1956, it differs in possessing a 2-part or double-valved bulb vrs. a 4-part bulb; cup-shaped supplements vrs. non-cup-shaped; spicules, gubernaculum, dorsal tooth and amphid of different shape. Other than for the bulb, the above listed differences apply for *M. vivipara* (DE MAN, 1907) as well. These differences are of such fundamental nature that separation will eventually, after more related species are reported, have to be made.

Type-specimens are being temporarily maintained by the author in collection number DM 134.

Type-locality: Estero Lenga, near Concepción, Chile. Station number 7. Collected on 31. X. 59 from substrate high in detritus and plant parts with low content of fine sand.

*Microlaimus pecticauda* n. sp.

(Figure 4: A—F)

Description of male: (figure 4: A—C)

Holotype:  $L = 0.81\ \text{mm}$ ,  $a = 23.6$ ,  $b = 7.2$ ,  $c = 10.2$

Paratypes:	L (mm)	a	b	c
	0.75	30.0	6.7	7.7
	0.85	30.6	6.6	10.0

The body shape in the esophageal region is conical. The head is small, blunt and smooth: lacking annulation. The stomal opening, formed by the six lips, is triangular in shape. There are 6 small labial papillae. At the base of the head are 4 large setae of about  $13\ \mu$  in length. Body diameter at level of cephalic setae  $12\ \mu$ . — The cuticle is very prominently annulated with the exception of head and spinnerett regions. Somatic setae are long and conspicuous. There is no evidence of lateral cuticular differentiation. — The stoma is small, cup-shaped. There is a small dorsal tooth and two inconspicuous subventral teeth. The amphid lies about  $22\ \mu$  posteriad, is oval in contour: approximately  $5\ \mu$  at its greatest width. Protruding from the amphid is a tubiform structure. — The anterior 78 % of the esophagus is cylindro-conical; it terminates in a basal bulb. The nerve-ring is located at 50 % of the esophagus length. An excretory pore



was not observed. Body diameter at the base of the esophagus is  $24\ \mu$ . — The spicules are arcuate. The lateral pieces are prominent, broader distally than proximally. There is no evidence of genital papillae; however, there is a preanal cuticular "keel" of about  $3\ \mu$  width (as seen from lateral view) extending from

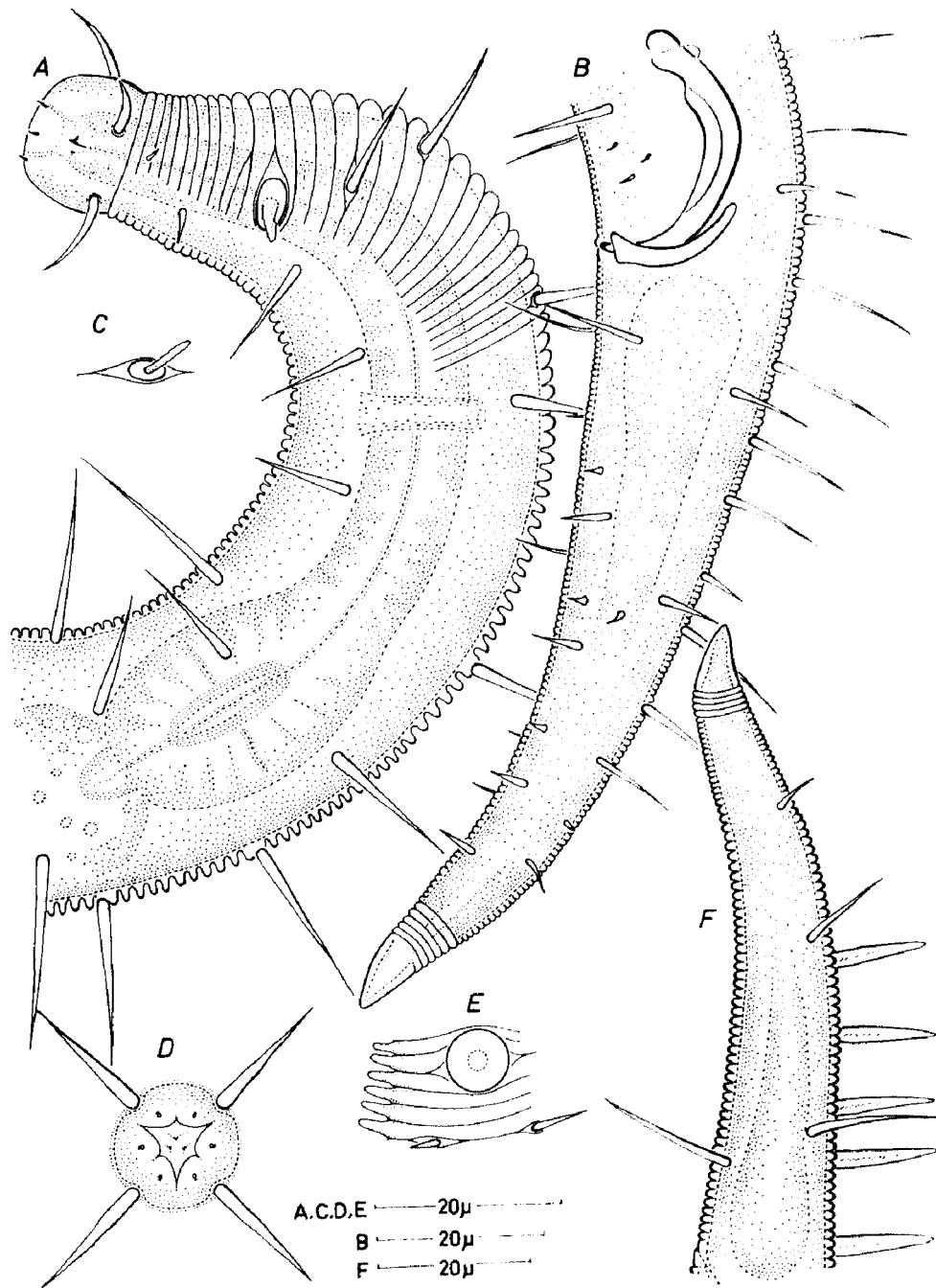


Fig. 4: *Microlaimus pecticauda* n.sp. A, male anterior. B, male tail. C, male amphid. D, female face. E, female amphidial region. F, female tail.

about  $20\ \mu$  forward of the anus to a point about  $120\ \mu$  anteriad. — The tail is conical, 4.1 anal diameters long.

Description of female: (figure 4: D—F)

Allotype:  $L = 0.75\ \text{mm}$ ,  $a = 21.9$ ,  $b = 6.5$ ,  $c = 9.3$ ,  $V = 52.7\ \%$

Paratypes:	L (mm)	a	b	c	V (%)
	0.83	24.4	8.5	10.6	50.9
	0.71	21.5	6.3	8.8	52.2
	0.75	24.7	6.5	9.5	54.6

The ovaries are paired, reflexed. Most striking on the female is the dorsal row of caudal setae which are very broad, tooth-like structures. These are about 12 in number, extending anteriorly to a region forward of the tail, gradually taking on the form of the remaining somatic setae. — The tail is conical, 4.9 anal diameters long.

Remarks: The new species has no close relative in here-to-fore described forms. Attention should be called to *M. spinosus* GERLACH, 1957 (female only known!) which has some similarity in setation and annulation.

*M. pecticauda* is distinguished from all previously described species by the presence of "comb"- or "thorn-like" dorsal setae in the caudal region of the female, and by a combination of very coarse annulation and long, stout somatic setae. Amphid structure, as well, appears to be unique. The stoma is not characteristic for the genus in that it lacks the prominent sclerotization of the walls and shows no structure posterior to the level of the teeth, at which point only the esophageal lumen is to be recognized.

Type-specimens are being temporarily maintained by the author in collection number DM 132.

Type-locality: Bay of San Vicente, near Concepción, Chile: near the mouth of Estero Lenga. Collected on 24. IX. 59 from a eulittoral substrate of medium to coarse sand with gravel.

*Leptolaimus gerlachi* n. sp.

(Figure 5: A—E)

Description of male: (figure 5: A & D)

Holotype:  $L = 0.78\ \text{mm}$ ,  $a = 27.8$ ,  $b = 5.0$ ,  $c = 7.6$

Paratype:  $L = 0.84\ \text{mm}$ ,  $a = 28.0$ ,  $b = 5.4$ ,  $c = 7.6$

A small nematode with thick, prominently annulated cuticle. Annulation extends from cephalic setae to  $8.8\ \mu$  forward of the tail terminus; breadth of the annules immediately posterior to the head is  $1.5\ \mu$ ; at mid-body region,  $2.5\ \mu$ ; at mid-tail,  $1.7\ \mu$ . Lateral lines faint, extending from mid-cervical region to level of anteriormost supplement. Head rounded, lip-region slightly set-off by faint striation; six rounded lips, each bearing a minute papilla. Cephalic setae 4:  $2.8\ \mu$  long. A limited number of short setae present in cervical, mid-body, and tail regions. — The stoma is cylindrical with exception of anteriormost portion which is flared; encompassed for the greater part by esophageal tissue. No evidence of stomal armament was to be seen. Stomal length =  $18\ \mu$ . — The amphid is a broken circle of  $3.3\ \mu$  in diameter. The forward edge lies  $11\ \mu$  posteriad. — The esophagus is cylindrical over its greater length, the terminus is a bulb of

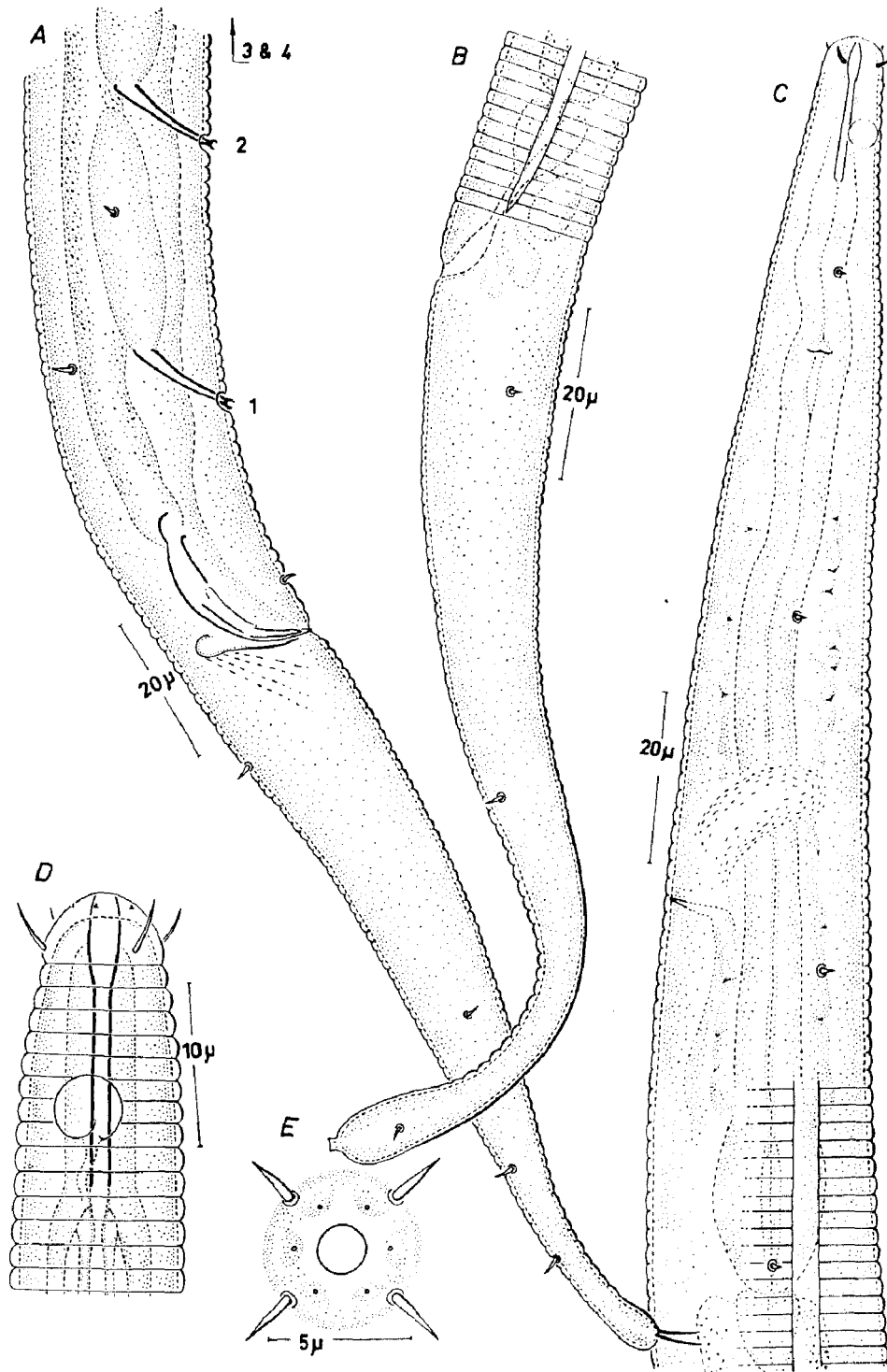


Fig. 5: *Leptolaimus gerlachi* n.sp. A, male posterior. B, female tail. C, female anterior. D, male head. E, male face.

22  $\mu$  by 14  $\mu$ . The esophageal glands empty into the lumen of the esophagus just posterior to the stoma. Forty-three microns posterior is located a small valve-like apparatus accompanied by a broadening of the esophageal lumen and a "break" in esophageal musculature. The central portion of the esophagus is surrounded by numerous cells. The nerve-ring is located at 57% of the esophagus. The excretory pore exists immediately posterior to the level of the nerve-ring. An elongate cardia is present: 9  $\mu$  long by 6  $\mu$  in diameter; the base of the cardia is surrounded by intestinal tissue. — The spicules are arcuate, weakly sclerotized: 28  $\mu$  long. The gubernaculum is also faint; rounded proximally; 13  $\mu$  long. There are four, very prominent tuboid supplements; the posteriormost is 36  $\mu$  from the anus; the interval between the supplements, proceeding anteriorly, are 36  $\mu$ , 26  $\mu$ , and 24  $\mu$ . The supplements are 17  $\mu$  long, slightly conical in shape; the distal end appears bifurcate in lateral view. A prominent, ventral papilla lies immediately anterior to the anus. — The tail is cylindro-conoid, with slight terminal enlargement; 6 anal diameters long. Two, long, ventrally directed setae are located terminally.

Description of female: (figure 5: B, C, E)

Allotype: L = 0.76 mm, a = 22.4, b = 5.5, c = 6.9, V = 50%, Ov 1 = 18.5%, Ov 2 = 16.5%

Paratype: L = 0.84 mm, a = 22.0, b = 5.7, c = 6.8, V = 49%, Ov 1 = 18.0%, Ov 2 = 12.0%

The female is quite similar to the male, although generally broader. — The lateral lines are relatively distinct extending from the level of the nerve-ring to that of the anus. Body diameter at base of esophagus is 29  $\mu$ , at level of vulva 30  $\mu$ , and at level of anus 16  $\mu$ . — The ovaries are paired, opposed, and reflexed. — The tail is cylindro-conoid with terminal swelling: 7.2 anal diameters long.

Remarks: *L. gerlachi* bears a close resemblance to *L. preclarus* TIMM, 1961 from which it is differentiated by possessing a shorter stoma, a smaller dorsal apophysis on the gubernaculum, and a much more coarsely striated cuticle.

Type-specimens are being temporarily maintained by the author under collection number DM 130.

Type-locality: Taken from station number 4 on the Estero Lenga near Concepción, Chile on 3. IX. 59 from a substrate of fine sand and muck high in detritus and rotting algae. H<sub>2</sub>S present in low quantities. Salinity = 27.25‰. Temperature = 11.5° C.

*Eleutherolaimus obtusicaudatus* ALLGEN, 1947

(Figure 6: A—F)

Description of male: (figure 6: A—D)

L (mm)	a	b	c
4.07	111.0	16.8	23.8
3.10	87.4	14.5	21.7
4.37	102.0	14.9	25.5
4.02	94.0	17.3	23.5

A long nematode, almost always tightly curled when fixed. The head is blunt. Immediately encircling the stoma is a circle of 6 very small labial

papillae. These are surrounded by a circle of 6 larger cephalic papillae. Cephalic setae are in 2 circles of 4 each. — The cuticle is smooth, bearing no indication of striae. Setae are most abundant in cervical and caudal regions. There is a faint indication of lateral lines. — The stoma is more or less cylindrical, with anterior, central, and posterior differentiation of the stomal wall sclerotization (figure 6: C). The amphid is circular, about  $6\mu$  in diameter, and located

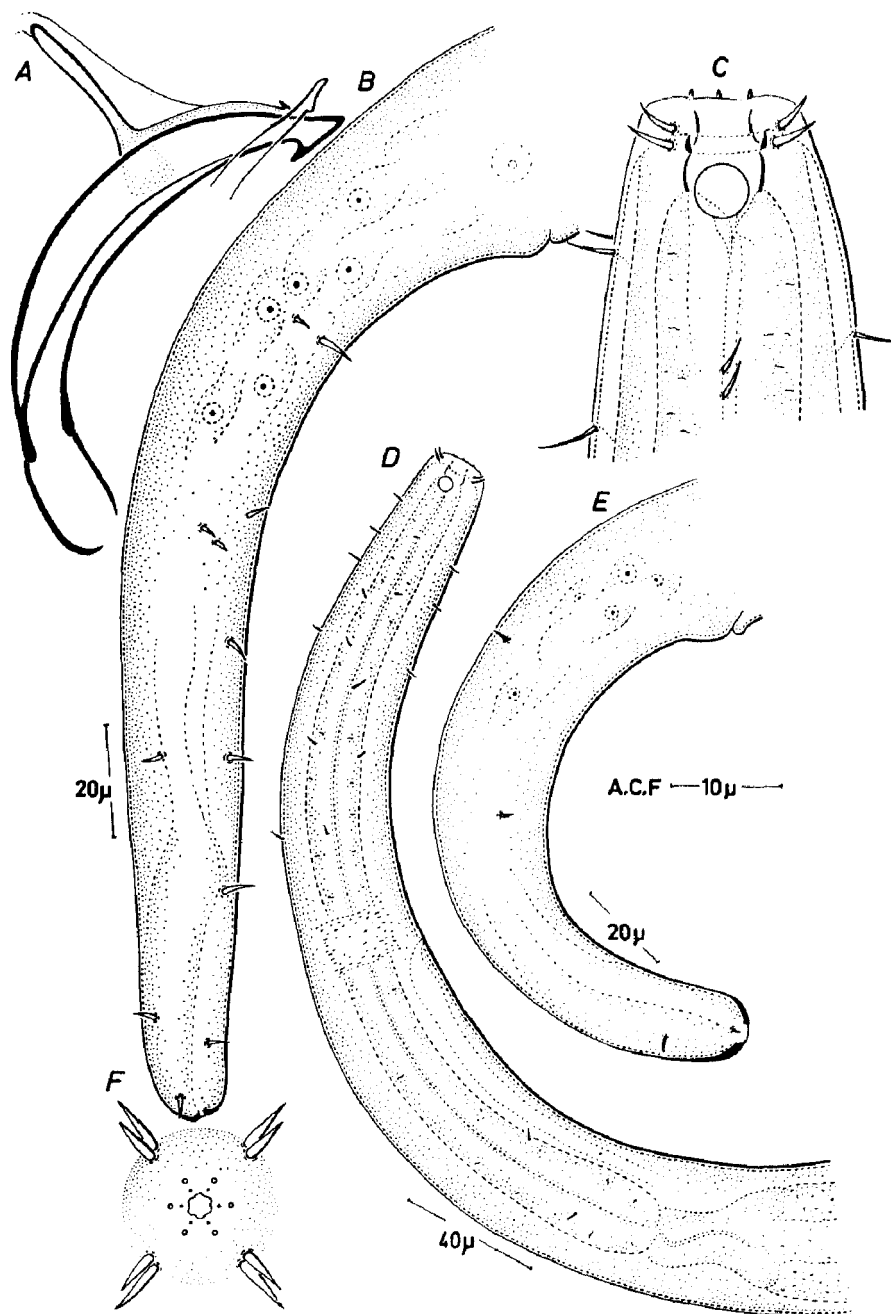


Fig. 6: *Eleuthrolaimus obtusicaudatus* ALLGEN, 1947. A, male spicular apparatus. B, male tail. C, male head. D, male anterior. E, female tail. F, female face.

opposite the base of the stoma. — The esophagus is cylindro-conical, with large basal swelling. The nerve-ring is located at 50 %, and the excretory pore exists immediately posterior to the level of the nerve-ring. A large, prominent cardia is present. — The spicules are arcuate, "barbed" distally. The lateral piece is small: foot-like distally. The gubernaculum bears a prominent apophysis. — The tail is cylindro-conical, 5.5 anal diameters long; blunt terminally.

Description of female: (figure 6: E & F)

L = 4.59 mm, a = 107.0, b = 17.8, c = 28.3, V = 61.5 %

The female closely resembles the male. Measurements of more than a single female were not possible because of the knotted condition of the fixed material. — The tail is cylindro-conoid, 5.2 anal diameters long.

Remarks: My specimens pass well to descriptions of *E. obtusicaudatus*. The species is previously reported from Chilean waters by WIESER, 1956. I would call attention to the inner circle of labial papillae, previously over-looked, and the structure of the lateral-piece of the male, also given for the first time. Lateral striae are not evident in my specimens, contrary to earlier reports.

Specimens are maintained by the author in collection number DM 128.

Locality: near station number 2: Estero Lenga, near Concepción, Chile: from a protected area in the eulittoral zone from a substrate of fine sand and muck on 3. IX. 59. Salinity = 23.87 ‰. Temperature = 12.3 ° C.

*Odontophora pacifica chiliensis* n. subsp.

(Figure 7: A—H)

Description of male: (figure 7: A—C, F, H)

Holotype: L = 1.25 mm, a = 32.2, b = 7.5, c = 7.5

Paratypes:	L (mm)	a	b	c
	1.40	31.0	9.3	7.1
	1.27	35.9	7.1	6.7
	1.18	32.2	7.7	6.8

Body narrows gradually in the anterior region. The head is provided with a single circle of small labial papillae, and a circle of 4 cephalic setae of about 5  $\mu$  in length. — The cuticle is very finely striated, the striae being most noticeable in the tail region. The somatic setae are short. — The stoma is cylindrical, the anterior portion is extrusible. This latter, extrusible portion is composed of 6 elements, each of which bears 2 claw-like projections, one lying over the other (see figure 7: E & G). — The amphid bears the typical shepherd's crook form, and is about equal to the stoma in length (figure 7: F). — The esophagus is cylindrical anteriorly, swollen posteriorly. The nerve-ring is located at 59 %. The excretory pore opens at the level of the cephalic setae. — The spicules are sickle-shaped, broad, about 80  $\mu$  long. No lateral pieces were observed. The gubernaculum is weakly developed, bears an inconspicuous dorsal apophysis. — About 15 preanal supplements are present, some being more conspicuous than others; they extend about 300  $\mu$  anteriorly. There is also a row of about 4 postanal genital papillae. — The tail is cylindro-conoid, 5.7 anal diameters long.

Description of female: (figure 7: D, E, G)

Allotype:  $L = 1.38$  mm,  $a = 32.0$ ,  $b = 8.1$ ,  $c = 7.1$ ,  $V = 47.6\%$

Paratypes:	L (mm)	a	b	c	V (%)
	1.49	30.1	8.8	7.4	49.3
	1.32	29.2	7.8	7.4	50.6
	1.55	34.3	8.9	7.3	48.9

The female closely resembles the male. The tail is cylindro-conoid, 6.8 anal diameters long.

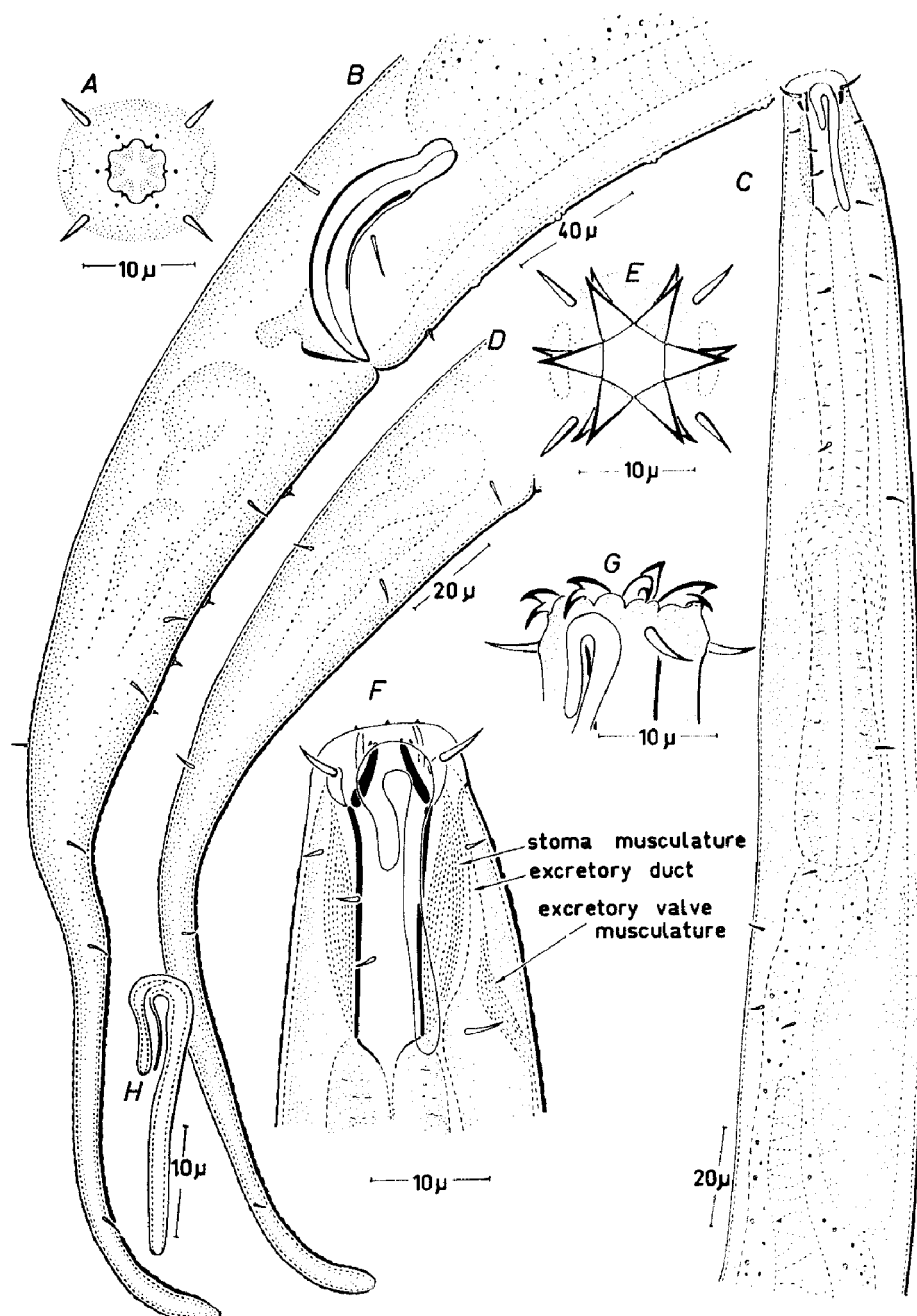


Fig. 7: *Odontophora pacifica chiliensis* n. subsp. A, male face. B, male posterior. C, male anterior. D, female tail. E, female face, stoma extended. F, male head. G, female head, stoma extended. H, male amphid.

**Remarks:** To *Odontophora pacifica* ALLGEN, 1947, GERLACH (1962) synonymized *O. quadristicha* STEKHOVEN, 1950, *Pseudolella brevamphida* TIMM, 1952, *P. paragranulifera* TIMM, 1952, *P. cobbi* TIMM, 1952, *P. polita* GERLACH, 1955, *Areolaimus bioculatus* (DE MAN, 1876). This grouping, in general, appears accurate; however, in-as-much as some descriptions are very wanting in detail it is difficult to work with. My species appears to conform in most respects to this *O. pacifica* concept, (assuming that the actual structure of the stomal armature has been over-looked in the past: see description above); however, the prominence of the genital papillae and supplements on the male, reported for no other species, demands taxonomic distinction, which I choose to leave at the subspecies level.

Type-specimens are being temporarily maintained by the author in collection number DM 134.

Type-locality: Station number 7, Estero Lengua near Concepción, Chile. Collected from muck with low content of fine sand, high content of detritus and decaying plant parts; on 31. X. 59. Salinity = 6.35 ‰. Temperature = 20.8 ° C.

*Theristus resinus* WIESER, 1959

(Figure 8: A—F)

Description of male: (figure 8: A, C—F)

L (mm)	a	b	c
0.97	22.6	4.2	6.2
0.86	21.2	4.4	6.3

Head with circle of 6 labial papillae followed by a circle of 12 cephalic setae, the longest of which are 14  $\mu$  long. Head diameter at the level of the cephalic setae is 17  $\mu$ . — The cuticle is striated laterally and possesses numerous short setae in all body regions. — The stoma is cup-shaped; esophagus cylindrical, broadening slightly posteriorly. The nerve-ring is located at 45 % of the esophagus, the excretory pore opens midway between the head and the nerve-ring. The amphid is circular, 50 % of the corresponding head diameter in width. Body diameter at the base of the esophagus is 36  $\mu$ . — The spicules are arcuate, foot-like distally. The lateral-piece is quite broad. The gubernaculum, over its greater length, is thin and lies close to the spicules; a prominent, circular dorsal apophysis lies over each spicule. — Three gland cells (figure 8: A; gland?), unassociated with either the ejaculatory or caudal glands, were noted in the male only. — The tail is conical, 4.3 anal diameters long.

Description of female: (figure 8: B)

L (mm)	a	b	c	V (%)
1.09	20.9	4.3	6.6	67.9
1.17	19.4	4.4	6.4	65.3
1.09	18.2	4.1	6.6	69.3
1.27	18.4	4.2	6.3	65.6

Although in general slightly larger, the female closely resembles the male. The tail is conical, 4.9 anal diameters long.

**Remarks:** My specimens conform reasonably well to Wieser's description from Puget Sound, Washington. The lateral-piece is broader distally, the amphid



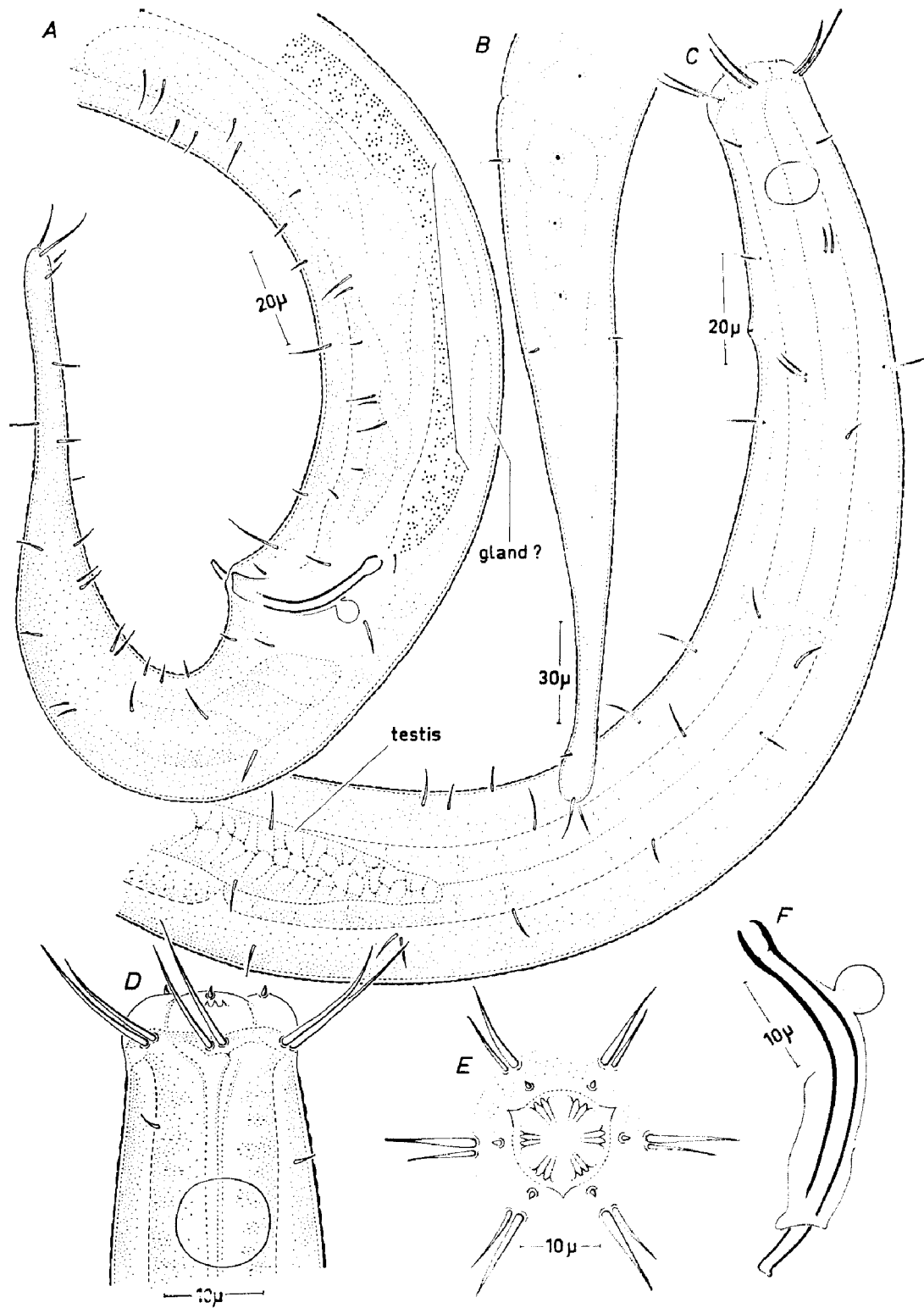


Fig. 8: *Theristus resinus* WIESER, 1959. A, male posterior. B, female tail. C, male anterior. D, male head. E, male face. F, male spicular apparatus.

larger, and the dorsal apophysis of the gubernaculum more spheroid than by Wieser's description. The position of the excretory pore is given for the first time.

Specimens are maintained by the author in collection number DM 129.

Locality: collected from the Estero Lenga near Concepción, Chile on 3. IX. 59 from fine sand with muck and a thin detritus layer: opposite station 2.

*Theristus flevensis* STEKHOVEN, 1935

(Figure 9: A—G)

Description of male: (figure 9: A—C, E, G)

L (mm)	a	b	c
1.92	55.1	6.8	7.7
2.03	53.4	7.2	8.1
1.90	50.0	6.5	8.0

Head with circle of 6 labial papillae and 14 cephalic setae. The cuticle bears fine lateral striae and numerous fine setae. The stoma is cup-shaped or conical. The esophagus is cylindrical, slightly broader at the base than anteriorly. The nerve-ring is at 45 % of the esophagus; the excretory pore was not observed. —

The spicules are arcuate; lateral pieces are conspicuous, claw-shaped; the gubernaculum is thin, inconspicuous. — The tail is cylindro-conoid, 7.2 anal diameters long.

Description of female: (figure 9: D, F)

L (mm)	a	b	c	V (4)
2.15	41.0	7.7	8.9	67.2
2.05	39.0	6.9	8.8	67.5
2.12	42.4	7.3	8.9	70.0

Similar to male. Tail cylindro-conoid, 8.7 anal diameters long.

Remarks: My specimens pass well within the limits of variation attributed to *T. flevensis*. Of the three species which were compared by MURPHY and CANARIS (1965), *T. flevensis* is most closely related to *T. metaflevensis* GERLACH, 1955 on the basis of spicular structure.

Locality and collection data are as for *Paracyatholaimus paucipapillatus* (see above).

*Steineria chiliensis* n. sp.

(Figure 10: A—F)

Description of male: (figure 10: A, B, D—F)

Holotype: L = 1.28 mm, a = 19.9, b = 5.9, c = 7.3

For arrangement and relative lengths of labial papillae, cephalic setae and subcephalic setae the reader is referred to figure 10. I would call attention to the pattern of 8 ridges per lip (figure 1: B) as compared with the normal 3 per lip for *Theristus* species (figures 8: E and 9: C). — The cuticle is finely striated, covered with numerous setae arranged in 8 longitudinal rows. Two fine, but distinct, lateral lines are present. The amphid is circular, 9.5  $\mu$  in diameter, and

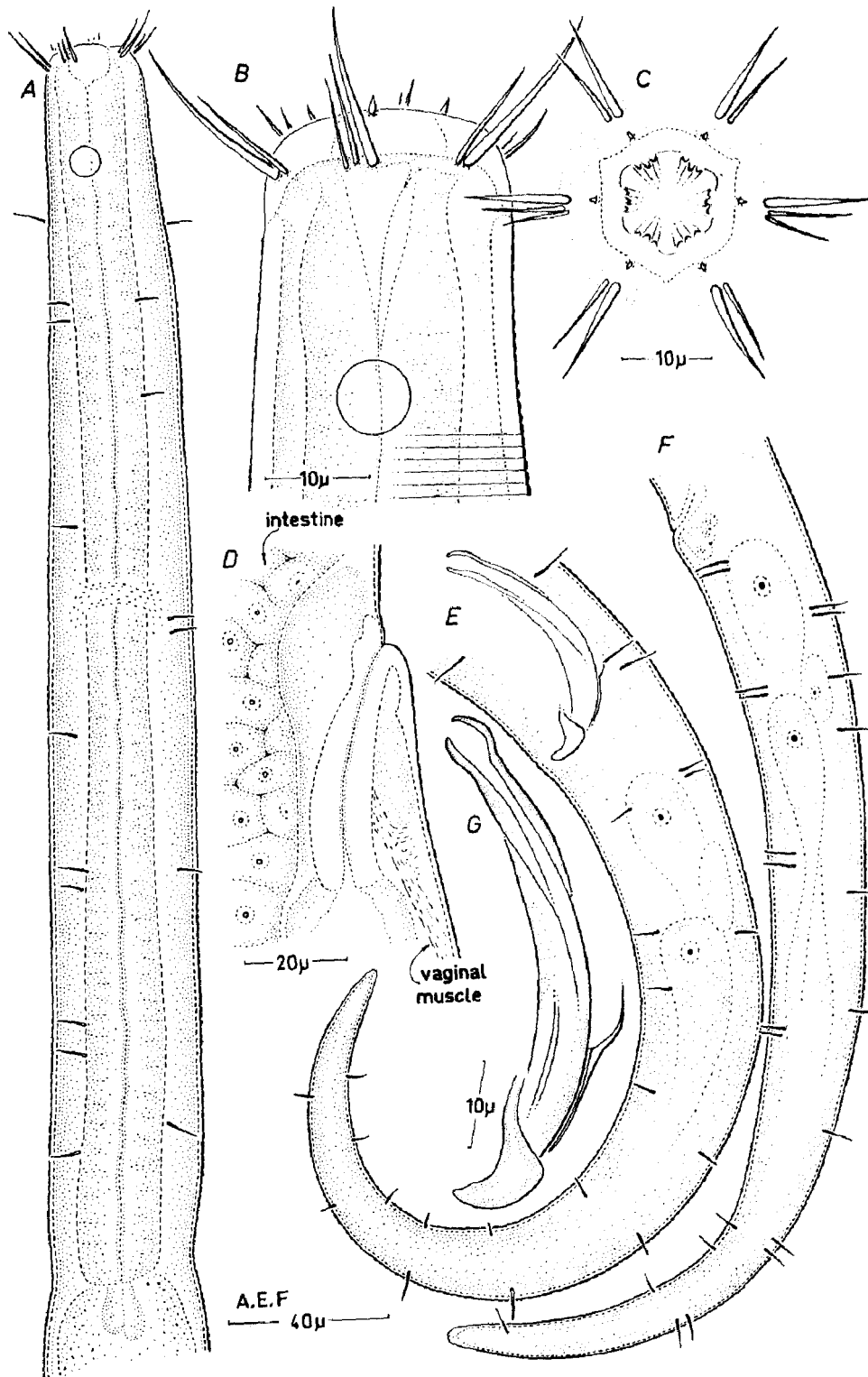


Fig. 9: *Theristus flevensis* STEKHOVEN, 1935. A, male anterior. B, male head. C, male face. D, female vulvular region. E, male tail. F, female tail. G, male spicular apparatus.

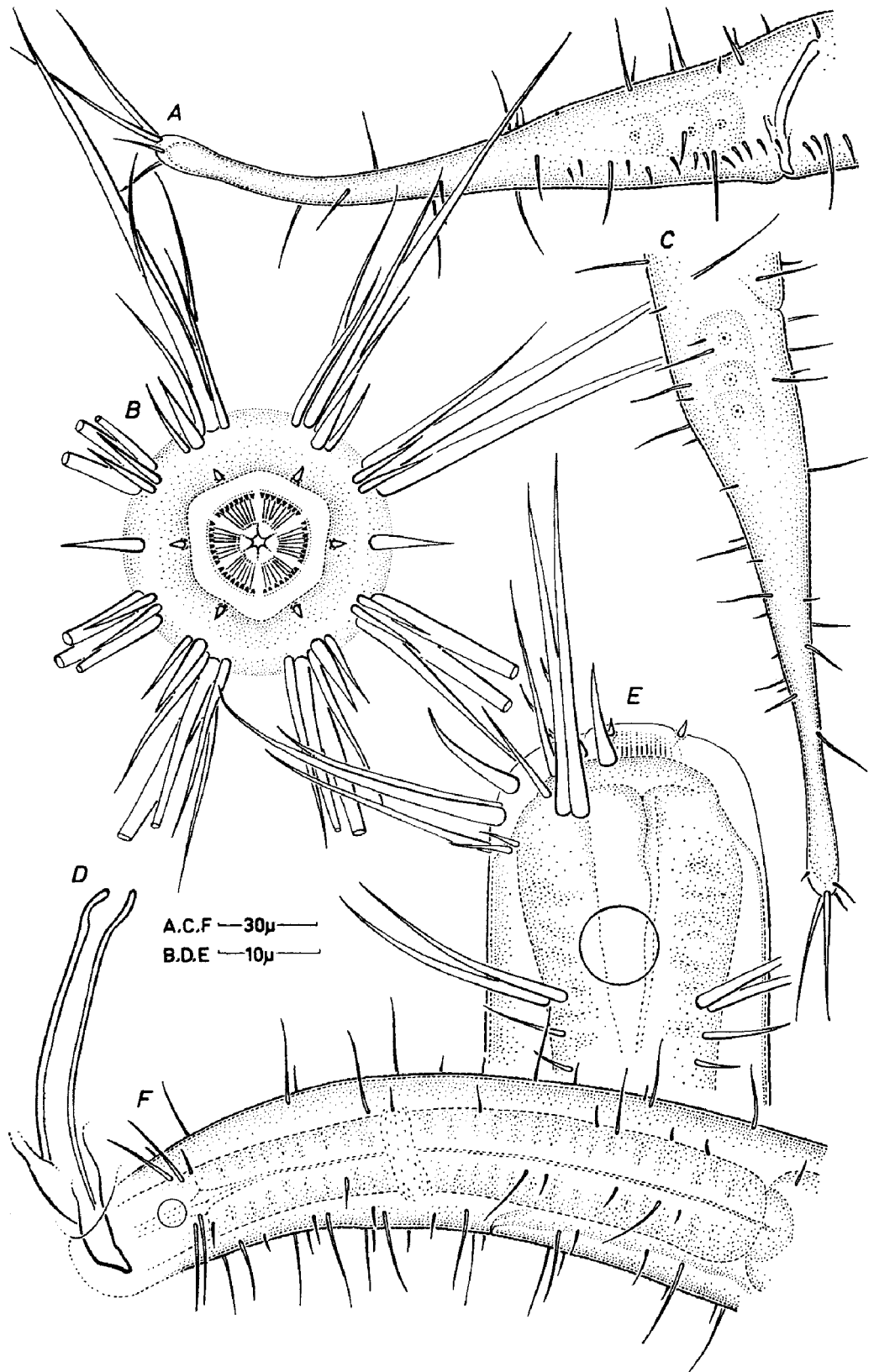


Fig. 10: *Steineria chiliensis* n.sp. A, male tail. B, male face C, female tail. D, male spicular apparatus. E, male head. F, male anterior.

is located opposite the base of the stoma;  $27.5\ \mu$  from the anterior end to the leading edge of the amphid. The body diameter at the level of the amphid is  $33\ \mu$ . — The esophagus is cylindrical, slightly broader posteriorly. The nerve-ring is located at 50 % of the esophagus, the excretory pore opens at 61 %. Body diameter at the base of the esophagus is  $55\ \mu$ . — The spicules are arcuate, about  $45\ \mu$  long. Details of the lateral-piece and gubernaculum are given in figure 10: D. The ejaculatory glands are positioned laterally and extend about  $150\ \mu$  anterior of the anus. — The tail is conical, slightly swollen at terminus: 4.4 anal diameters long.

Description of female: (figure 10: C)

Allotype:  $L = 1.12\ \text{mm}$ ,  $a = 19.1$ ,  $b = 5.7$ ,  $c = 6.9$ ,  $V = 55.4\ \%$

Paratype:  $L = 1.57\ \text{mm}$ ,  $a = 22.1$ ,  $b = 5.8$ ,  $c = 7.4$ ,  $V = 58.8\ \%$

No sexual dimorphism noted. Tail 5 anal diameters long. Ovary single.

Remarks: *S. chiliensis* is most closely related to *S. cobbi* WIESER, 1956, also described from Chile. Regrettably Wieser described his species on the basis of juvenile specimens. The differences between the two species are of a magnitude greater than can be attributed to species variation; however, little is known of the variations to be encountered in the course of the development of the individual through the various moults to maturity. My species differs in that the amphid is located in a more forward position, plus primary differences in cephalic setation: in *S. chiliensis* I recognize 6 labial papillae and 10 cephalic setae, as did WIESER in *S. cobbi*. The sublateral groups (of which there are 4) have a total of 5 setae (7 setae if the 2 small setae at the base of the grouping are included in the count: these 2 setae are homologous with those depicted by WIESER in *S. cobbi* as lying between the amphid and the head) vrs. 2 in *S. cobbi*. The submedian groups (2 subdorsal, 2 subventral) have 5 setae per grouping as well, vrs. the single submedian setae of *S. cobbi*.

Type specimens are being temporarily maintained by the author in collection number DM 129.

Type-locality is the same as that given above for *Theristus resinus*.

Acknowledgments: I would like to express appreciation to Prof. Dr. K. KOSWIG, director of this institute in which I have been working as a guest for the past two years, and to Prof. Dr. S. A. GERLACH, who has given to me so generously of his time and thoughts during the same period.

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