

SPIONIDAE AND OPHELIIDAE (ANNELIDA: POLYCHAETA) FROM THE WESTERN COAST OF BAJA CALIFORNIA, MEXICO

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ABSTRACT

Fourteen species of spionid polychaetes are reported from the continental slope of the western coast of Baja California Peninsula. *Paraprionospio pinnata*, *Prionospio (Minuspio) cirrifer*, *P. (M.) delta*, *P. (Prionospio) steenstrupi*, *Scolelepis squamata*, *Spio pacifica*, and *Spiophanes missionensis* are reported for first time from Baja California Sur; *P. (Aquilaspio) aucklandica* and *P. (P.) queenslandica* are new records for American waters. A new species of the opheliid genus *Travisia* is described.

Some studies of the polychaete fauna from continental slope of the western coast of Baja California Peninsula have recently been conducted (de León-González 1990a,b, 1991, 1992, 1994, de León-González and Góngora Garza 1992). In this paper 14 species of spionid polychaetes are mentioned, six of them are reported for the first time from Baja California Sur, and two species are new records for American waters. Moreover a new species of opheliid polychaete is described.

The specimens were collected during seven oceanographic cruises, from 1987 to 1990 (Table 1), on board the B/O EL PUMA using a Smith-McIntyre dredge (0.1m²). The specimens are in the collections of the Facultad de Ciencias Biológicas, Universidad Autónoma de Nuevo León, México (UANL).

Spionidae Grube 1850
Paraprionospio Caullery 1914
Paraprionospio pinnata (Ehlers 1901)

Paraprionospio pinnata: Foster 1971: 102, figs. 237-246 (Synonymy); Fauchald 1972: 188; Blake and Kudenov 1978: 209; Maciolek 1985: 372.

Material examined.—1914 specimens: UANL 0435-0514.

Distribution.—Cosmopolitan. In the Atlantic it is known from Chesapeake Bay to Florida, Gulf of Mexico, Caribbean Sea, Morocco to South Africa; Indian Ocean; Pacific Ocean: New Zealand, Japan, western coast of Canada to Chile. In Mexico this species has been reported from Baja California and Sinaloa; this is the first record for Baja California Sur.

Prionospio Malmgren 1867
Prionospio (Aquilaspio) aucklandica (Augener 1923)

Aquilaspio aucklandica Foster 1971: 105; Hutchings and Rainer 1979: 763; Hutchings and Turvey 1984: 8.

Prionospio (Aquilaspio) aucklandica Blake and Kudenov 1978: 221, fig. 25b-g.

Prionospio krusadensis Fauvel 1953: 236 (*vide* Foster 1971).

Material examined.—3 specimens: UANL 0515-0516.

Diagnosis.—Prostomium rounded, with three small distal projections. Caruncle thin through setiger 2. Two pairs of eyes in trapezoidal arrangement, the posterior ones larger. Three pairs of pinnate branchiae on setigers 2 to 4. Multidentate hooded hooks start on neuropodium of setiger 16, in the notopodium appear on setiger 30; these hooks have 4-5 rows of apical thin teeth, with a basal one.

Table 1. Sedimentological and location data of sampling stations. (a) Station number; (b) Latitude (N); (c) Longitude (W); (d) Depth (m); (e) Sand (%); (f) Silt (%); (g) Clay (%); (h) Organic matter; (i) Temperature (°C); (j) Date.

a	b	c	d	e	f	g	h	i	j
A-1	24°14.2'	11°34.9'	105	—	—	—	—	—	08/07/87
A-2	24°16.0'	111°34.9'	150	—	—	—	—	—	08/07/87
A-3	24°18.2'	111°32.3'	72	—	—	—	—	—	09/07/87
A-5	25°57.0'	112°53.5'	110	—	—	—	—	—	09/07/87
A-6	26°01.0'	112°50.6'	95	—	—	—	—	—	09/07/87
A-7	26°08.6'	112°44.8'	73	—	—	—	—	—	09/07/87
A-8	26°11.0'	112°54.2'	55	—	—	—	—	—	09/07/87
A-9	26°06.0'	112°34.0'	65	—	—	—	—	—	13/07/87
A-10	24°11.4'	111°23.5'	74	—	—	—	—	—	17/07/87
A-11	22°52.1'	111°00.9'	100	—	—	—	—	—	18/07/87
B-1	24°13.3'	111°31.9'	120	77.24	16.61	6.14	—	—	07/10/87
B-2	24°14.2'	111°31.8'	107	52.37	39.31	8.31	—	—	07/10/87
B-3	24°15.0'	111°32.2'	100	52.83	41.75	5.4	—	—	07/10/87
B-4	24°17.9'	111°33.5'	72	29.79	61.03	9.17	—	—	07/10/87
B-5	25°49.8'	113°01.6'	180	76.97	19.84	3.17	—	—	08/10/87
B-7	25°53.8'	112°57.9'	117	66.32	28.41	5.25	—	—	08/10/87
B-8	25°54.7'	112°51.9'	110	71.53	24.82	3.64	—	—	08/10/87
B-9	26°00.9'	112°51.1'	96	61.54	32.6	5.85	—	—	08/10/87
B-10	26°08.6'	112°44.3'	74	81.12	15.71	3.16	—	—	08/07/87
B-11	25°08.5'	112°34.4'	220	32.54	60.51	6.93	—	—	17/10/87
B-12	25°10.2'	112°16.1'	52	72.72	24.27	3.0	—	—	17/10/87
B-13	25°11.7'	112°25.1'	100	76.97	19.84	3.17	—	—	17/10/87
B-14	25°11.9'	112°31.4'	150	74.01	22.03	3.91	—	—	17/10/87
B-15	25°12.1'	112°16.1'	46	81.71	15.49	2.78	—	—	17/10/87
B-16	25°35.9'	112°17.4'	70	12.82	75.37	11.8	—	—	17/10/87
B-17	25°38.3'	112°18.6'	65	15.38	77.55	7.06	—	—	17/10/87
B-18	26°03.2'	112°33.8'	65	46.36	47.84	5.78	—	—	17/10/87
B-19	24°39.5'	112°19.5'	104	76.43	19.18	4.38	—	—	18/10/87
B-20	24°15.8'	111°49.9'	101	71.33	24.19	4.47	—	—	18/10/87
B-21	24°17.4'	111°52.0'	97	73.96	22.2	3.83	—	—	18/10/87
B-23	22°55.1'	110°03.4'	101	80.06	19.94	3.38	—	—	19/10/87
B-24	22°52.8'	110°02.1'	118	82.57	13.78	3.62	—	—	19/10/87
C-1	23°30.9'	110°36.4'	92	67.02	25.14	7.84	19	—	25/07/88
C-3	24°16.1'	111°35.0'	107	39.18	53.33	7.49	15	—	25/07/88
C-4	24°16.9'	111°23.6'	75	—	—	—	19	—	25/07/88
C-5	24°09.3'	111°56.1'	126	45.94	48.63	5.43	15	—	26/07/88
C-6	24°09.9'	111°55.8'	137	82.81	17.19	1.82	16	—	26/07/88
C-7	24°11.5'	111°59.3'	165	62.18	37.04	0.78	15	—	26/07/88
C-8	24°14.0'	111°41.8'	95	70.92	23.22	5.8	16	—	26/07/88
C-9	24°14.1'	111°34.4'	146	—	—	—	15	—	26/07/88
C-10	24°15.7'	111°50.2'	95	77.21	18.31	4.46	15	—	26/07/88
C-11	24°17.3'	111°52.1'	100	71.89	23.23	4.87	15	—	26/07/88
C-12	24°19.1'	111°54.5'	105	58.86	36.74	4.41	15	—	26/07/88
C-13	26°07.0'	112°27.9'	79	32.96	61.81	5.2	15	—	01/08/88
C-14	26°08.6'	112°50.3'	76	32.16	60.1	6.05	15	—	01/08/88
C-15	26°11.1'	112°34.0'	57	48.59	51.01	3.34	17	—	01/08/88
C-16	26°11.6'	112°36.1'	56	45.56	48.26	6.1	15	—	01/08/88
C-17	25°08.6'	112°33.3'	200	43.24	51.99	4.77	—	—	02/08/88
C-18	25°12.1'	112°16.3'	57	56.55	43.31	5.5	16	—	02/08/88
D-2	22°55.1'	110°03.5'	95	—	—	—	17	—	03/10/88
D-3	23°29.1'	110°34.4'	112	—	—	—	16	—	03/10/88
D-4	24°14.1'	111°34.6'	140	—	—	—	15	—	04/10/88
D-5	24°15.7'	111°32.2'	90	42.59	48.85	8.56	15	2.48	04/10/88
D-6	24°15.1'	111°47.1'	94	—	—	—	15	—	05/10/88
D-8	24°14.1'	112°00.3'	160	—	—	—	16	—	04/10/88

Table 1. Continued

a	b	c	d	e	f	g	h	i	j
D-10	24°16.6'	111°49.6'	90	47.96	38.69	7.1	15	2.85	05/10/88
D-11	24°16.8'	111°53.4'	100	38.46	54.22	7.31	15	—	05/10/88
D-12	24°35.9'	112°18.4'	122	52.79	38.54	8.69	14	2.67	05/10/88
D-13	25°10.5'	112°34.5'	210	36.02	53.11	10.87	13	3.54	06/10/88
D-15	25°09.5'	112°24.3'	110	54.07	38.28	7.65	16	3.59	06/10/88
D-16	25°07.9'	112°16.5'	60	44.45	48.41	7.15	17	2.76	06/10/88
D-17	25°14.4'	112°15.6'	52	47.82	45.32	6.56	18	3.06	07/10/88
D-19	25°31.7'	112°14.8'	40	24.99	68.67	6.23	18	3.41	07/10/88
D-20	25°36.6'	112°21.7'	80	10.69	70.23	10.99	16	4.02	07/10/88
D-24	25°56.13'	112°59.4'	119	58.58	35.66	4.1	15	2.96	08/10/88
D-27	26°08.35'	112°41.5'	68	37.22	56.0	6.68	17	4.33	08/10/88
D-28	26°12.3'	112°36.3'	55	42.47	52.83	4.77	17	3.33	08/10/88
E-2	27°46.7'	115°16.9'	112	63.99	29.88	5.89	13	1.77	26/02/89
E-7	26°19.0'	112°58.6'	59	—	—	—	15	—	27/02/89
E-8	26°12.1'	112°36.5'	60	27.81	72.19	14.81	14	2.54	28/02/88
E-10	26°08.7'	112°51.2'	82	45.42	46.94	7.64	13	1.69	28/02/89
E-11	25°55.3'	112°59.1'	123	79.85	16.96	2.42	14	1.39	28/02/89
E-14	25°38.2'	112°23.3'	80	12.2	80.04	7.76	14	2.79	01/03/89
E-15	25°28.9'	112°15.1'	57	23.01	70.89	6.1	14	2.37	01/03/89
E-16	25°28.3'	112°11.2'	27	82.67	12.27	4.59	16	1.11	01/03/89
E-17	25°14.3'	112°15.7'	53	51.61	42.12	5.55	14	1.57	01/03/89
E-18	25°07.8'	112°16.5'	50	56.42	37.89	5.69	15	1.45	01/03/89
E-19	25°07.8'	112°20.4'	84	30.67	62.45	6.64	14	2.41	01/03/89
E-20	25°11.6'	112°24.3'	98	58.3	35.73	5.97	13	1.37	02/03/89
E-21	25°07.3'	112°31.2'	168	50.61	43.55	5.84	12	1.42	02/03/89
E-22	24°39.3'	112°19.3'	106	59.63	34.47	5.91	14	1.33	02/03/89
E-28	24°16.4'	111°29.1'	71	—	—	—	14	—	03/03/89
G-1	28°17.5'	114°12.9'	48	—	—	—	—	—	07/03/90
G-2	28°33.4'	114°25.0'	86	—	—	—	—	—	07/03/90
G-3	28°49.6'	114°38.6'	85	—	—	—	—	—	07/03/90
G-4	28°28.1'	114°48.1'	120	—	—	—	—	—	08/03/90
G-5	28°33.4'	114°25.0'	98	—	—	—	—	—	08/03/90
G-6	28°00.3'	114°29.8'	37	—	—	—	—	—	08/03/90
G-8	28°11.6'	115°03.0'	95	—	—	—	—	—	08/03/90
G-12	26°09.6'	113°09.5'	52	—	—	—	—	—	09/03/90
G-13	26°03.9'	113°19.1'	105	—	—	—	—	—	09/03/90
G-14	26°03.9'	113°22.2'	150	—	—	—	—	—	10/03/90
G-15	25°42.3'	112°55.8'	196	—	—	—	—	—	10/03/90
G-16	25°44.9'	112°48.5'	150	—	—	—	—	—	10/03/90
G-18	25°30.3'	112°14.2'	47	—	—	—	—	—	11/03/90
G-19	25°22.4'	112°26.6'	100	—	—	—	—	—	11/03/90
H-4	28°48.3'	115°06.6'	144	—	—	—	—	—	05/09/90
H-8	27°56.1'	114°54.4'	66	—	—	—	—	—	04/09/90

Remarks.—The subgenus *Aquilaspio* was established by Blake and Kudenov (1978), some authors used for a time the generic level, posteriorly Maciolek (1985) recognize in her revision of the genus *Prionospio* the subgeneric level of *Aquilaspio*. This subgenus has six species: *P. sexoculata* Augener 1918 from West Africa; *P. aucklandica* Augener 1923 from Auckland Island; *P. peruana* Hartmann-Schröder 1962 from Peru; *P. tetelensis* Gibbs 1971 from Solomon Islands; *P. multibranchiata* Blake and Kudenov 1978 from Australia; and *P. pyramidalis* Hutchings and Turvey 1984 from Australia.

Distribution.—Indopacific. It is known from South Australia, India, and Auckland island. This is the first record for the eastern Pacific Coast.

Prionospio (Minuspio) cirrifera (Wirén 1883)

Prionospio (Minuspio) cirrifera: Light 1977: 82; Blake and Kudenov 1978: 222, fig. 25a; Mackie 1984: 36, fig. 1a-k; Maciolek 1985: 352, fig. 10.

Material examined.—30 specimens: UANL 0517–0523.

Distribution.—Cosmopolitan. It is known for the Arctic, from Greenland to South America, Atlantic coast of Europe, Behring Sea to California. In México this species is known from Baja California, Sonora, Quintana Roo, Yucatán and Campeche. This is the first record from Baja California Sur.

Prionospio (Minuspio) delta (Hartman 1965)

Prionospio (Minuspio) delta: Maciolek 1985: 358, fig. 12.

Material examined.—112 specimens: UANL 0524–0532.

Remarks.—The specimens differ in some features to *P. (M.) delta*. Prostomium in the present organisms have three distal papillae one middle and two lateral, being smooth, with two pairs of small eyes. Neuropodial hooks appear on setiger 19, and the neuropodial ones appear on setiger 25. In other features both are similar.

Distribution.—Disjunct, Amphiamerican-Eastern Atlantic, in warm to temperate waters. In the Atlantic it is known from Delaware to Surinam, southwest Africa; in the Pacific is recorded from Oregon to the upper Gulf of California. This is the first record from Baja California Sur.

Prionospio (Prionospio) ehlersi Fauvel 1928

Prionospio ehlersi: Fauvel, 1928: 10; Hartman 1965: 151; Hartman and Fauchald 1971: 105; Gibbs 1971: 170; Intes and Le Loeuff 1977: 218; Blake and Kudenov 1978: 217, fig. 20m.

Prionospio lobulata: Fauchald 1972: 195, Pl. 40, fig. a-e (*vide* Maciolek 1985).

Material examined.—23 specimens: UANL 0533–0543.

Remarks.—Maciolek (1985) considered the synonymy of *P. lobulata* with *P. ehlersi*; the only difference between both species is the lack of reticulation on the lateral pouches. She mentioned the apparition of these structures on neuropodia 4–5, the species of Fauchald have these structures on neuropodia 6 and 7; these facts joined to the lack of reticulation on these structures, suscite a doubt about the synonymy of the species. Our organisms agree with characteristics of *P. ehlersi* sensu stricto, the lateral pouches appear between setigers 4 to 5, the neuropodial hooks and the sabre setae appear from setiger 21.

Distribution.—Cosmopolitan in temperate to tropical waters. It is known from Morocco, South Africa, Mediterranean Sea, Australia, Solomon Islands, Vizcaya Bay, Surinam, eastern coast of United States and western México. In México it is known from Baja California Sur and Sinaloa.

Prionospio (Prionospio) queenslandica Blake and Kudenov 1978

Prionospio (Prionospio) queenslandica: Blake and Kudenov 1978: 215, fig. 21.

Material examined.—2 specimens: UANL 0544–0545.

Remarks.—The present organisms differ from the Australian specimens by lacking lateral ciliate bands on branchiae 2 and 3.

Distribution.—Transpacific. This species was only known from Queensland, Moreton Bay, Australia. This is the first record from American waters.

Prionospio (Prionospio) steenstrupi Malmgren 1867

Prionospio steenstrupi: Malmgren 1867: 202; Wesenberg-Lund 1951: 70; Uschakov 1955: 277; Foster 1971: 84, figs. 175–185; Light 1978: 88, fig. 89a–d, 90a–e; Blake and Kudenov 1978: 213, fig. 20a; Maciolek 1985: 332 (in part); Sigvaldadóttir and Mackie 1993: 203–219, figs. 1a–f, 2a–j.

Material examined.—195 specimens: UANL 0546–0580.

Remarks.—This species is widely recorded, but probably is a complex of species. Nateewathana and Hylleberg (1991) found 12 different forms of *P. steenstrupi* from Andaman Sea, Thailand. These forms differ in the shape of the neuropodial postsetal lobe of setiger 2, and a dorsal ridge derived from the notopodial lobe. My specimens are closely allied to subgroup “BE” reported from Andaman Sea, the neuropodial postsetal lobe is quadrangular, and the dorsal ridge is missing, but my specimens differ from this subgroup by the prostomium shape, truncate for the Thailand specimens, and rounded for the present material.

Sigvaldadóttir and Mackie (1993) mentioned the necessity of re-evaluation of the specimens designed as *P. steenstrupi* cited from other localities off Iceland.

Distribution.—Cosmopolitan. It is known from Iceland, Greenland, New England to Florida, Caribbean Sea, Washington to California, Japan, Madagascar, Behring Sea, western México. In Mexican waters is only known from Sinaloa; this is the first record from Baja California Sur.

Scolelepis de Blainville 1828
Scolelepis squamata (Müller 1806)

Scolelepis squamata: Pettibone 1963: 92; Day 1967: 483, fig. 18.7 c–h; Kudenov 1980: 109; Salazar-Vallejo 1981: 36; Foster 1971: 59, figs. 118–131; Light 1978: 105; Johnson 1984: 6–37.

Material examined.—5 specimens: UANL 0581–0583.

Distribution.—Cosmopolitan. It is known from the eastern coast of United States from New England to Florida, Gulf of Mexico, England to Senegal, Mediterranean Sea, Canada to western México. In Mexican waters it is known from Baja California, Campeche and Tamaulipas. This is the first record for Baja California Sur.

Spio Fabricius 1785
Spio pacifica Blake and Kudenov 1978

Spio pacifica: Blake and Kudenov 1978: 228, fig. 28 a–k; Van der Heiden and Hendrickx 1982: 5.

Material examined.—1 specimen: A-10(1) (UANL 0584).

Distribution.—Transpacific. It is known from Australia and from Sinaloa, Mexico. This is the first record from Baja California Sur.

Spiophanes Grube 1860
Spiophanes bombyx (Claparède 1870)

Spiophanes bombyx: Webster and Benedict 1884: 735; Fauvel 1927: 41 a–i; Berkeley 1927: 12; Hartman 1945: 8; 1951: 85; 1963: 45; 1965: 389; 1969: 181, figs. 1–5; Uschakov 1950: 200; Berkeley and Berkeley 1952: 22, figs. 40–43; Rioja 1962: 184; Imajima and Hartman 1964: 289; Reish 1968: 84; Foster 1971: 40, figs. 66–75; Blake and Kudenov 1978: 284.

Material examined.—101 specimens: A-9(3) (UANL 0585), B-2(2) (UANL 0586), B-15(1) (UANL 0587), B-20 (1) (UANL 0588), C-10(2) (UANL 0589–0604).

Distribution.—Cosmopolitan. It is known from the west coast of Europe, Mediterranean Sea, western Africa, eastern coast of United States, Gulf of Mexico, Falkland Islands, Canada to western México, Japan. In México this species is known from Baja California and Baja California Sur.

Spiophanes kroeyeri (Grube 1860)

Spiophanes kroeyeri: Fauchald 1972: 29; Light 1977: 79, fig. 5d.

Material examined.—31 specimens: UANL 0605–0608.

Distribution.—Cosmopolitan in cold waters. In México it is known from Sonora, Baja California, Baja California Sur. It is the first record from the Pacific coast of Baja California Sur.

Spiophanes lowai Solís-Weiss 1983

Spiophanes lowai: Solís-Weiss 1983: 373, figs. 3 a–d, 4 a–g, 5 a–c.

Material examined.—9 specimens: UANL 0609–0612.

Distribution.—This species is only known from western México, in Sinaloa, and for first time from the Pacific coast of Baja California Sur.

Spiophanes missionensis Hartman 1941

Spiophanes missionensis: Hartman 1941: 296, Pl. 46, figs. 17–21; 1963: 46; 1969: 185, figs. 1–4.

Material examined.—49 specimens: UANL 0613–0627.

Distribution.—Eastern Pacific in warm waters. This species is known from California (USA) to upper Gulf of California. In México it is known from Baja California; this is the first record from Baja California Sur.

Spiophanes wigleyi Pettibone 1962

Spiophanes wigleyi: Pettibone 1962: 83, figs. 5–6; Hartman 1965: Pl. 28, figs. e–f; Foster 1971: 43, figs. 76–85; Blake and Kudenov 1978: 224, fig. 26; Hernandez-Alcántara and Solís-Weiss 1993: 1033.

Material examined.—12 specimens: C-10(1) (UANL 0628–0631).

Distribution.—Disjunct, Amphiamerican-Transpacific. This species is known from New England to the northern Gulf of Mexico, and Australia. In México it is known in the Gulf of California. This is the first report from Pacific coast of Baja California Peninsula.

Opheliidae Malmgren 1867

Travisia Johnston 1840

Travisia filamentosa new species

Figure 1A–C

Material examined.—B-8 (Holotype, UANL 0264).

Description.—Holotype is a complete specimen with 33 setigers, 68 mm in length, 12 mm width. Body robust, grub like, separate in two regions. In anterior region separation of segments diffuse, with 14 setigers; posterior region formed with

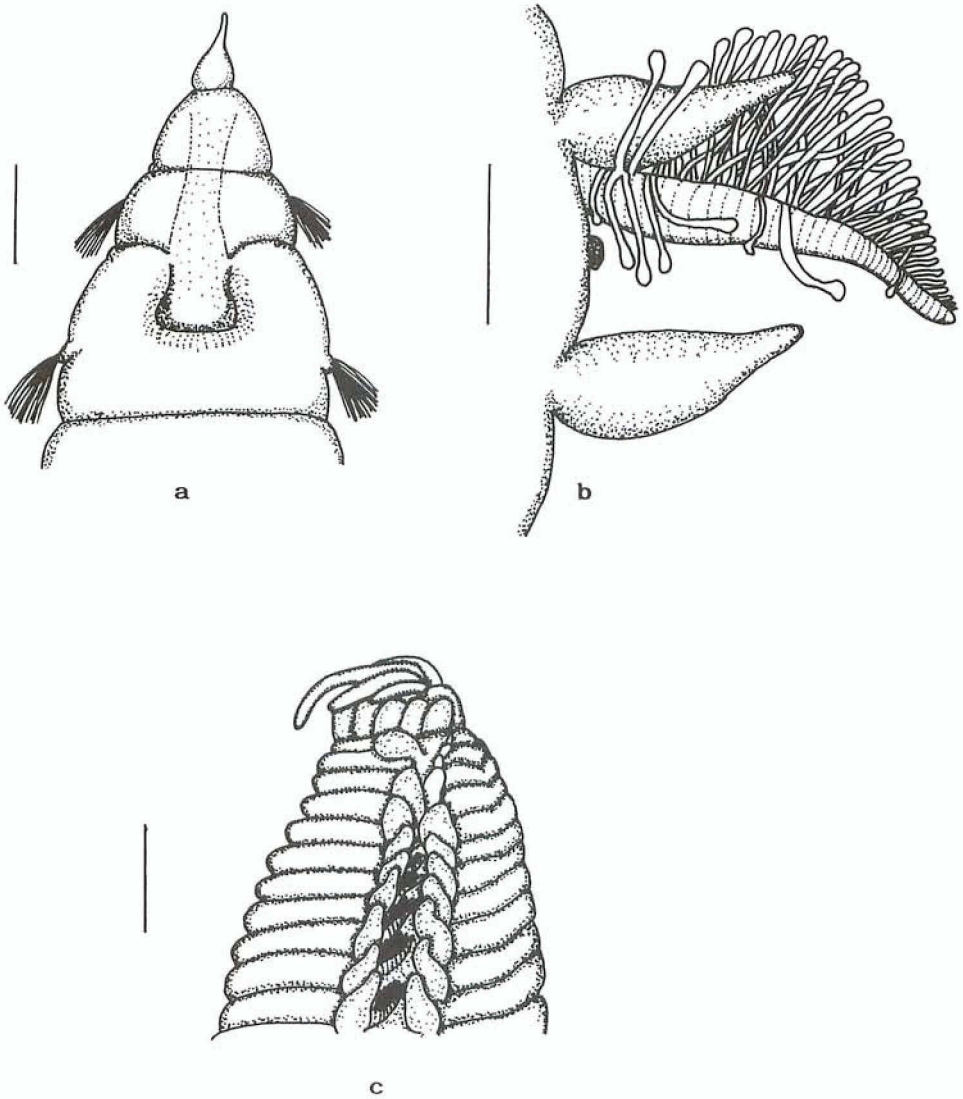


Figure 1. *Trivisia filamentosa* new species (Holotype). (a). Anterior end, ventral view; (b) Eighteenth parapodium, lateral view; (c). Posterior end, lateral view. Scale bar 1mm.

segments clearly triannulated dorsally, laterally biannulated, last segments imbricate. Tegument apparently smooth, under magnification series of irregular papillations present.

Prostomium is a very small cone, with two posterodorsal nuchal organs. Peristomium broad, uniannular. Mouth appears ventrally on setiger 2 (Fig. 1A). Branchiae present from third setiger, continued posteriorly to setiger 30; first one large and filamentous, with small protuberances, from setiger 4 branchiae appear with basal structure and many branchial filaments (Fig. 1B).

Parapodial lobes present from setiger 15, noto- and neuropodial lobes equal in size and structure and inserted dorsal and ventral to setal fascicles and continue with slight reduction in size to posterior parapodia (Fig. 1C). Capillary setae with

lateral projections. Pygidium with terminal anus and six digitiform cirri directed dorsally.

DISCUSSION

Travisia filamentosa new species is closely related to *T. arborifera* (Fauvel, 1932); both have branchiae with many branchial process. The first branchial structure in *T. filamentosa* occur on setiger 3, and nephridial pores are on setigers 1 to 14. In *T. arborifera* the branchiae appear on setiger 2, and nephridial pores on setigers 3 to 14. In addition to these two species, only *T. chinensis* (Grube) is reported with bifid or trifid branchiae, the other 21 valid species of *Travisia* have simple and cirriform branchiae.

The species of the genus *Travisia* are very rare; *T. filamentosa* was only collected in one sampling station, during eight oceanographic cruises on the continental shelf of Baja California Sur; in such cruises almost 180 dredged samples stations were taken.

Etymology.—The specific name refers to the branchial structure.

Type locality. *T. filamentosa* is known only from the type locality, western coast of Baja California Sur, México (26°11.0 N, 112°54.2 W) at 55 m.

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