

## Two new species of *Nereis* (Polychaeta: Nereididae) from the Mexican Pacific

Jesús Angel de León-González and Vivianne Solís-Weiss

(JAL-G) Laboratorio de Zoología de Invertebrados, Facultad de Ciencias Biológicas, Universidad Autónoma de Nuevo León, Ap. Postal 5 "F", San Nicolás de los Garza, Nuevo León, 66451 Mexico;

(VS-W) Laboratorio de Ecología Costera, Instituto de Ciencias del Mar y Limnología, U.N.A.M., Ap. Postal 70-305, Mexico, D.F. 04510, Mexico

**Abstract.**—Two new species of *Nereis* from the Mexican Pacific are described. *N. inflata*, is characterized by an enlarged dorsal ligule in posterior notopodia and long shafted notopodial homogomph falcigers; *N. casoae* belongs to the group of species with short dorsal ligules and elongate ventral ligules, but it can be differentiated by the presence of long blades in notopodial homogomph falcigers, with many small teeth on the interior margin and an apical blunt tooth.

The descriptions included in this study are part of an exhaustive revision of specimens from the family Nereididae in Mexican shores (de León-González 1997). So far, 22 species of the genus *Nereis* are known from the Mexican Pacific. The species newly described herein were collected either by María Elena Caso in Chivos Island in front of Mazatlán harbor, Sinaloa State, Mexico in the intertidal zone, by one of us (VSW) in soft bottoms of the continental shelf along the Sinaloa coast with personnel from the Lab de Ecología Costera, ICML-UNAM, as part of the Institutional projects SIPCO and CORTES (1981–1982), on board the R/V *El Puma*, of UNAM, and by the first author (JALG), those last separated from the endolithic fauna in sandy rocks collected by shrimp trawls in the western coast of the Baja California peninsula.

The type material is deposited in the polychaetological collections of both the Universidad Autónoma de Nuevo León (UANL), and the Instituto de Ciencias del Mar y Limnología, U.N.A.M. (CPICML)

*Nereis casoae*, new species

Figs. 1, 2

**Material examined.**—55 specimens. Col. Dra. Maria Elena Caso, Isla los Chivos,

Mazatlán, Sinaloa, 9 May 1979 (Holotype UANL 4832, 6 Paratypes UANL 4833); Project SIPCO I, Stn. A-2(14), 22°17'N, 106°10'W, 61 m, 23 Apr 1981; Stn. C-1 (1), 23°37'N, 106°56'W, 40 m, 24 Apr 1981; C-2 (7), 23°34'N, 106°57'W, 66 m, 24 Apr 1981; SIPCO II, Stn. A-2 (2), 22°18'N, 106°10'W, 66 m, 22 Aug 1981; Stn. C-2 (2), 23°36'N, 107°02'W, 72 m, 23 Aug 1981; SIPCO III, Stn. A-2 (2), 22°17'N, 106°11'W, 74 m, 15 Jan 1982; Stn. C-2 (17), 23°32'N, 107°08'W, 76 m, 16 Jan 1982; Project CORTESI, Stn. 33 (1), 29°54'N, 114°20'W, 75–80 m, 8 May 1982; Stn. 48 (1), 28°13'N, 111°28'W, 54 m, 11 May 1982.

**Epitokous material examined.**—SIPCO II, Stn. A-2 (1).

**Description.**—Holotype incomplete with 71 setigers, 40 mm long, 3 mm wide. Body reddish-brown, with dorsal dark band in median anterior region, beginning on setiger 2. Prostomium pentagonal, one pair of slender frontal antennae. Two pairs of eyes in trapezoidal arrangement, anterior pair as a lens, posterior oval. Biarticulate palps with cylindrical palpostyle. Expanded peristomium, with four pairs of tentacular cirri, the longest extending to setiger 4 (Fig. 1a).

Pharynx with paragnaths in all areas, except area V, paragnaths arrangement as follows: I = 1 small cone, II = 2 cones in a triangle; III = 23 cones in a square; IV = 22 cones in a crescent; VI = 4 cones in a diamond; VII–VIII = 4 cones in a row.

Anterior notopodia with dorsal ligules triangular, median ligule conical, superior lobe reduced as a ridge; neuropodia with postsetal lobe rounded, ventral ligule subulate; dorsal cirrus basally inserted, ventral cirrus smaller (Fig. 1b). Median and posterior parapodia similar to anterior ones, but with ventral ligule notoriously elongate. Ventral cirrus becoming smaller in posterior parapodia (Fig. 1c, d).

Setae in anterior parapodia arranged as follows: notosetae in supracicular position homogomph spinigers; supracicular neurosetae homogomph spinigers and heterogomph falcigers strongly denticulate (Fig. 1e); infracicular spinigers and falcigers heterogomph, the latter with a slightly longer blade (Fig. 1f). Median and posterior parapodia with setae in the following arrangement: notosetae in supracicular position homogomph spinigers and falcigers with the anterior region of blade rounded (Fig. 1g); supracicular neurosetae homogomph spinigers and heterogomph falcigers, the latter with a short blade, strongly denticulate in inner margin and an apical tooth directed downwards (Fig. 1h); infracicular neurosetae homogomph spinigers and heterogomph falcigers, with blade slightly larger than supracicular ones (Fig. 1i).

Pygidium absent in this specimen; in another one, pygidium with terminal anus and two longanal cirri.

*Epitokous male*.—Specimen complete, light yellow, with 67 setigers, 13 mm long atokous region 2 mm wide, epitokous region 2.5 mm wide.

Prostomium pentagonal, as long as wide, one pair of cirriform antennae, two pairs of enlarged eyes, biarticulate palps with rounded palpostyles. Peristomium as wide as the next two setigers; longest peristomial cirrus extends posteriorly to setiger 6.

Body divided in two regions: anterior one atokous, first 9 setigers with dorsal and ventral cirri slightly modified, all with distal cirristyles (Fig. 2a, b). From setigers 11 to 14, parapodia similar to atokous specimens (Fig. 2c). Parapodia from heteronereidid region strongly modified, with lamellae associated with lobes, ligules and cirri; dorsal cirrus in anterior parapodia with up to 9 ventral crenulations, ventral cirrus short (Fig. 2d). Dorsal cirrus smooth in posterior parapodia, ventral cirrus almost twice dorsal cirri size (Fig. 2e). Natatory setae from modified region with oar-like appendages.

*Discussion*.—The presence of the ventral elongate ligule is a characteristic seldom observed, being only known in *Nereis apalie* Wilson (1985) from Australia, *N. fauchaldi* de León-González & Díaz-Castañeda (1998), from western Mexico and probably *N. latrescens* Chamberlin (1918) from California, since in the latter the ventral ligule is not so elongate as in the former species but more so than in other species of *Nereis*. This structure is present in *N. casoae*, new species, as in the species formerly mentioned, but it can be differentiated by the presence of the long blade in notopodial homogomph falcigers, with many small teeth on the interior margin, and an apical blunt tooth; in *N. apalie* and *N. latrescens*, for the above mentioned falciger, the blade is short and with 5 and 3 teeth, respectively, whereas in *N. fauchaldi* the blade is short and smooth.

*Etymology*.—This species is dedicated to Dr. María Elena Caso who collected part of the material which was used in the description.

*Distribution*.—This species is known from the Mazatlán area (Sinaloa State), and two localities in the Gulf of California.

*Habitat*.—Among algae fixed to coralline rocks, and in sandy bottom of the Gulf of California.

*Nereis inflata*, new species

Fig. 3

*Material examined*.—7 specimens. Col. J. A. de León-González, in front of Punta

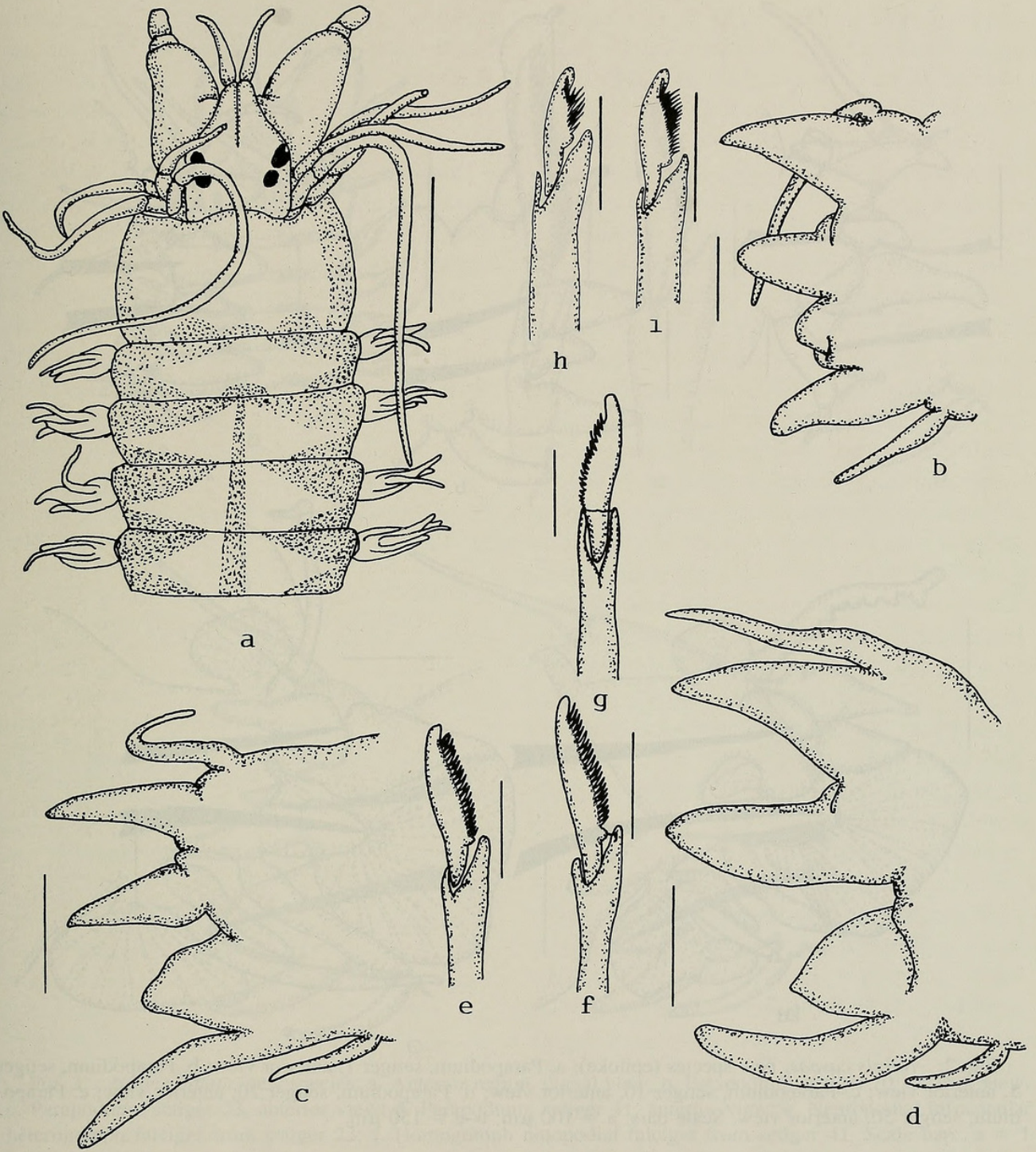


Fig. 1. *Nereis casoae*, new species: a. Anterior region, dorsal view; b. Parapodium, setiger 10, anterior view; c. Parapodium, setiger 37, anterior view; d. Parapodium, setiger 71, anterior view; e. Notopodial heterogomph supracicular falciger from setiger 10; f. Neuropodial infracicular heterogomph falciger from setiger 10; g. Notopodial homogomph falciger from setiger 71; h. Neuropodial supracicular heterogomph falciger from setiger 37; i. Neuropodial infracicular heterogomph falciger from setiger 37. Scale bars: a = 1 mm; b–c = 250  $\mu$ m; d = 150  $\mu$ m; e–i = 30  $\mu$ m.

San Juanico, Baja California Sur, 26°13'N; 112°32'W, 30 m, 28 Feb 1989 (Holotype UANL 4834, 5 Paratypes UANL 4835, 1 Paratype CPICML).

*Description.*—Holotype complete, with

56 setigers, 11 mm long, 2 mm wide, including setae; body reddish, prostomium strongly pigmented, posterior region of anterior setigers with transverse dark narrow band. Prostomium pentagonal, a pair of

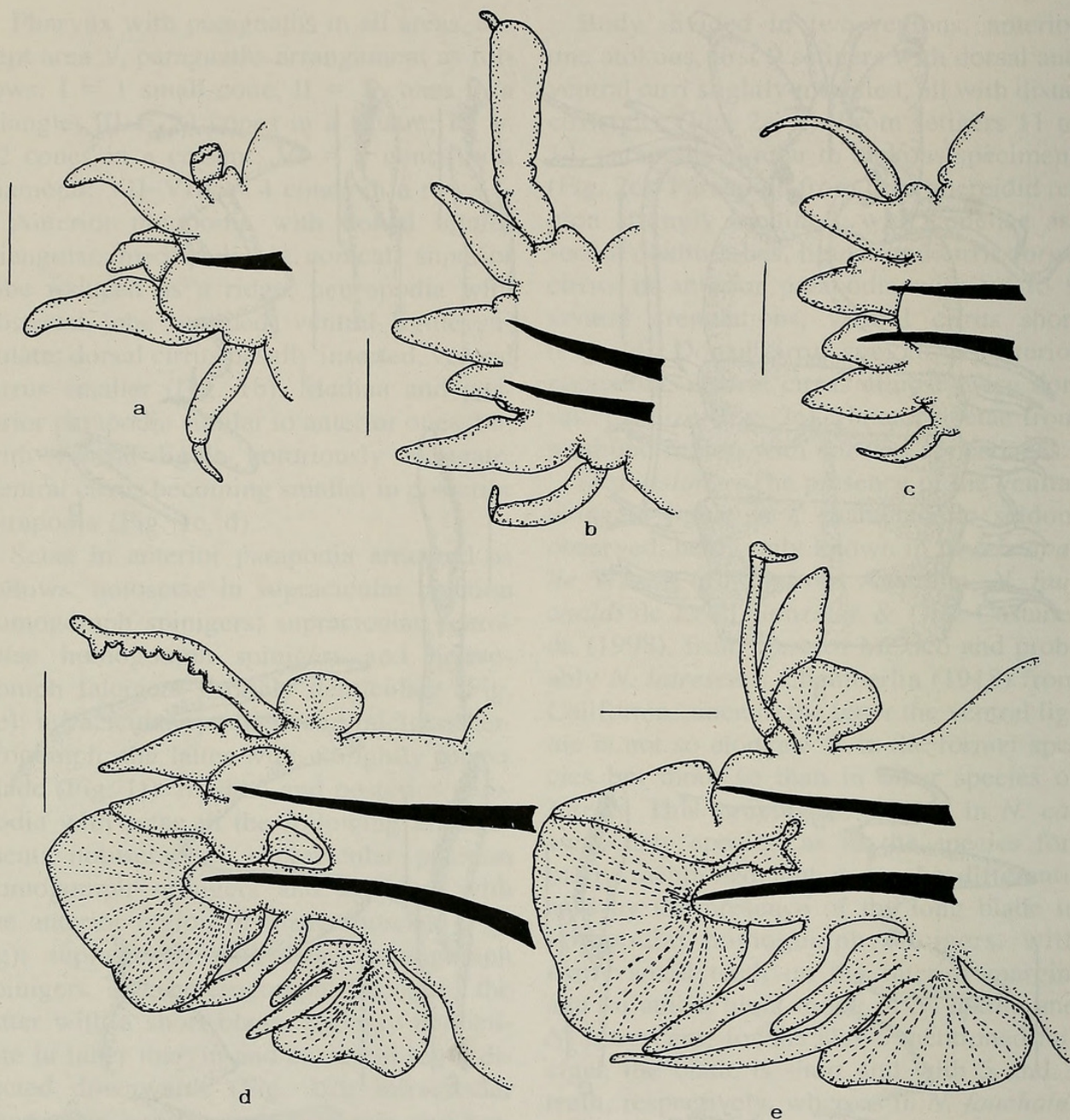


Fig. 2. *Nereis casoae*, new species (epitoke): a. Parapodium, setiger 1, anterior view; b. Parapodium, setiger 5, anterior view; c. Parapodium, setiger 10, anterior view; d. Parapodium, setiger 20, anterior view; e. Parapodium, setiger 50, anterior view. Scale bars: a = 100  $\mu\text{m}$ ; b-e = 150  $\mu\text{m}$ .

slender antennae which do not extend to anterior margin of palps. Two pairs of rounded small eyes. Biarticulate palps, conical palpostyle. Prostomium as large as the next setiger; 4 pairs of tentacular cirri, the longest extending posteriorly to setiger 4 (Fig. 3a).

Pharynx with paragnaths in following arrangement: I = 2 cones in a row; II = 11 cones in 2 rows; III = 11 cones in an oval

group; IV = 17 cones in a crescent; V = 6 cones in a group; VI = 6 in a stellate group; VII-VIII = 60 cones in 3 rows.

Anterior parapodia with notopodia formed by one median and one dorsal conical ligules, and subulate superior lobes; neuropodia formed by a postsetal mammilliform lobe and a digitiform ventral ligule. Dorsal cirrus slender inserted in the median posterior region, ventral one inserted basal-

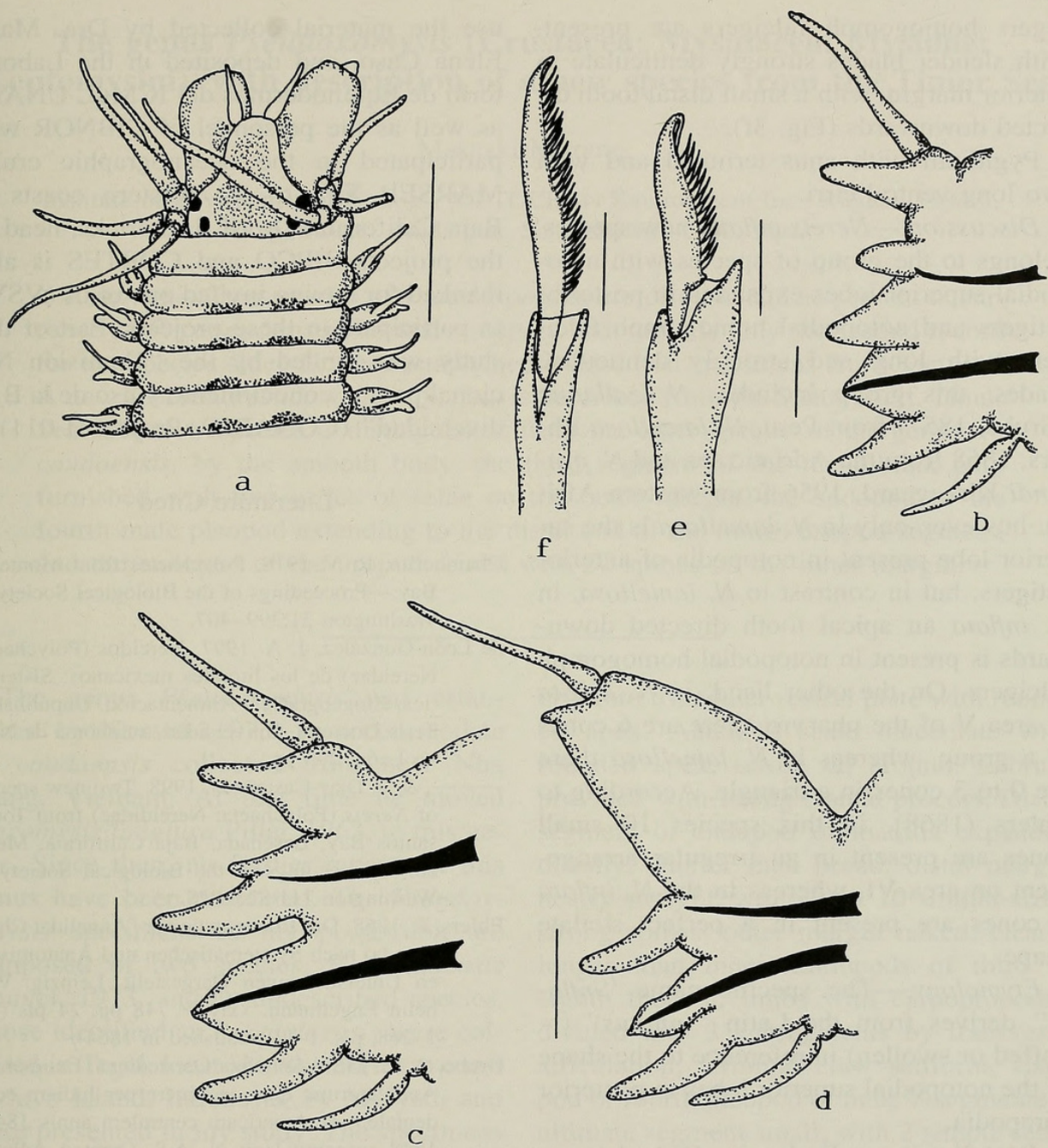


Fig. 3. *Nereis inflata*, new species: a. Anterior region, dorsal view; b. Parapodium, setiger 10, anterior view; c. Parapodium, setiger 23, anterior view; d. Parapodium, setiger 41, anterior view; e. Neuropodial infracicular heterogomph falciger from setiger 23; f. Homogomph notopodial falciger from setiger 41. Scale bars: a = 1 mm; b–d = 150  $\mu$ m; e–f = 15  $\mu$ m.

ly, smaller (Fig. 3b). Median parapodia with reduced superior lobes, dorsal cirrus inserted medially (Fig. 3c). Posterior notopodia with expanded dorsal ligule, superior lobe absent; neuropodia with reduced post-setal lobe. Dorsal cirrus inserted distally (Fig. 3d).

Setae in anterior parapodia in the following arrangement: notosetae supracicular

homogomph spinigers; neurosetae supracicular homogomph spinigers and heterogomph falcigers; infracicular setae heterogomph spinigers and falcigers, the latter with apical tooth directed downwards (Fig. 3e). Median and posterior parapodia with setation similar to those of anterior parapodia; they only differ in the notopodium where in addition to the homogomph spi-

nigers homogomph falcigers are present, with slender blades strongly denticulate in interior margin, with a small distal tooth directed downwards (Fig. 3f).

Pygidium with anus terminal and with two long ventral cirri.

*Discussion.*—*Nereis inflata*, new species, belongs to the group of species with notopodial superior lobes expanded in posterior setigers and notopodial homogomph falcigers with long and strongly denticulate blades; this group includes: *N. callaona* (Grube, 1857) from Peru, *N. lamellosa* Ehlers, 1868 from the Adriatic sea and *N. profundus* Kirkegaard, 1956 from western Africa; however, only in *N. lamellosa* is the superior lobe present in notopodia of anterior setigers, but in contrast to *N. lamellosa*, in *N. inflata* an apical tooth directed downwards is present in notopodial homogomph falcigers. On the other hand, in *N. inflata* in area V of the pharynx there are 6 cones in a group, whereas in *N. lamellosa* there are 0 to 3 cones in a triangle. According to Ehlers (1868), in this species 10 small cones are present in an irregular arrangement on area VI, whereas in the *N. inflata* 6 cones are present in a perfect stellate shape.

*Etymology.*—The specific name "*inflata*" derives from the Latin "*inflatus*" (= puffed or swollen) in reference to the shape of the notopodial superior lobes in posterior parapodia.

*Distribution.*—Endemic. Only known from one locality in the western coast of Baja California Sur.

*Habitat.*—The species was collected in the cavities of sandy rocks obtained in a shrimp trawl.

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