

TWO SPECIES OF *TYLOS* AUDOUIN FROM CHILE,
WITH NOTES ON SPECIES OF *TYLOS*
WITH THREE FLAGELLAR ARTICLES
(ISOPODA: ONISCOIDEA: TYLIDAE)

George A. Schultz

Abstract.—Two species of *Tylos* Audouin are described from Chile including a new species, *T. chilensis*, based on specimens formerly called *T. spinulosus* Dana. New specimens which more nearly match the description of *T. spinulosus* are redescribed under that name. The two species, both with three flagellar articles on the flagellum of antenna 2, are compared with each other and with the three other species of *Tylos* which also have three flagellar articles.

Roman (1977:110) listed 24 species of *Tylos* Audouin (1826) (see Ferrara and Taiti, 1979:91, for explanation of use of *Tylos* Audouin, 1826), three of which have three flagellar articles on antenna 2. To Roman's list can be added *T. marcuzzii* Soika, and *T. wegneri* Vandel (see Schultz 1974) making a total of at least 26 species in the genus (possible synonyms among them are not considered here). *Tylos wegneri* has three flagellar articles and *T. marcuzzii* has four. The new species described herein and *T. wegneri* bring to five the total number of known species of *Tylos* with three flagellar articles on the flagellum of antenna 2. With length and location they are: *T. spinulosus* Dana (1853), to 27 mm, central and southern Chile; *T. neozelanicus* Chilton (1901), to 14 mm, New Zealand; *T. exiguus* Stebbing (1910), to 4.5 mm, Red Sea; *T. wegneri* Vandel (1952), to 22 mm, West Indies and west coast of Costa Rica; and *T. chilensis*, new species, to 12 mm, central Chile.

Only slight morphological differences separate most species of *Tylos* (except *T. wegneri* which has a unique pleotelson) and the species with three flagellar articles on antenna 2 (except *T. wegneri*) are no exceptions.

The new species described here is based on the specimens called *T. spinulosus* (Dana) by Schultz (1970). Specimens of a different species (also with three flagellar articles) kindly sent to me by Dr. Eduardo Jaramillo, Universidad Austral de Chile, proved to be more nearly like *T. spinulosus* Dana than the specimens described by Schultz under that name, and they are described here as *T. spinulosus*. I thank Dr. Eduardo Jaramillo for sending me the specimens so that accurate identifications could be made of the two species of *Tylos* from Chile. I also thank Jersey City State College for separately Budgeted Research funds.

Tylos spinulosus Dana, 1853

Figs. 1A-J, 2A-F, 3A-E

Tylos spinulosus Dana, 1853:717, pl. 47, fig. 1a-c.

Tylos spinulosus Dana.—Miers 1877:675.—Budde-Lund 1879:9; 1885:279; 1908:78.—Stebbing 1893:424.—Chilton 1901:121; 1910:288.—Van Name 1924:192; 1936:415, 416, fig. 257.

nec *Tylos spinulosus* (Dana).—Schultz 1970:302, figs. 18-27.

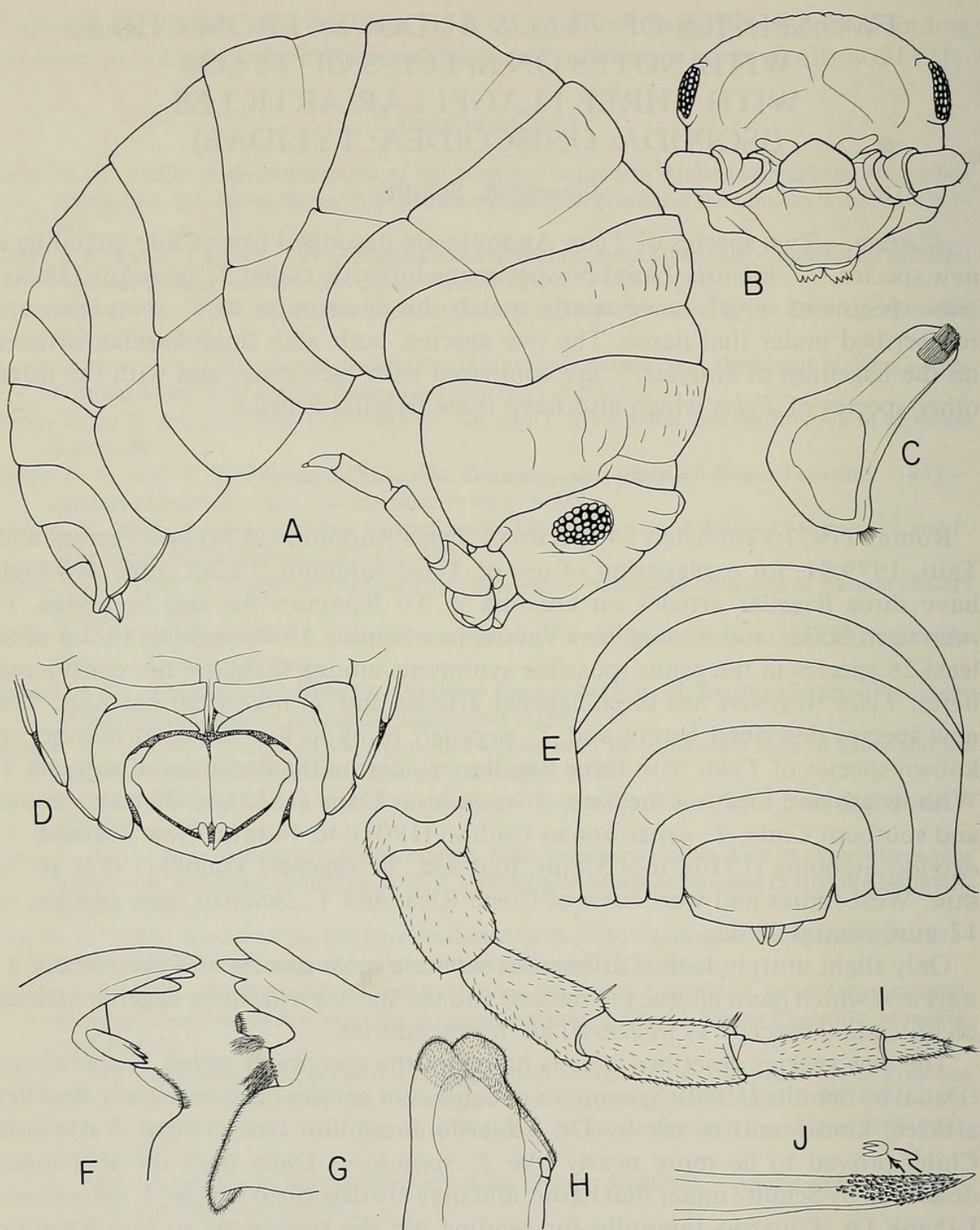


Fig. 1. *Tylos spinulosus*, male 20 mm long: A, Lateral view; B, Frontal view; C, Antenna 1; D, Underside pleon; E, Posterior View, F, Right mandible; G, Left mandible; H, Maxilla 1; I, Antenna 2; J, Endopod male pleopod 2.

Specimens have not been recorded since Dana's record. Van Name (1936:415, Fig. 257) quoted Dana's (1853) description in full and reproduced all of his illustrations. The specimens described here have a flagellum with the lengths of the articles more nearly matching those of the specimen illustrated by Dana (cf. Fig. 11 here with Pl. 47, Fig. 1b of Dana, also in Van Name 1936:415, Fig. 257).

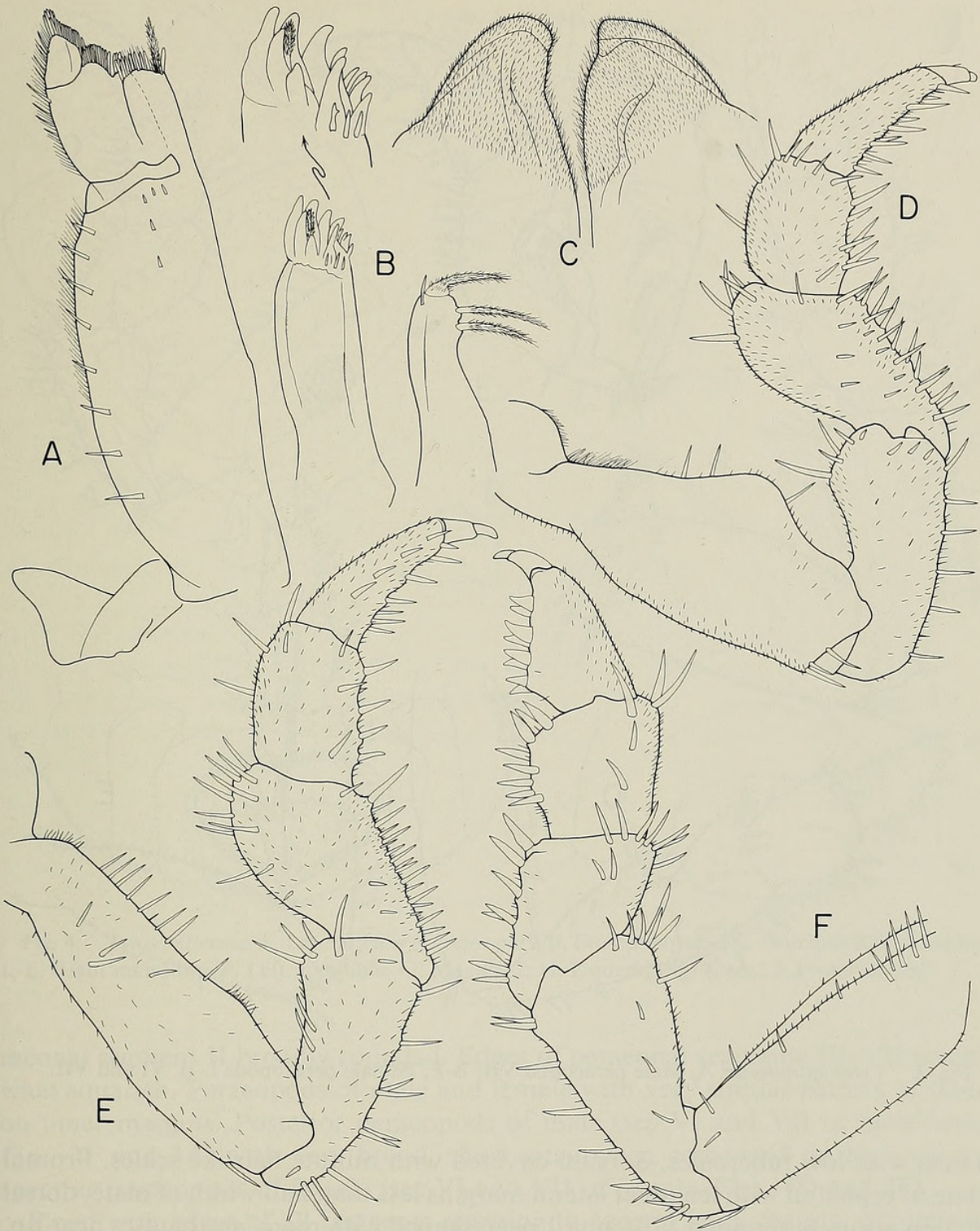


Fig. 2. *Tylos spinulosus*: A, Maxilliped; B, Maxilla 2 with detail of exopod; C, Hypopharynx; D-F, Male peraeopods I, II and VI.

They also lack the notch in the posterolateral corner of peraeonal segment I as shown by Schultz (1970). Dana did not illustrate or record such a notch. It probably would have been noted by Dana if it had been present as it is large and not characteristic of the other species of *Tylos* known at the time. *Tylos spinulosus* sensu Schultz (1970) is herein considered a new species.

Description.—Eyes large with many ocelli. Body with anterior peraeonal seg-

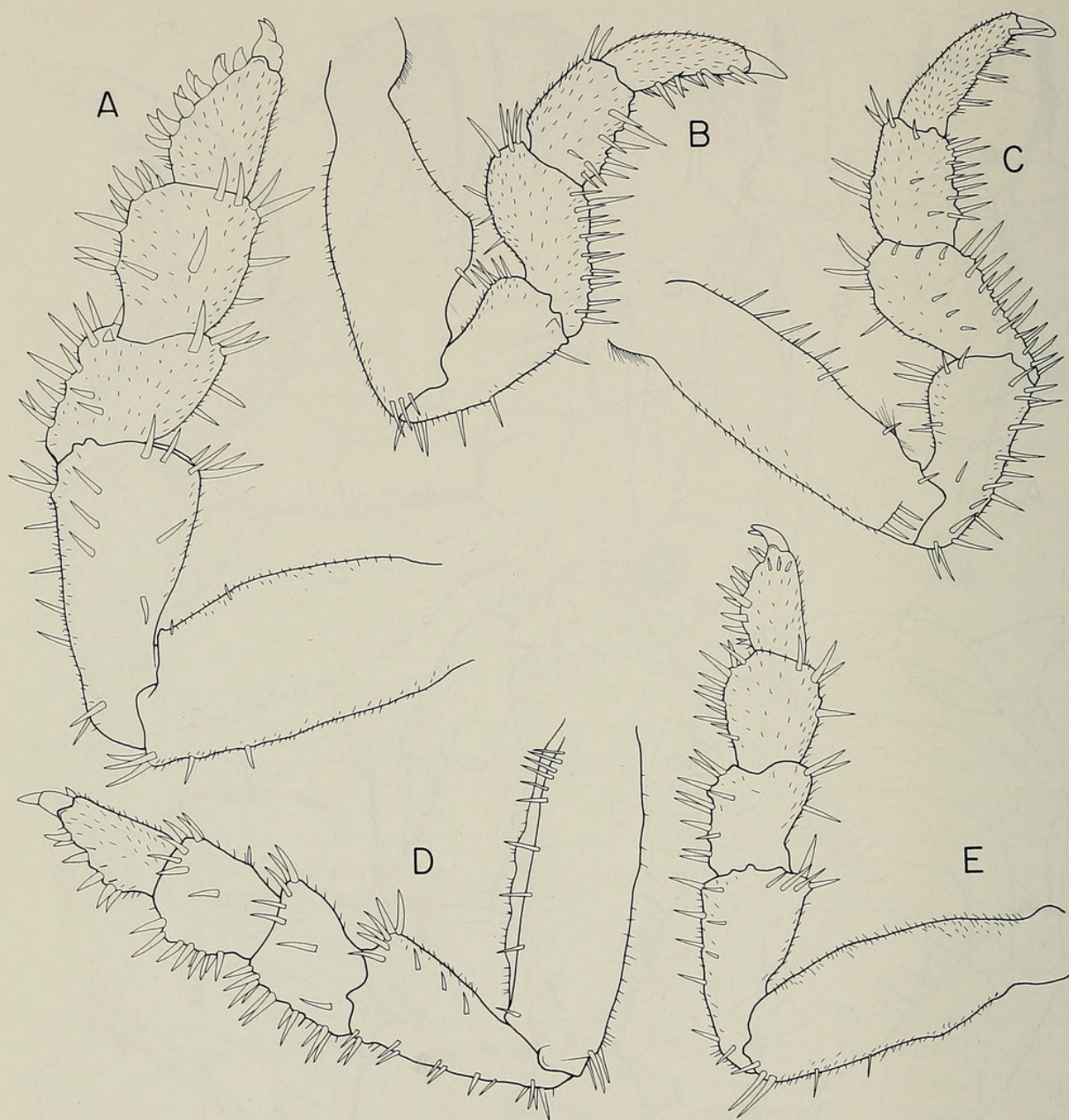


Fig. 3. *Tylos spinulosus*: A, Male peraeopod VII; B-E, Female peraeopods I, II, VI and VII.

ments with low tubercles; dorsum covered with minute hairlike scales. Frontal plate of cephalon with length of lateral margins less than half width of plate; dorsal margin obtusely rounded. Antenna 1 pear-shaped with many aesthetascs near tip. Antenna 2 short; flagellum of 3 articles, longer than last peduncular segment. Article 1 of flagellum about twice as long as articles 2 and 3 combined; article 3 tiny. Clypeus rounded. Mandibles each with 3 cusps on incisor process. Lacinia mobilis on right mandible with 3 teeth and no compound setae. Lacinia mobilis on left mandible with many small apical teeth arranged in crown; small setae present. Five setae in setal row on right mandible. Molar process of each mandible broad and fringed with many tiny setae. Exopod of maxilla 1 with many large and small teeth and one compound seta present on tip; endopod with 3 long medially pointing setae and small seta on tip. Hypopharynx bilobed.

Peraeonal segment I with broadly rounded posterolateral margin. Edge of pe-

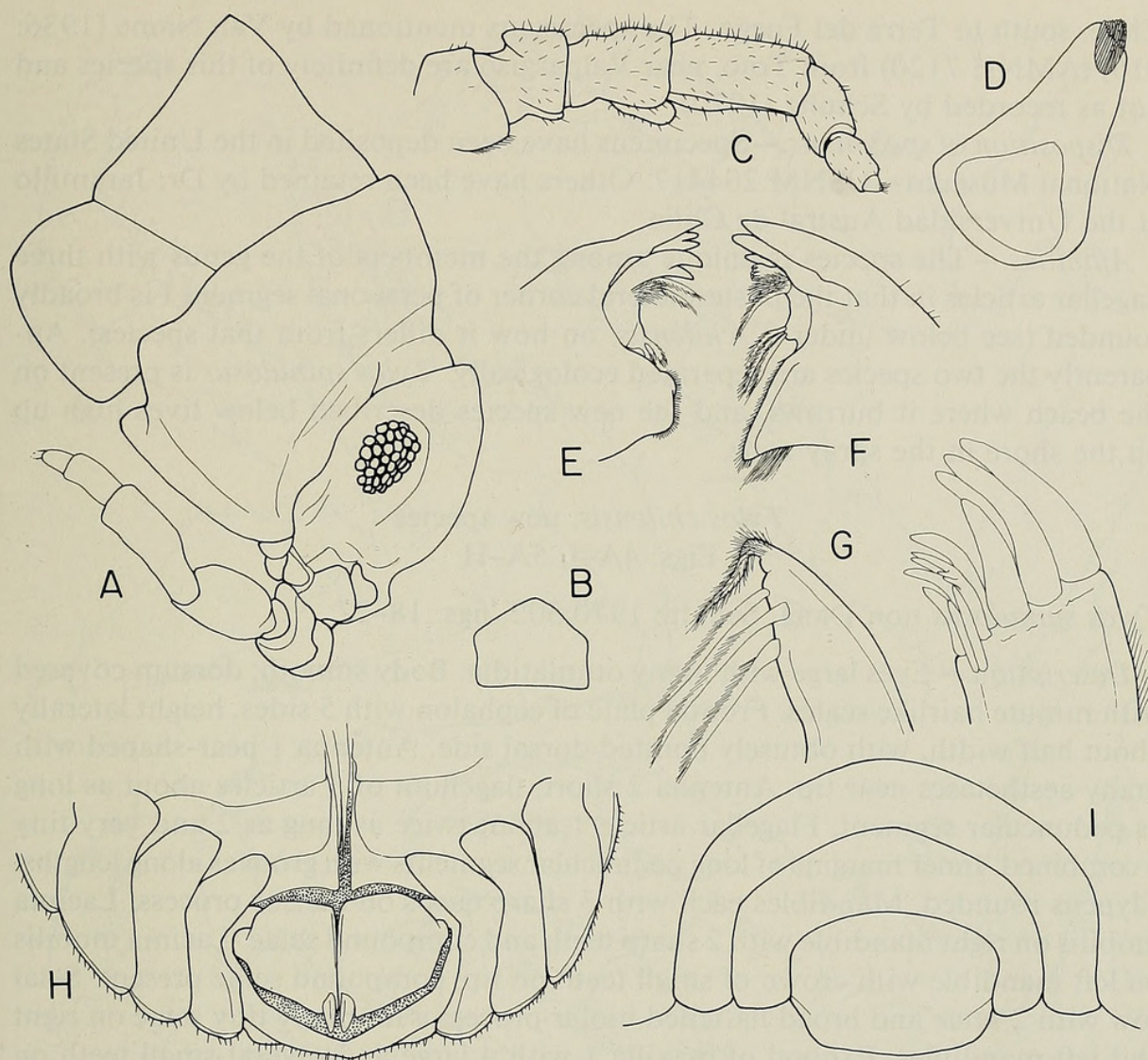


Fig. 4. *Tylos chilensis*: A, Lateral view anterior part; B, Frontal process; C, Antenna 2; D, Antenna 1; E, Right mandible; F, Left mandible; G, Maxilla 2; H, Underside of pleon; I, Posterior end.

raeonal segment II broadly rounded. Edges of peraeonal segments III–VII somewhat squarish. Peraeopods of male and female with very similar pattern of setae on inner margins. Posterior peraeopods of male (see VI and VII of male here, Figs. 2F and 3A) with very broad, short setae when compared to those on respective peraeopods of female (see VI and VII of female, Figs. 3D and 3E).

Pleon with edges of all segments reaching to general body margin. Pleotelson projecting slightly beyond general body margin, with rounded posterior border and shallow lateral notches receiving edges of pleonal segment 5. Inner edges of right and left pleonal segment 5 extensions pointed and almost touching medially; inner edges of pleonal extensions of segment 4 pointed and wide apart.

Measurements.—Males to 27 mm long; females to 26 mm long.

Etymology.—The name *spinulosus*—"with spinules,"—refers to the minute spines on the dorsum.

Type-locality.—Nassau Bay, Fuegia (Terra del Fuego), Chile. The species lives on beaches where it burrows into the sand.

Distribution.—Playa Punta Choros (29°53'S, 71°19'W), north of Coquimbo,

Chile, south to Terra del Fuego. The specimens mentioned by Van Name (1936: 416) (AMNH 7120) from Toto, near Valparaiso are definitely of this species and not as recorded by Schultz (1970).

Disposition of specimens.—Specimens have been deposited in the United States National Museum—USNM 204417. Others have been retained by Dr. Jaramillo at the Universidad Austral de Chile.

Affinities.—The species is unique among the members of the genus with three flagellar articles in that the posterolateral corner of peraeonal segment I is broadly rounded (see below under *T. chilensis*, on how it differs from that species). Apparently the two species are separated ecologically. *Tylos spinulosus* is present on the beach where it burrows, and the new species described below lives high up on the shore in the spray zone.

Tylos chilensis, new species

Figs. 4A–I, 5A–H

Tylos spinulosus non Dana, Schultz 1970:302, figs. 18–27.

Description.—Eyes large with many ommatidia. Body smooth; dorsum covered with minute hairlike scales. Frontal plate of cephalon with 5 sides, height laterally about half width, with obtusely pointed dorsal side. Antenna 1 pear-shaped with many aesthetascs near tip. Antenna 2 short; flagellum of 3 articles about as long as peduncular segment. Flagellar article 1 about twice as long as 2 and very tiny 3 combined. Inner margins of long peduncular segments with grooves along lengths. Clypeus rounded. Mandibles each with 3 sharp cusps on incisor process. Lacinia mobilis on right mandible with 2 sharp teeth and compound setae. Lacinia mobilis on left mandible with crown of small teeth on tip; compound setae present. Setal row with 2 setae and broad flattened molar process with many tiny setae on right and left mandibles. Exopod of maxilla 1 with 4 large and several small teeth on tip; endopod with 4 long medially pointing setae on tip. Hypopharynx bilobed.

Peraeonal segment I (lateral view) with deeply notched posterolateral margin. Posterior margin (lateral view) obtusely pointed just above posterolateral notch. Lateral margins of peraeonal segments II–IV with squarish borders. Peraeonal segments V–VII with rounded lateral borders. All peraeopods of male and female similar, with similar patterns of many long setae on inner margin of each.

Pleon with edges of all pleonal segments reaching general body margin. Pleotelson projecting slightly beyond general body margin; posterior margin produced medially with deep grooves laterally placed to receive pleonal segments 5. Inner edges of right and left medially projecting pleonal segments 3, 4 and 5 rounded and wide apart medially.

Measurements.—Specimens to 12 mm long.

Etymology.—The name *chilensis* refers to the country in which the species was collected.

Type-locality.—Montemar, Chile (a few kilometers north of Valparaiso). Under rocks and in crevices high on a cliff facing the sea in the spray zone.

Distribution.—Known only from the type-locality.

Disposition of types.—Type-specimens have been deposited in the National Museum of Natural History (Smithsonian Institution): holotype male USNM

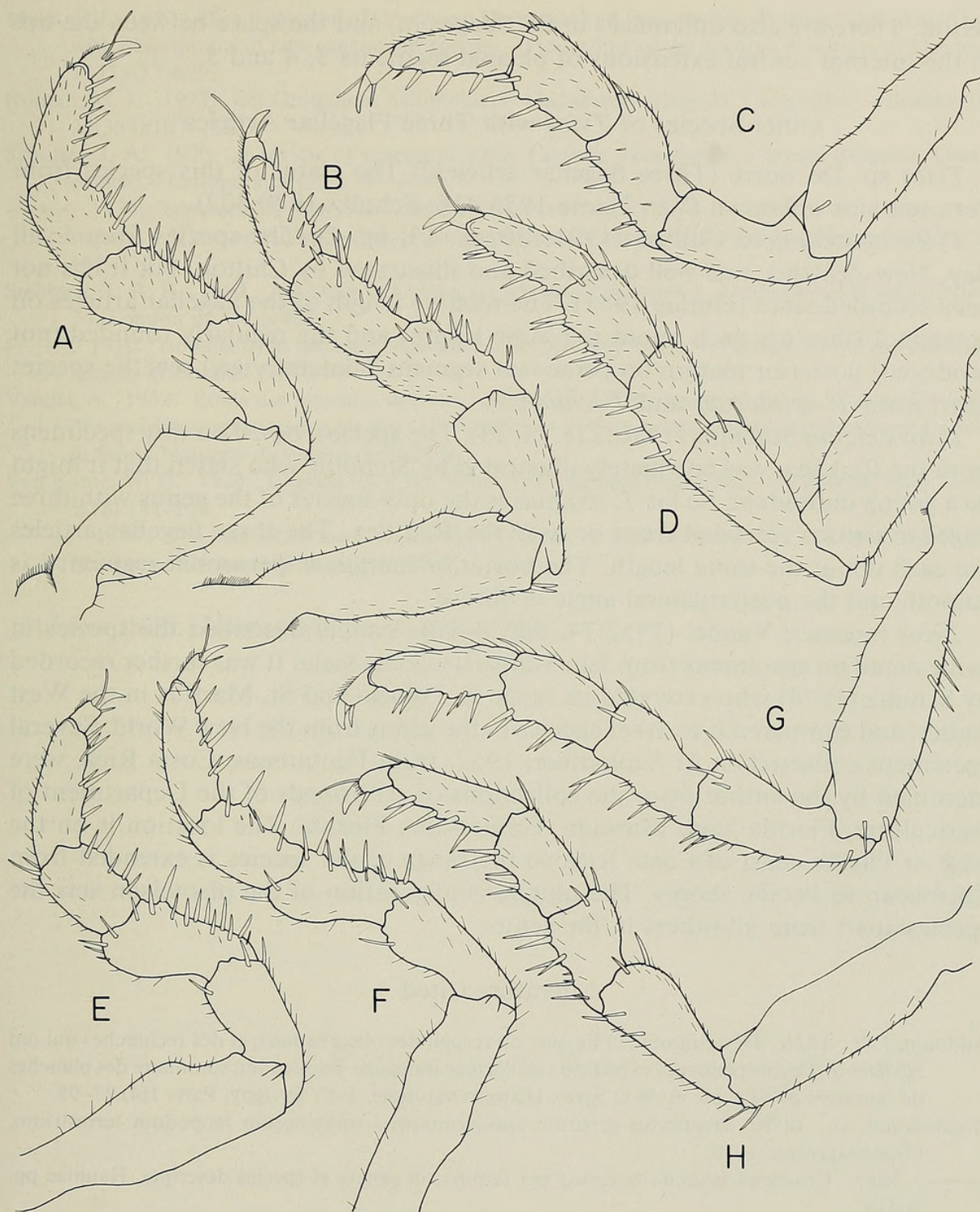


Fig. 5. *Tylos chilensis*: A–D, Male peraeopods, I, II, VI and VII; E–H, Female peraeopods I, II, VI and VII.

204144; allotype female USNM 204415; paratypes male and females USNM 204416.

Affinities.—The new species differs from all other members of the genus with three flagellar articles in that it is the only one with a notch on the posterolateral edge of peraeonal segment I. It differs from *T. spinulosus*, as redescribed here, in that there is less of a protrusion or process on the posterior margin of the pleo-

telson. There are also differences in the shapes of, and the space between the tips of the internal ventral extensions of pleonal segments 3, 4 and 5.

Other Species of *Tylos* with Three Flagellar Articles

Tylos sp. De Borre (Three flagellar articles?) The status of this species from Peru remains unknown (Van Name 1936:416; Schultz 1970:302).

Tylos neozelanicus Chilton (1901:120, pl. 13, fig. 2). The species from Lyall Bay, New Zealand, was well described and illustrated by Chilton, but it has not been recorded since (Hurley 1961). The relative length of the flagellar articles on antenna 2 (they are each about the same length) and the regularly rounded (not produced) posterior margin on peraeonal segment I (lateral view) sets the species apart from *T. spinulosus* and *T. chilensis*.

Tylos exiguus Stebbing (1910:228, pl. 23). The species, based on tiny specimens from the Red Sea, was adequately illustrated by Stebbing who stated that it might be a young individual. So far *T. exiguus* is the only species of the genus with three flagellar articles recorded from or near the Red Sea. The three flagellar articles are each about the same length. The posterior margin of peraeonal segment I is smooth and the posterolateral angle is obtuse.

Tylos wegeneri Vandel (1952:74, figs. 4–10). Vandel described the species in some detail on specimens from Isla Margarita, Venezuela. It was further recorded by Schultz (1974) who extended its range to Tobago and St. Martins in the West Indies, and compared it to other species in the genus from the New World. Several specimens collected on 21 September, 1957, from Puntarenas, Costa Rica, were identified by the author from the collections of arthropods of the Department of Agriculture, Florida State Museum, Gainesville, Florida. The location is on the west or Pacific coast of Costa Rica so the range of the species is extended from Caribbean to Pacific shores. The unique configuration of the pleotelson sets the species apart from all others in the genus.

Literature Cited

- Audouin, J.-V. 1826. Description de l'Égypte, ou recueil des observations, et des recherches qui ont été faites en Égypte pendant l'expédition de l'armée française. Explication sommaire des planches de crustacés de l'Égypte et de la Syrie. Histoire naturelle, J.-C. Savigny, Paris 1(4):77–98.
- Budde-Lund, G. 1879. Prospectus generum specierumque Crustaceorum Isopodum terrestrium. Copenhagen pp. 1–10.
- . 1885. Crustacea Isopoda terrestria per familias et genera et species descripta. Hauniae pp. 1–319.
- . 1908. Die Landisopoden der deutschen Südpolar-Expedition 1901–1903, mit Diagnosen verwandter Arten.—Deutsche Südpolar-Expedition 9(Zool. I):69–92.
- Chilton, C. 1901. The terrestrial isopods of New Zealand.—Transactions of the Linnean Society of London (2) 8(4):99–152.
- . 1910. Additions to the terrestrial Isopoda of New Zealand.—Transactions of the New Zealand Institute 42:286–291.
- Dana, J. D. 1853. Report on the Crustacea of the United States Exploring Expedition. Part II. United States Exploring Expedition during the years 1838, 1839, 1840, 1841, 1842, under the command of Charles Wilkes, U.S.N. 14. Crustacea (Isopoda pp. 696–805). Sherman, Philadelphia.
- Ferrara, F., and S. Taiti. 1979. A check-list of terrestrial isopods from Africa (South of the Sahara).—Monitore Zoologico Italiano (N.S.) Supplemento 12(10):89–215.
- Hurley, D. E. 1961. A checklist and key to the Crustacea Isopoda of New Zealand and the subantarctic islands.—Transactions of the Royal Society of New Zealand 1(20):259–292.

- Miers, E. J. 1877. On a collection of Crustacea, Decapoda and Isopoda, chiefly from South America, with descriptions of new genera and species.—Proceeding of the Zoological Society of London 1877:653–679.
- Roman, M.-L. 1977. Les Oniscoides halophiles de Madagascar (Isopoda, Oniscoidea).—Beaufortia 26(334):107–152.
- Schultz, G. A. 1970. A review of species of *Tylos* Latreille from the New World (Isopoda, Oniscoidea).—Crustaceana 19(2):297–305.
- . 1974. Terrestrial isopod crustaceans (Oniscoidea) mainly from the West Indies and adjacent regions. I. *Tylos* and *Ligia*.—Studies on the fauna of Curaçao and other Caribbean Islands 45: 162–173.
- Stebbing, T. R. R. 1893. A history of Crustacea: Recent Malacostraca. International Science Series 74, London pp. xvii–466.
- . 1910. Isopoda from the Indian Ocean and British East Africa.—Transactions of the Linnean Society of London (2) 14:83–122.
- Vandel, A. 1952. Étude des isopodes terrestres récoltes au Vénézuéla par le Dr. G. Marcuzzi, suivie de considérations sur le peuplement deu Continent de Gondwana.—Memoire del Museo Civico di Storia Naturale di Verona 3:59–203.
- Van Name, W. G. 1924. Isopods from the Williams Galapagos Expedition.—Zoologica, New York 5(18):181–210.
- . 1936. The American land and fresh-water isopod Crustacea.—Bulletin of the American Museum of Natural History 71:1–535.

15 Smith St., Hampton, New Jersey 08827.



Schultz, G A. 1983. "2 Species Of Tylos From Chile With Notes On Species Of Tylos With 3 Flagellar Articles Isopoda Oniscoidea Tylidae." *Proceedings of the Biological Society of Washington* 96, 675–683.

View This Item Online: <https://www.biodiversitylibrary.org/item/107577>

Permalink: <https://www.biodiversitylibrary.org/partpdf/45367>

Holding Institution

Smithsonian Libraries and Archives

Sponsored by

Biodiversity Heritage Library

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Biological Society of Washington

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.