

NEW RECORD OF SPHAEROMATIDAE (ISOPODA) FROM THE
BRAZILIAN SOUTHERN COAST: *DYNAMENELLA DIANAE*
(MENZIES, 1962) ¹⁾

BY

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INTRODUCTION

*Dynamenella diana*e was first reported from Bahia de San Quintin, Baja California, Mexico (Menzies, 1962). In 1968 the species was found in Mayaguez Bay, Puerto Rico. Now the distribution of *D. diana*e is considerably extended southward to southern Brazil, at Baía de Santos and São Sebastião, being the first record of this species in southern Atlantic waters.

*Dynamenella diana*e was briefly described by Menzies (1962), who only considered the general aspect of the body and the morphology of the pleopods 3 and 4 of the male. The author did not describe in detail the extremely interesting sexual dimorphism occurring in this species.

As I have abundant material of *Dynamenella diana*e (396 specimens) in several stages of development I thought it useful to give a complete and fully illustrated redescription of the species. Notes on the habitat of *D. diana*e and a key to the species of *Dynamenella* from Brazil are also included in this report.

Key to the species of *Dynamenella* found in Brazil

1. Pereon smooth, with epimeric sutures; in the adult male, pleotelson with the apical notch open posteriorly and with 2 slight ridges tapering forwards; uropods relatively slender, not extending beyond the pleotelson *D. tropica* Loyola e Silva
- Pereon with microtubercles or ridges, without epimeric sutures; in the adult male, pleotelson with the apical notch closed and constricted posteriorly forming a foramen; uropods broad, extending beyond the pleotelson 2
2. Pereon surface microtuberculate; pleotelson without a median large tubercle in front of the foramen; apical notch in adult males with a slight median process *D. antonii* Loyola e Silva
- Pereon surface with horizontal ridges on pereonites IV-VII; pleotelson with a median large tubercle in front of the foramen; apical notch in adult males with a prominent median process *D. diana*e (Menzies)

*Dynamenella diana*e (Menzies, 1962) (figs. 1 to 27)

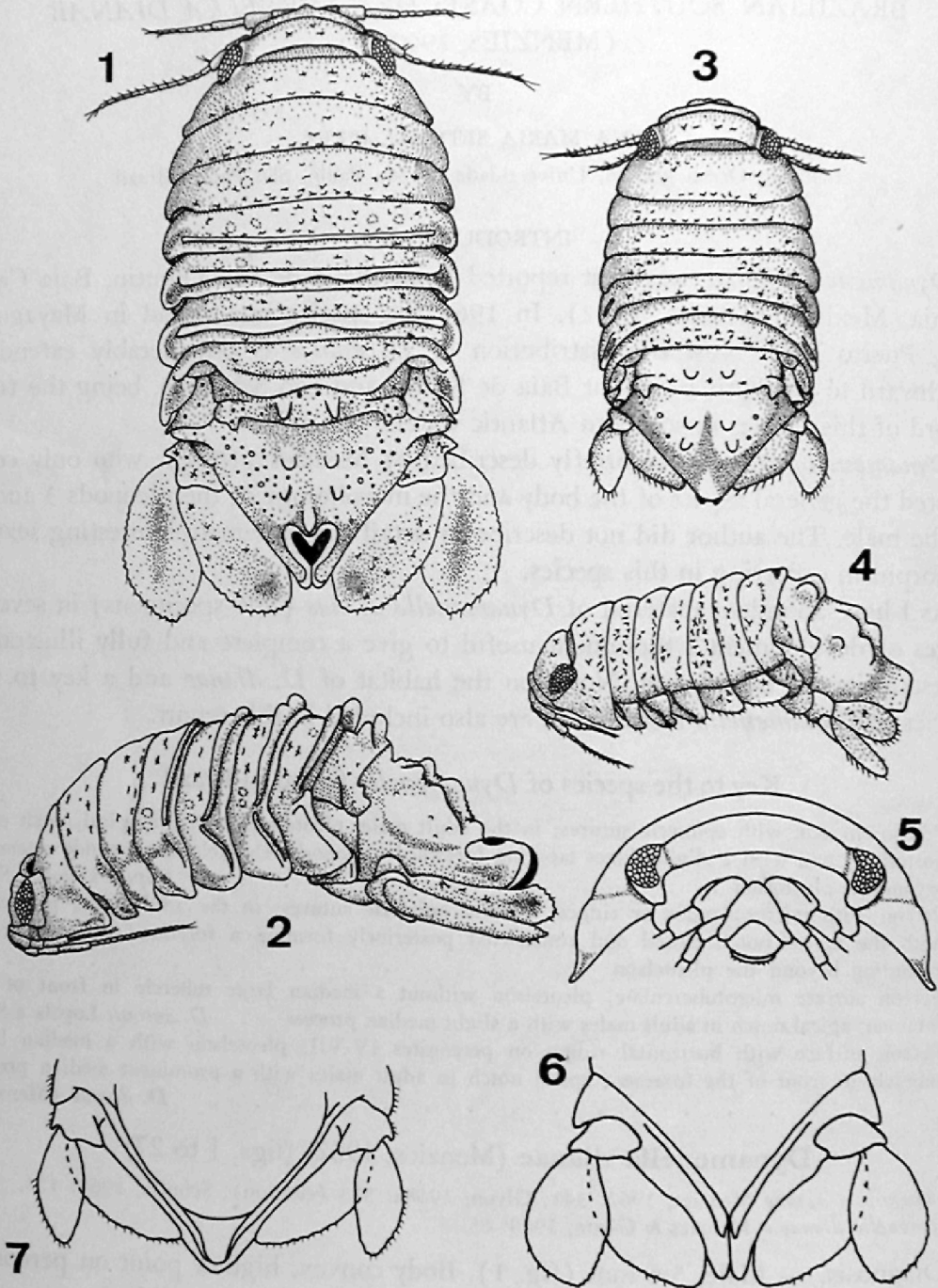
*Dynamenopsis diana*e Menzies, 1962: 341; Glynn, 1968a: 573 (citation); Schultz, 1969: 123.
*Dynamenella diana*e - Menzies & Glynn, 1968: 63.

Diagnosis. — Male, 5.6 mm (fig. 1). Body convex, highest point on pereonite IV. Color light yellow with brown chromatophores and roundish orange spots

¹⁾ Publication n° 441 of the Instituto Oceanográfico, Universidade de São Paulo.

scattered over the body; a pair of circular black spots on first pleonite; uropods white translucent.

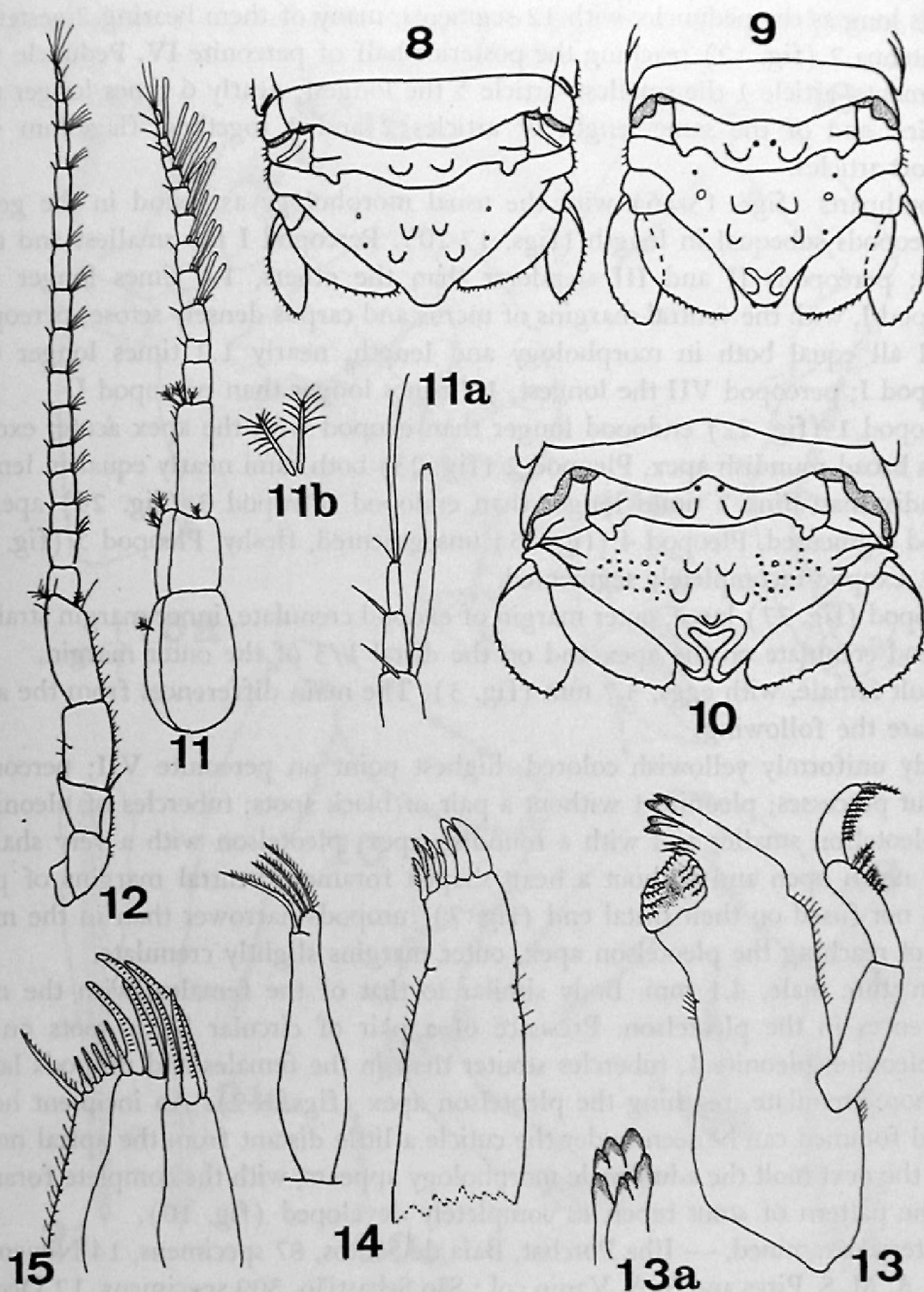
Head narrower than the body, nearly 5 times broader than long (fig. 5); epistoma triangular with blunt angles, labrum triangular; eyes large, dark brown in color.



Figs. 1-7. *Dynamenella diana* (Menzies). 1, 2, 5, 6, adult male, 5.6 mm long; 3, 4, 7, adult female, 3.7 mm long. 1, body, dorsal; 2, body, lateral; 3, body, dorsal; 4, body, lateral; 5, head, ventral; 6-7, pleotelson, ventral.

Pereon, pereonities IV to VII raised in prominent transverse ridges that increase in height from the fourth to the seventh pereonite; first ridge with outer margin straight, the other ridges bilobed (fig. 2).

Pleon microtuberculate. Pleonite 1 without free segment, with one incomplete suture and two conical acute tubercles placed on each side of midline. Pleotelson



Figs. 8-15. *Dynamenella dianae* (Menzies). 8, adult female, 3.7 mm long; 9, immature male, 4.1 mm long; 10-15, adult male, 5.6 mm long. 8-10, pleotelson, dorsal view; 11, 11a-b, antenna 1, left, apex of flagellum, sensorial setae from peduncle; 12, antenna 2, left; 13, 13a, left mandible, lacinia mobilis; 14, maxilla 1, left; 15, maxilla 2, left.

triangular with 2 pairs of large rounded tubercles, the anterior pair closer to the midline; apex with a heart-shaped foramen which has a stout tubercle in front of it; ventral margins fused on their distal end (figs. 1, 6).

Antenna 1 (fig. 11) reaching posterior margin of pereonite I. Peduncle with 3 segments, the first 2.0 times wider than the third and of the same length; flagellum as long as the peduncle, with 12 segments, many of them bearing 2 aesthetes.

Antenna 2 (fig. 12) reaching the posterior half of pereonite IV. Peduncle with 5 segments, article 1 the smallest, article 5 the longest, nearly 6 times longer than the first and of the same length of articles 2 and 3 together; flagellum with 16 short articles.

Mouthparts (figs. 13-16) with the usual morphology as found in the genus.

Pereopods subequal in length (figs. 17-20). Pereopod I the smallest and most robust; pereopods II and III slenderer than the others, 1.4 times longer than pereopod I, with the ventral margins of merus and carpus densely setose; pereopods IV-VI all equal both in morphology and length, nearly 1.2 times longer than pereopod I; pereopod VII the longest, 1.7 times longer than pereopod I.

Pleopod 1 (fig. 22) endopod longer than exopod with the apex acute; exopod with a broad roundish apex. Pleopod 2 (fig. 23) both rami nearly equal in length; appendix masculina 2 times longer than endopod. Pleopod 3 (fig. 24) apex of exopod segmented. Pleopod 4 (fig. 25) unsegmented, fleshy. Pleopod 5 (fig. 26) fleshy, exopod incompletely segmented.

Uropod (fig. 27) large, outer margin of exopod crenulate, inner margin straight; endopod crenulate on the apex and on the distal 1/3 of the outer margin.

Adult female, with eggs, 3.7 mm (fig. 3). The main differences from the adult male are the following:

Body uniformly yellowish colored, highest point on pereonite VII; pereonites without processes; pleonite 1 without a pair of black spots; tubercles of pleonite 1 and pleotelson smaller and with a roundish apex; pleotelson with a very shallow apical notch open and without a heart-shaped foramen; ventral margins of pleotelson not fused on their distal end (fig. 7); uropods narrower than in the males and not reaching the pleotelson apex, outer margins slightly crenulate.

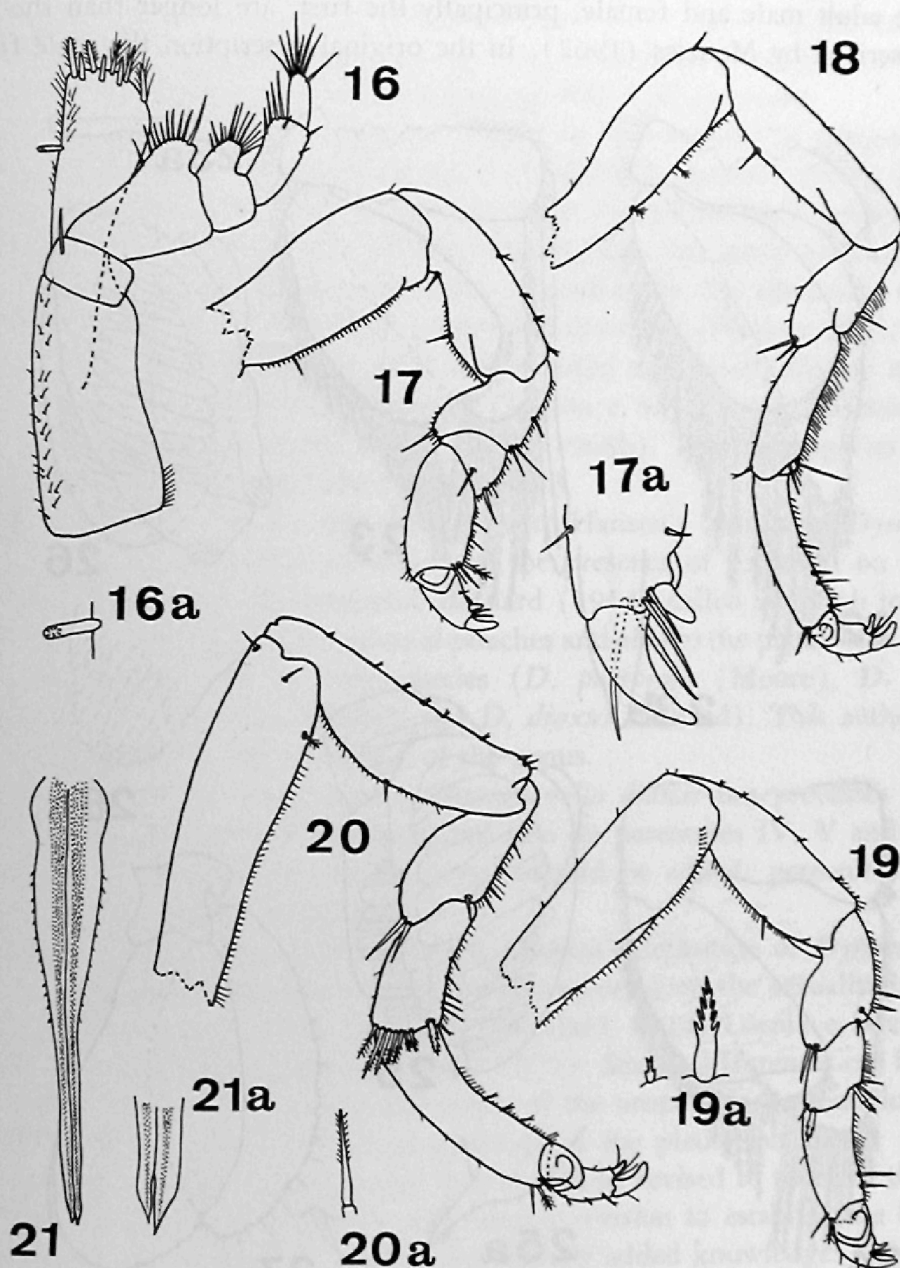
Immature male, 4.1 mm. Body similar to that of the females, with the main differences in the pleotelson. Presence of a pair of circular black spots on the first pleonite; pleonite 1, tubercles stouter than in the females and uropods larger and more crenulate, reaching the pleotelson apex (figs. 8-9). An incipient heart-shaped foramen can be seen under the cuticle a little distant from the apical notch. After the next molt the adult male morphology appears, with the complete foramen and the pattern of stout tubercles completely developed (fig. 10).

Material examined. — Ilha Porchat, Baía de Santos, 87 specimens, 14 November 1978, A. M. S. Pires and S. A. Vanin col.; São Sebastião, 309 specimens, 12 December 1978, A. M. S. Pires and S. A. Vanin col. All specimens are deposited at Instituto Oceanográfico, Universidade de São Paulo.

Distribution. — Bahia de San Quintin, Baja California, Mexico (type-locality)

(30°30'N); Mayaguez Bay, Puerto Rico (18°15'N); São Sebastião and Ilha Porchat, São Paulo State, Brazil (23°49'S and 24°S respectively).

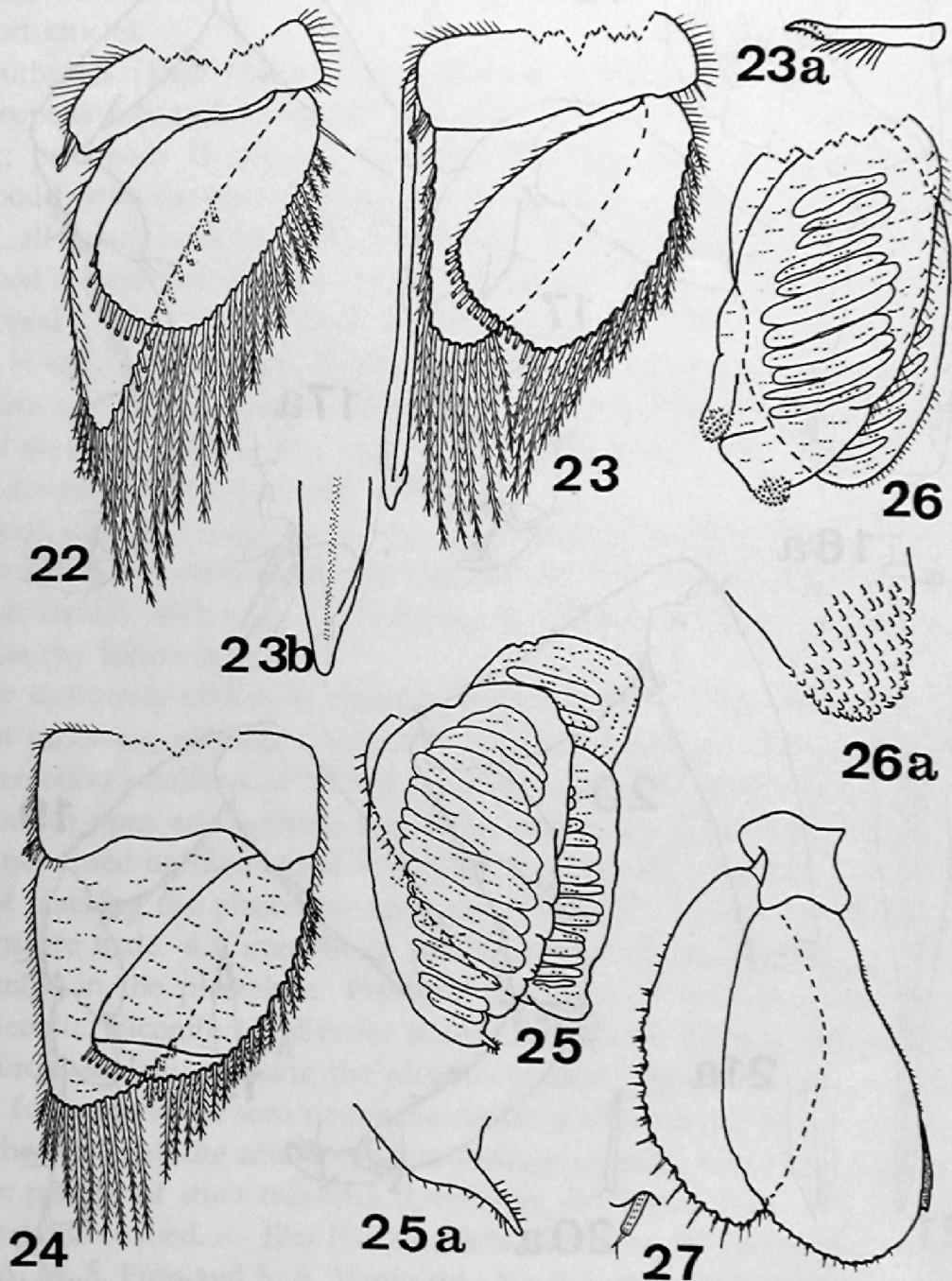
Habitat. — *Dynamenella diana*e was found on intertidal rocks, under *Chiton tuberculatus* L., in dead barnacle shells, on rocks with algae (Menzies, 1962; Menzies & Glynn, 1968). In Brazil the species was collected on intertidal substrates: the green algae *Ulva*, and *Enteromorpha*, empty tubes of the polychaete *Phrag-*



Figs. 16-21. *Dynamenella diana*e (Menzies), adult male, 5.6 mm long. 16, 16a, maxilliped, left, and the single coupling hook; 17, 17a, pereopod I, left, dactylus; 18, pereopod II, left; 19, 19a, pereopod VI, left, setae from the lateral margin of the ischium and from the distal margin of the carpus; 20, 20a, pereopod VII, left, seta from the distal margin of the carpus; 21, 21a, penis, with the apex enlarged.

matopoma lapidosa Kinberg and in dead shells of the barnacles *Tetraclita* and *Chthamalus*, both in exposed and sheltered places. Besides the large degree of exposition to wave action, *Dynamenella diana*e can also stand very polluted waters of Mayaguez Bay (Menzies & Glynn, 1968) and Baía de Santos.

Remarks. — *Dynamenella diana*e found on the Brazilian coast presents some peculiarities when compared with the specimens from Mexico and Puerto Rico. Both the adult male and female, principally the first, are longer than the specimens described by Menzies (1962). In the original description the male figured



Figs. 22-27. *Dynamenella diana*e (Menzies), adult male, 5.6 mm long. 22, pleopod 1, left; 23, 23a-b, pleopod 2, left, coupling hook, apex of the male stylet; 24, pleopod 3, left; 25, 25a, pleopod 4, left, apex of the endopod; 26, 26a, pleopod 5, left, apex of the exopod; 27, uropod, left, with enlarged seta from the lateral margin of the exopod.

has transverse ridges only on pereonites VI and VII; the female has no sculptures when viewed dorsally, except "only a single swelling medially" (Menzies, 1962) and the apical notch on the pleotelson seems to be more excavated than in our specimens.

DISCUSSION

The genus *Dynamenella* was erected by Hansen in 1905 to accommodate the species *Dynamenella perforata* (Moore). *Dynamenella diana*e differs from Hansen's definition of the genus in the following characteristics: exopod of the pleopod 3 articulated, marsupial pouch internal, pereon with processes.

The presence or absence of an articulation on the exopod of pleopod 3 is a controversial character within the genus *Dynamenella*. Hansen (1905) employed the presence or absence of this character to divide the eubranchiate Sphaeromatidae artificially into two groups. He put *Dynamenella* into the group with the exopod of the pleopod 3 inarticulated. However, according to the literature, there are many species of *Dynamenella* which present this character (Hansen, 1905; Richardson, 1906; Barnard, 1914 and 1940; Baker, 1926 and 1928; Hurley & Jansen, 1977) and many that do not present it (Loyola e Silva, 1960; Menzies, 1962; Pillai, 1965; Menzies & Glynn, 1968; Glynn, 1968b). The three species reported from Brazil possess an articulation on pleopod 3.

Other points in *D. diana*e that disagree with Hansen's concept of *Dynamenella* are the absence of marsupial lamellae and the presence of processes on the male pereonites. Referring to *Dynamenella*, Barnard (1914) called attention to the fact that the brood developed in the internal pouches and also to the presence of rounded lobes on pereonite VII of some species (*D. perforata* (Moore), *D. australis* Richardson, *D. scabricula* (Heller) and *D. dioxus* Barnard). This author added these characteristics to the definition of the genus.

Besides the internal brood pouch, *Dynamenella diana*e has processes not only on the seventh pereonite of the male, but also on pereonites IV, V and VI. For this reason to the definition of the genus should be added: pereonites with or without dorsal processes in the male.

Another point that should be revised in Hansen's definition of *Dynamenella* is the similarity between the sexes. Many authors reported on the sexually dimorphic character of the uropods and pleotelson (Barnard, 1914; Loyola e Silva, 1960; Menzies & Glynn, 1968; Hurley & Jansen, 1977). Sexual differences can be found in the length of the body, length and width of the uropods, ornamentation of the pereonites, but principally in the morphology of the pleotelson apex.

Thus, there are many characteristics that should be revised to redefine the genus *Dynamenella*. The Eubranchiatinae also need a revision to establish the limits of the genera more accurately in view of the recently added knowledge.

ACKNOWLEDGMENTS

I am grateful to Dr. T. K. S. Björnberg, Department of Zoology, Instituto de Biociências, Universidade de São Paulo, for the revision of the English text.

RÉSUMÉ

Dans ce travail est signalée par la première fois la présence de l'Isopode Sphaeromatidae *Dynamenella diana*e dans l'hémisphère sud. Cette espèce a été trouvée dans la zone littorale de Santos et de São Sebastião, côte nord de l'état de São Paulo, Brésil. Cette présence repousse de beaucoup la limite de l'espèce vers le sud, car, antérieurement, elle était connue seulement du Mexique et de Puerto Rico.

Une clef pour la détermination des espèces de *Dynamenella* connues du Brésil, une redescription complète de *Dynamenella diana*e, et une discussion sur les points critiques de la définition du genre sont aussi présentées.

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