The family Rhynchocinetidae Ortmann (Crustacea, Decapoda, Caridea) on the Brazilian coast

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ABSTRACT. The family Rhynchocinetidae Ortmann, 1890, presently in the superfamily Nematocarcinoidea Smith, 1884 and the genus *Rhynchocinetes* H. Milne Edwards, 1837, has always had a complex and controversial classification. Until recently, the only species known from the Brazilian coast was *Rhynchocinetes rigens* Gordon, 1936, which was transferred to the genus *Cinetorhynchus*. *Rhynchocinetes typus* H. Milne Edwards, 1837, the type-species of the genus, was known only from the eastern Pacific; but in the carcinological collection of the Museu de Zoologia da Universidade de São Paulo, a specimen of this species collected at Ubatuba, São Paulo was found; this is the first record of this species for the Brazilian coast. These two species are redescribed and illustrated.
KEY WORDS. Brazilian waters; *Cinetorhynchus*; redescriptions; *Rhynchocinetes*.

RESUMO. **A família Rhynchocinetidae Ortmann (Crustacea, Decapoda, Caridea) no litoral brasileiro.** A família Rhynchocinetidae Ortmann, 1890, atualmente na superfamília Nematocarcinoidea Smith, 1884 e o gênero *Rhynchocinetes* H. Milne Edwards, 1837, sempre tiveram uma discutida e complexa classificação. Até recentemente, no litoral brasileiro, a única espécie conhecida era *Rhynchocinetes rigens* Gordon, 1936, que foi transferida para o gênero *Cinetorhynchus*. A espécie *Rhynchocinetes typus*, espécie-tipo do gênero, só era conhecida do Pacífico oriental, mas na coleção carcinológica do Museu de Zoologia da Universidade de São Paulo, foi encontrado um exemplar desta espécie coletado em Ubatuba, São Paulo, que é o primeiro registro desta espécie para o litoral brasileiro. As duas espécies da família são redescritas e ilustradas.
PALAVRAS-CHAVE. Costa brasileira; *Cinetorhynchus*; redescrições; *Rhynchocinetes*.

The species of the family Rhynchocinetidae are characterized by having a movable rostrum, by fine transverse striae on the surface of the carapace and abdominal somites, by having the first two pairs of pereiopods more robust than the others, the fingers of the chelipeds with long lateral and terminal spines, and the second pereiopods with carpus entire, not subdivided (Okuno 1996).

The genus *Rhynchocinetes*, as presently recognized, can be divided into two natural groups, as suggested by Gordon (1936) in his revision of the genus. According to Holthuis (1995), the numerous species described after the work of Gordon have only confirmed the differences between these two groups, which could be established as subgenera: *Rhynchocinetes* H. Milne Edwards, 1837 *s. str*. (wherein *Rhynchocinetes typus* H. Milne Edwards, 1837 was included) and *Cinetorhynchus* Holthuis, 1995 (to which *Rhynchocinetes rigens* Gordon, 1936 was assigned). Okuno (1997) elevated these two subgenera to genus rank, as they are presently treated.

Gomes-Corrêa (1971) signaled the first occurrence of *Rhynchocinetes rigens* on the Brazilian coast, with material (three ovigerous females) collected in Tamandaré Bay, Pernambuco. This species was previously known from Florida, the Bahamas, and the Bermuda Islands in the Western Atlantic, and the Madeira Island and the Azores in the Eastern Atlantic.

During an examination of the carcinological collection of the Museu de Zoologia da Universidade de São Paulo, one specimen (MZUSP 10913) was found of *Rhynchocinetes typus*, originating from Ubatuba on the northern coast of São Paulo. Up to now, the known distribution of this species was limited to the Eastern Pacific (Chile, Peru and Ecuador).

Rhynchocinetidae Ortmann, 1890

Rhynchocinetidae Ortmann, 1890: 459; Stebbing, 1917: 26; Gordon, 1936: 75; Burkenroad, 1939: 310; Barnard, 1950: 762; Holthuis, 1955: 40; 1980: 79; Miranda & Kong U., 1970: 42; Fonseca, 1970: 19; Mendez, 1981: 69; Bruce, 1984: 209; Retamal, 1994: 25; Hendrickx, 1995: 424; Okuno, 1996: 325; 1997: 43; Ramos-Porto & Coelho, 1998: 328; Udekem d'Ácoz, 1999: 92.

Rhyncocinetidae Sharp, 1893: 118.

Rhynchocynetidae Borradaile, 1907: 467.

Rynchocinetidae Gurney, 1939: 72

Key to genera and species of Rhynchocinetidae in Brazil

1. Two dorsal teeth on carapace behind base of rostrum. Postorbital spine present, rarely reduced to a tubercle. Suborbital angle distinct, located above antennal spine. Posterior margin of abdominal somites 4 and 5 without spine above base of pleura. Rostrum articulation complete ..... *Rhynchocinetes typus*

1'. Three dorsal teeth on carapace behind base of rostrum. Postorbital spine absent. Suborbital angle continuous with antennal spine. Posterior margin of somites 4 and/or 5 with distinct spine. Rostrum articulation sometimes incomplete ..... *Cinetorhynchus rigens*

Cinetorhynchus rigens (Gordon, 1936)

Figs 1-10

Rhynchocinetes rigens Gordon, 1936: 75; text-fig. 1-7; Burkenroad, 1939: 311; Gurney, 1940: 113, text-fig. 8-10; Figueira, 1960: 1; Manning, 1961: 1, figs 1-2; Gomes-Corrêa, 1971: 105, fig. 1-10; Chace, 1972: 17; Coelho & Ramos, 1972: 144; Ramos-Porto & Coelho, 1998: 328.

Rhynchocinetes (Cinetorhynchus) rigens; Holthuis, 1955: 145.

Cinetorhynchus rigens; Okuno, 1997: 33; Udekem d'Acoz, 1999: 92.

Description: rostrum long, curved upwards, extending far beyond scaphocerite; dorsal face with about five teeth, three proximal teeth larger and more spaced, and two distal teeth smaller and closer together; ventral face with nine teeth, three proximal teeth more developed and curved, and remaining teeth much smaller and more spaced; a longitudinal crest on each lateral face of rostrum; articulation of rostrum with carapace incomplete, allowing only vertical movement. Carapace with inconspicuous vertical striae and with three stout teeth in front of articulation with rostrum, first two teeth closer together; supra-orbital spine absent. Scaphocerite narrowing distally and with stout teeth on outer margin, which extends past extremity of lamina. Antennal spine continuous with lower edge of orbit; pterogostomial angle rounded. Eyes large and rounded, cornea much wider than peduncle. Third maxillipeds nearly reaching extremity of scaphocerite. Chelipeds reaching extremity of antennal peduncle, merus with small distal lobe; carpus more than half length of palm, and palm three times length of fingers; dactylus and fixed finger terminating in several corneous spines. Ambulatory legs more slender than chelipeds, and all reaching or exceeding basal article of antenna; merus with 4-7 movable spines, carpus generally with one spine and ischium with two spines. Abdomen also with fine striae equal to those of carapace; pleura of first and third somites with oblique groove; first somite with rounded pleura and third somite terminating in point; fourth and fifth somites with small tooth on each side. Telson long, terminating in acute point and with three pairs of terminal spines: outer lateral spines diminutive, inner lateral spines longest, and mesial spines long but smaller than anterior spines; dorsal face of telson with three pairs of spines: first pair located at level of mid-telson, second and third pairs on distal third.

Geographical distribution: Western Atlantic – Bermuda Islands, Florida, Bahamas, Virgin Islands and Brazil (Pernambuco and Espírito Santo). Eastern Atlantic – Madeira Island, Azores.

Material examined: Brasil, *Pernambuco*: Tamandaré Bay, Municipality of Rio Formoso, S. Ypiranga Pinto coll., February 1967, three ovigerous females (MNRJ- 2284). *Espírito Santo*: Ilha dos Franceses, Marataizes, Gasparini & Floeter coll., 12.III.1997, one ovigerous female (MZUSP- 12920).

Remarks: the material examined, in general, concords with the description of the type-material by Gordon (1936), but some differences were noted. The type-specimen has a rostrum with eight teeth on the lower face, whereas the Brazilian specimens have nine teeth; and the articulation of the rostrum of the holotype nearly reaches the longitudinal crest, which is not the case with the specimens examined, in which the articulation is much shorter. According to Manning (1961), the rostral articulation is not visible in specimens less than 6.0 mm in carapace length. In large specimens, the rostrum is shorter in the females than in the males. In the specimens from Espírito Santo, the basal segment of the scaphocerite bears two strong spines, which are not mentioned in the works of Gordon (1936) and Gomes-Corrêa (1971). The occurrence of *Cinetorhynchus rigens* in Espírito Santo represents the southernmost limit of the species in the South Atlantic.

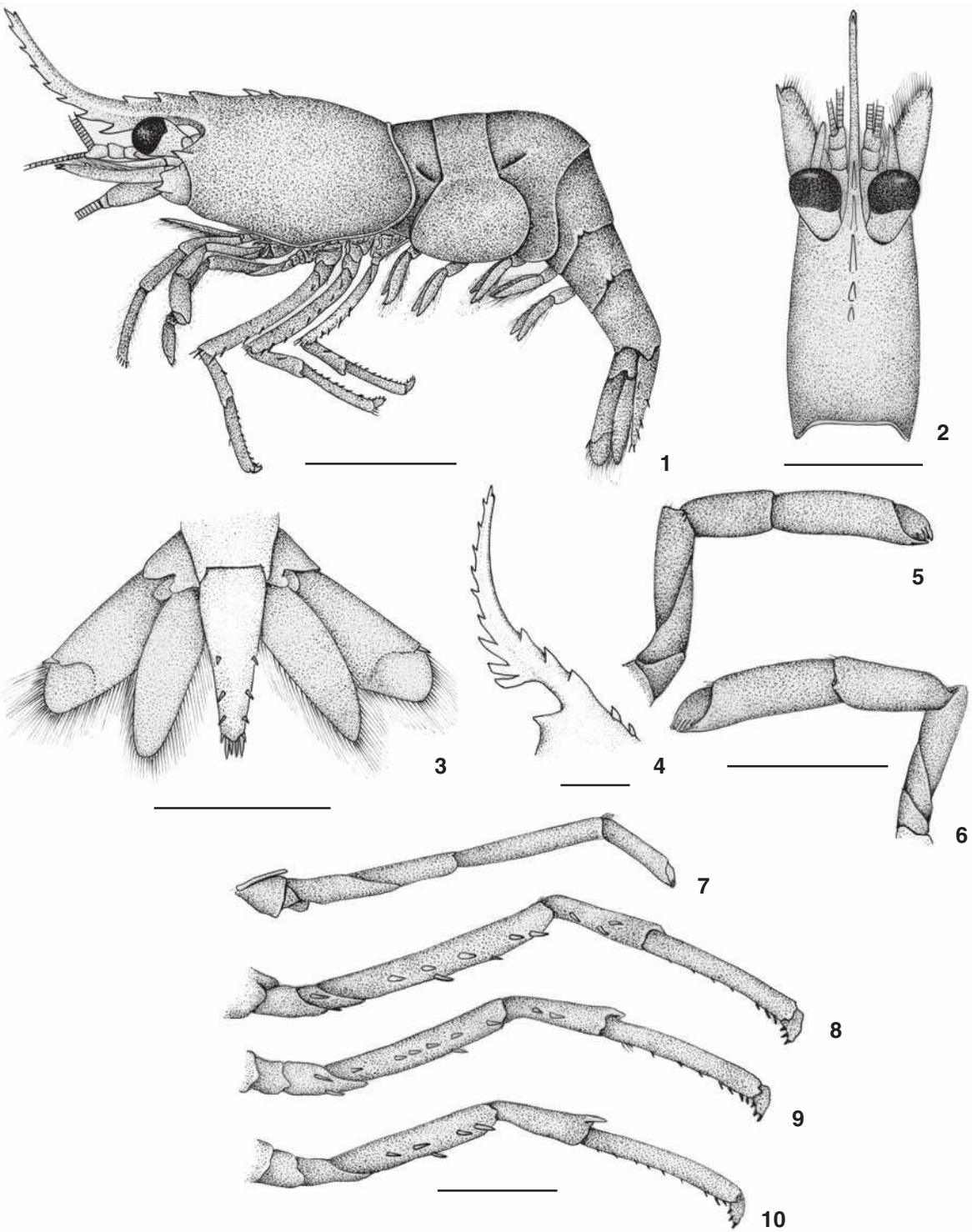
Rhynchocinetes typus H. Milne Edwards, 1837

Figs 11-20

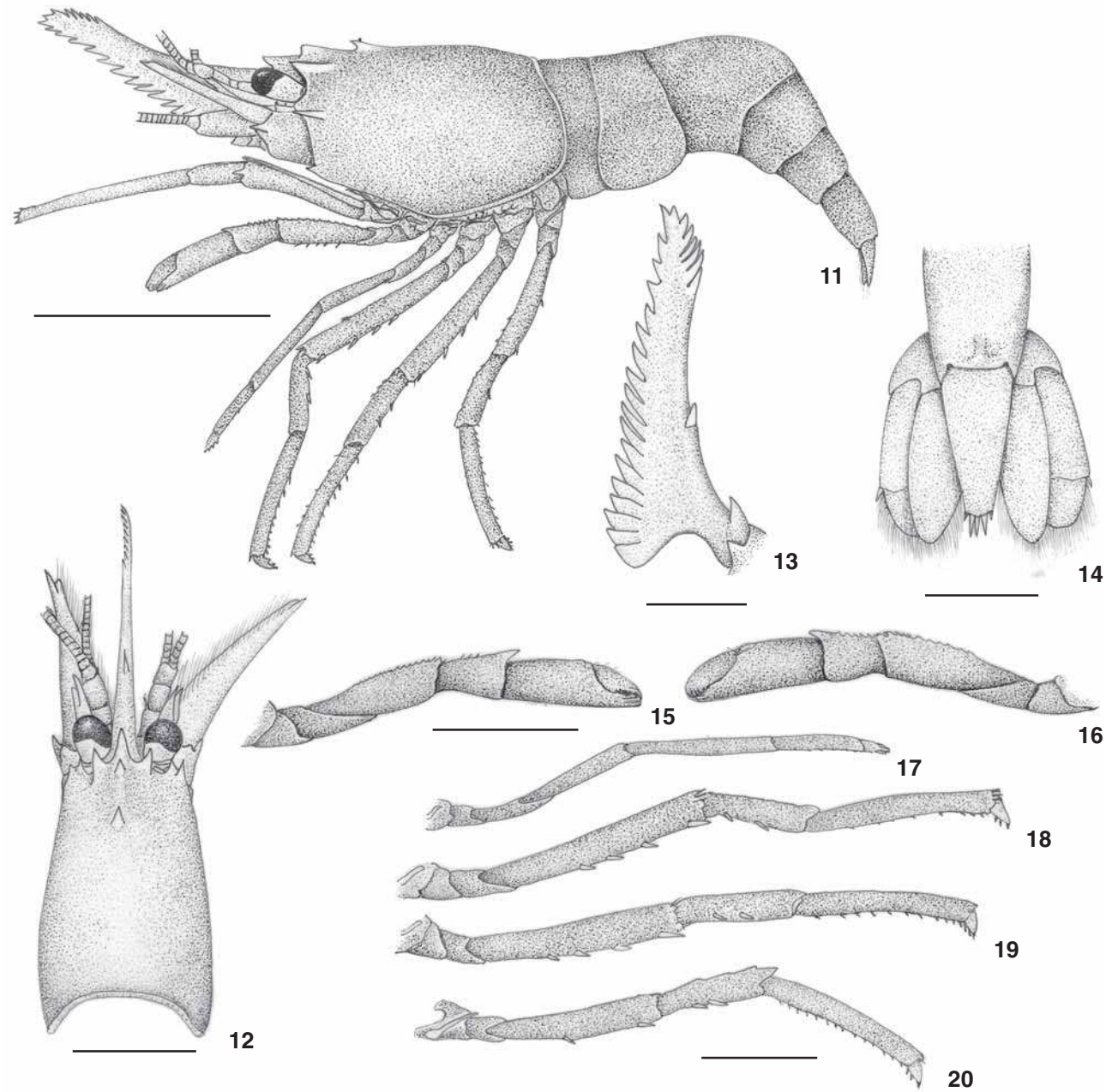
Rhynchocinetes typus H. Milne Edwards, 1837a: 383; 1837b: 168; H. Milne Edwards & Lucas, 1843: 36; White, 1847: 130; Nicolet, 1849: 246; Gibbes, 1850: 197; Heller, 1865: 120; Cunningham, 1871: 497; Miers, 1876: 77; Filhol, 1885: 52; 1886: 430; Ortmann, 1890: 507; Sharp, 1893: 118; Lenz, 1902: 734; McCulloch, 1909: 312; Rathbun, 1910: 562; Stebbing, 1920: 27; Kemp, 1925: 264; Gordon, 1936: 83; Holthuis, 1947: 78; Retamal, 1981: 14; Correa, Baeza, Hinojosa & Thiel, 2003: 33.

Rhynchocinetes typicus; Dana, 1852: 568; 1855: 12; Porter, 1940a: 147; 1940b: 313; 1941: 460.

Description: rostrum relatively long, curved upwards, reaching past the scaphocerite; upper face with two well-spaced proximal teeth on the movable part and another two behind the orbit, above the carapace and six or seven teeth in the distal third; lower face with 17 teeth, the six distal teeth with more distance between them and the remainder very closely set and less acute; distal extremity with four small teeth, and three much smaller teeth behind. Articulation of rostrum with carapace complete; next to articulation is a stout, anteriorly pointing tooth. Supra-orbital spine strong and directed forwards. Scaphocerite narrowing distally and with stout distal spine on its outer margin, which reaches past the lamina; inner margin completely provided with setae. Antennal spine continuous with lower bor-



Figures 1-10. *Cinetorhynchus rigens*, Ilha dos Franceses, Espírito Santo, ovigerous female, MZUSP 12920: (1) lateral view; (2) carapace, dorsal view; (3) telson and uropods, dorsal view; (4) rostrum, lateral view; (5) left cheliped, mesial view; (6) right cheliped, mesial view: (7) second pereopod, lateral view; (8) third pereopod, lateral view; (9) fourth pereopod, lateral view; (10) fifth pereopod, lateral view. Scale bars: (1-2) 8 mm; (3) 10mm; (4) 7 mm; (5-10) 6 mm.



Figures 11-20. *Rhynchocinetes typus*, Ubatuba, São Paulo, female, MZUSP 10913: (11) lateral view; (12) carapace, dorsal view; (13) rostrum, lateral view; (14) telson and uropods, dorsal view; (15) left cheliped, mesial view; (16) right cheliped, mesial view; (17) second pereopod, lateral view; (18) third pereopod, lateral view; (19) forth pereopod, lateral view; (20) fifth pereopod, lateral view. Scale bars: (11) 16 mm; (12) 8 mm; (13, 15, 16) 7 mm; (14, 17-20) 5 mm.

der of orbit. Eyes large and rounded, cornea much wider than peduncle. Third maxillipeds reaching past scaphocerites. Chelipeds not reaching extremity of antennal peduncle, with merus longer than carpus and with strong distal spine; merus and carpus with dorsal margin dentate: palm double the width of the fingers, which possess a corneal point and the hiatus between them covered by tufts of setae. First ambulatory leg more slender than the others and with unarmed segments. Second ambulatory leg with merus with four ventral teeth, the distal tooth larger; carpus half of merus and with two ventral teeth; propodus

with line of small spines on ventral face, which increase in size distally; dactylus short. Third leg equal to second, but with bifurcate dactylus. Fourth ambulatory leg smaller than the others, with a single ventral subterminal spine on merus, and dactylus bifurcate. Abdomen smooth, without spines; pleura of first somite somewhat rounded, of second somite strongly rounded; somites 3-5 with pleura somewhat acute; third somite higher than others, forming a hump, after which the abdomen curves downwards; sixth somite double the fifth. Telson long, terminating in acute point and with three pairs of terminal spines: outer lateral spines diminutive, inner lateral spines longest, and mesial spines long but smaller than anterior spines; dorsal face of telson also with three pairs of spines: one pair on anterior half and two pairs on posterior half. Exopods of uropods with strong subdistal spine and endopods ovate, with tufts of setae along their entire length.

Geographical distribution: Eastern Pacific – Chile (Iquique, Cavancha, Antofagasta, Caldera, Coquimbo, Viña del Mar and Valparaíso), Peru (Lobos de Afuera), Ecuador (Galápagos). Western Atlantic – Brazil (Ubatuba, São Paulo).

Material examined: Brazil, *São Paulo*: Ubatuba, H.R. Costa, coll., 12.IV.1965, 13 m, 1 ovigerous female (MZUSP-10913). Chile, Viña del Mar, Gomes-Corrêa coll., 28.I.1988, 4 females (MNRJ-2701).

Remarks: Holthuis (1951: 67) explained that in the course of his revision of the species of *Rhynchocinetes*, Gordon (1936) found that many specimens of *R. typus* from localities other than Chile belonged to other species; and that the type-locality of *R. typus*, indicated by H. Milne Edwards as the Indian Ocean, was erroneously labeled. In reality, this species was known only from Chile, Peru and Ecuador (Galapagos).

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