

# Rediscovery of *Holothuriophilus tomentosus* (Ortmann, 1894) **comb. nov.** (Crustacea, Brachyura, Pinnotheridae) in the Brazilian coast

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**ABSTRACT.** Two males and one female of *Holothuriophilus tomentosus* (Ortmann, 1894) **comb. nov.** were collected in Enseada de Ratoles, Florianópolis, Santa Catarina, in southern Brazil. Since its original description, as *Pinnaxodes tomentosus*, this species has only been collected recently, from the Pontal do Daniela, also in Florianópolis. The previously unknown male is described and the female is redescribed herein. The characteristics of this material lead us to believe that *Pinnaxodes tomentosus* should be transferred to the genus *Holothuriophilus* Nauk, 1880.

**KEY WORDS.** New combination, rediscovery.

**RESUMO.** Dois machos e uma fêmea de *Holothuriophilus tomentosus* (Ortmann, 1894) **comb. nov.** foram coletados na Enseada de Ratoles, Florianópolis, Santa Catarina, sul do Brasil. Desde sua descrição original, como *Pinnaxodes tomentosus*, esta espécie somente foi coletada recentemente no Pontal da Daniela, também em Florianópolis. O macho, ainda desconhecido, é descrito e a fêmea é redescrita. As características do material estudado nos leva a acreditar que *Pinnaxodes tomentosus* deve ser transferido para *Holothuriophilus* Nauk, 1880.

**PALAVRAS CHAVE.** Costa brasileira, nova combinação, redescoberta.

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ORTMANN (1894) when describing *Pinnaxodes tomentosus* based on two females, gave its type locality as "Brasilien" with no information as to the exact locality. Since then the species has only been collected, from the Pontal do Daniela, Florianópolis, state of Santa Catarina, in the pallial cavity of *Cyrtopleura costata* (Linnaeus, 1758); and in August 2001 by the junior author (G.B.), who collected, also in Florianópolis (Fig. 1), two males and one female, all associated with the bivalve *Anomalocardia brasiliiana* (Gmelin, 1791). Ortmann's description was extremely succinct and accompanied by few figures, besides being restricted only to the female. All the authors who have treated this species (MOREIRA 1901, RATHBUN 1918, COELHO & RAMOS 1972, SCHMITT *et al.* 1973, MELO 1996, TAKEDA & PRINCE MASAHITO 2000) of necessity have based their interpretations on this brief original description. TAKEDA & PRINCE MASAHITO (2000) suggested that *P. tomentosus* might appropriately be transferred to the genus *Holothuriophilus* Nauk, but refrained from any action. The description of the male and redescription of the female supplied herein confirm this supposition.

## *Holothuriophilus tomentosus* (Ortmann, 1894) **comb. nov.**

*Pinnaxodes tomentosus* Ortmann, 1894: 197, pl. 23, figs 9,9i; Moreira, 1901: 39; Rathbun, 1918: 178, fig. 113; Coelho & Ramos, 1972: 197; Schmitt *et al.*, 1973: 36; Melo, 1996: 427 [fig. and map]; Takeda & Prince Masahito, 2000: 105.

Description of male. Carapace subcircular, with many punctations suggesting that pilosity has been lost, its greatest width slightly anterior to middle; posterior margin slightly convex and continuous; front slightly projecting, formed by two lobes separated by very shallow concavity; regions, except gastric region, poorly demarcated; orbits minute, the eyes filling their entire concavity (Fig. 2). Third maxilliped with propodite and dactylopropodite spatulate, positioned side by side, but with dactylopropodite not reaching extremity of propodite (Fig. 4); separation of ischiopodite from meropodite almost imperceptible. Chelipeds homochelous, their palms inflated mainly on the inner face, which is pilose; length of palm almost twice its height, broadened distally, upper and lower faces

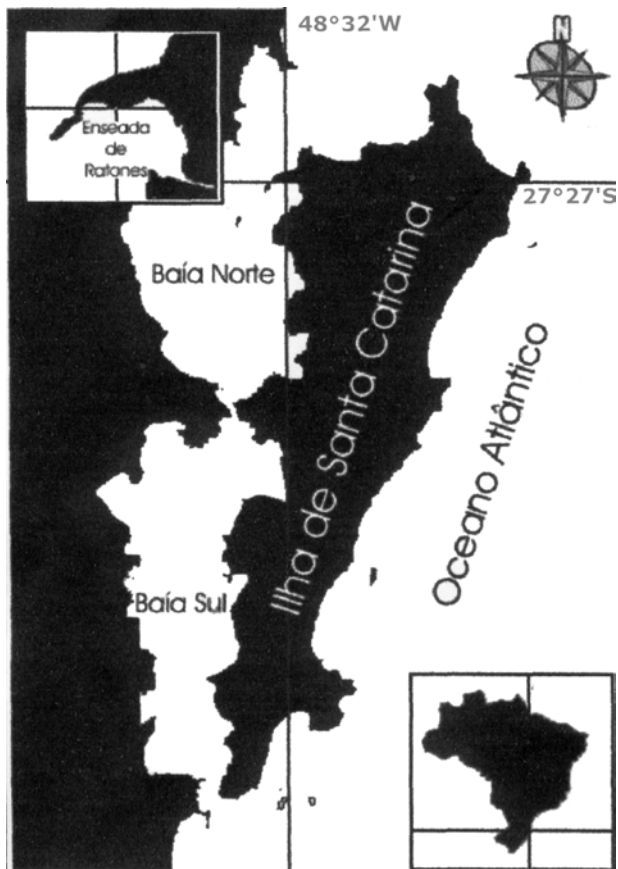


Figure 1. Map of the Enseada de Ratonés, northwest of the Ilha de Santa Catarina.

convex; cutting face of dactylus with strong triangular tooth which lodges in the space between two other teeth situated on the fixed finger; a strong proximal hiatus between the fingers (Fig. 5), lengths of fingers slightly shorter than length of palm and strongly recurved, crossing at their extremities. Ambulatory legs relatively short, with propodus much longer than wide; dactyls of first three legs recurved, dactylus of last leg nearly straight. Abdomen with all somites free; telson rounded and slightly longer than sixth somite, fourth abdominal somite with small central elevation (Fig. 6).

Redescription of female. Carapace much less resistant and less rounded and circular than that of male, its contour almost pentagonal; front projecting less than that of male, bilobate, but with deeper concavity between the lobes (Fig. 3). Third maxilliped with propodite and dactylopodite spatulate, dactylopodite not reaching extremity of propodite; separation of ischiopodite from meropodite almost imperceptible. Chelipeds relatively longer and more slender than those of male; inner face of merus concave; fingers without hiatus, touching each other along their entire lengths, although the extremi-

ties cross like those of male. Ambulatory legs with recurved dactyls, except dactylus of last leg straight. Abdomen rounded, completely covering the sternum, all somites free; telson semi-circular, as wide as sixth somite (Fig. 7).

Material examined. Brazil, Santa Catarina: Florianópolis (Enseada de Ratonés, northwest sector of Ilha de Santa Catarina, 27°27'S: 48°32'W), 2 males (MZUSP 15752) and 1 female (MZUSP 15753), G. Boehs leg., VIII.2001, associated with *Anomalocardia brasiliana*.

## DISCUSSION

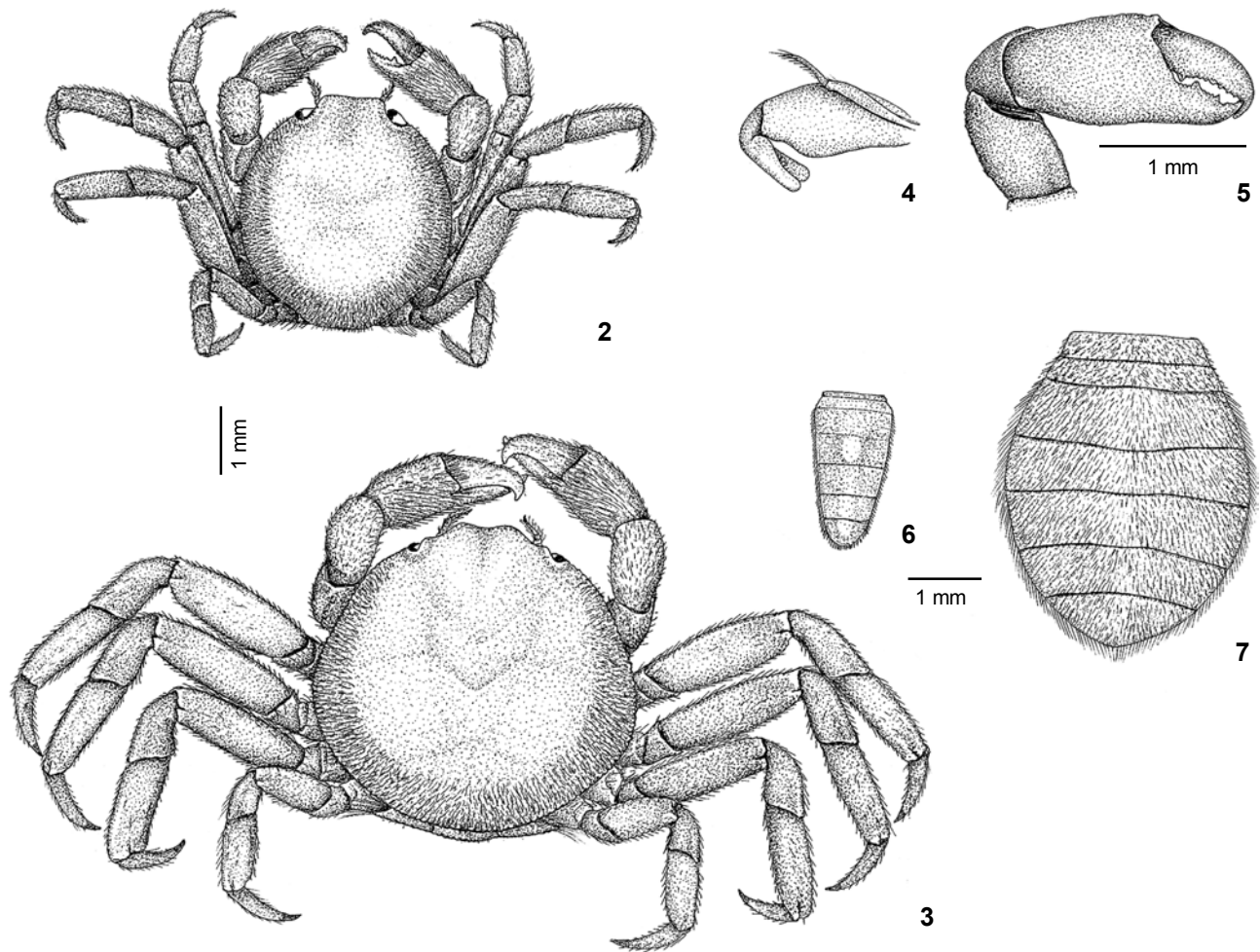
The genus *Pinnaxodes* was instituted by HELLER (1865), with *P. chilensis* (H. Milne Edwards, 1837) as the type-species. Until recently, in addition to the type-species, five species were known: *P. floridensis* Wells & Wells, 1961 [east coast of the United States (Florida)]; *P. gigas* Green, 1992 [eastern Pacific (Mexico)]; *P. major* Ortmann, 1894 [Indo-Pacific (Japan, Korea and Russia)]; *P. mutuensis* Sakai, 1939 [Indo-Pacific (Japan, Korea and Russia)] and *P. tomentosus* Ortmann, 1894 [western Atlantic (Brazil)].

The morphological differences among the genera *Pinnaxodes*; *Pinnotheres* Bosc, 1802; *Archoteres* Burger, 1895; *Zaops* Rathbun, 1900 and *Holothuriophilus* Nauk, 1880 are extremely subtle. The latter three genera were only recently resuscitated from the synonymy of *Pinnotheres* (MANNING 1993). The systematic position of certain species of *Pinnaxodes*, including *P. tomentosus*, has long been subject to doubt, dating from the comment by RATHBUN (1918): "I think that this species is very likely a *Pinnotheres*".

According to MANNING (1993), the genus *Holothuriophilus* differs from *Pinnaxodes* in: a) the form of the carapace, with its greatest width anterior to the middle in *Holothuriophilus* and posterior to the middle in *Pinnaxodes*; b) in the proportions of the ambulatory legs, which are short and with short dactyls in *Holothuriophilus* and long and with long dactyls in *Pinnaxodes*; and c) in the structure of the third maxilliped, in which the ischiopodite and meropodite are fused in *Holothuriophilus*, and separated by a suture in *Pinnaxodes*.

TAKEDA & PRINCE MASAHITO (2000) concluded that *Pinnaxodes mutuensis* Sakai, 1939, because of the morphology of its third maxilliped, should be transferred to the genus *Holothuriophilus*. They could not be as certain in relation to *Pinnaxodes tomentosus*, a little-known species, succinctly described and with figures showing little detail. However, these authors noted that it was possible to observe that the dactylopodite of the third maxilliped is somewhat spatulate, located side-by-side with the propodite, but not reaching the extremity of the propodite; and terminated their analysis suggesting that "its true systematic position may be in the genus *Holothuriophilus*, not in the genus *Pinnotheres*".

Through the description of the male and redescription of the female collected in Santa Catarina, we confirm the supposition of TAKEDA & PRINCE MASAHITO (2000).



Figures 2-7. *Holothuriophilus tomentosus* comb. nov.: (2) male, dorsal view; (3) female, dorsal view; (4) male, third maxilliped; (5) male, right cheliped; (6) male, abdomen; (7) female, abdomen.

According to MANNING (1993: 525), members of *Pinna-xodes* inhabit echinoids, while the species of *Holothuriophilus* live in holothurians. However, the two species transferred from *Pinna-xodes* to *Holothuriophilus* (*H. mutuensis* and *H. tomentosus*) have bivalve hosts: *H. mutuensis* in *Modiolus modiolus* (Linnaeus, 1758), *Crenomytilus grayanus* (Dunker, 1853) and *Mytilus galloprovincialis* Lamarck, 1819; and *H. tomentosus*, found in Santa Catarina associated with *Cyrtopleura costata* (Linnaeus, 1758) and *Anomalocardia brasiliiana* (Gmelin, 1791).

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#### REFERENCES

- COELHO, P.A. & M.A. RAMOS. 1972. A constituição e a distribuição da fauna de Decápodos do litoral leste da América do Sul, entre as latitudes 5°N e 39°S. *Trabalhos Oceanográficos da Universidade Federal de Pernambuco*, Recife, 13: 133-236.
- HELLER, C. 1865. *Die Crustaceen. Reise der österreichischen Fregate "Novara" um die Erde in den Jahren 1857-1859 unter den Befehlen des Commodors B. von Wullerstorff-Urbair. Zoologische Theil. Crustaceen.* Wien, vol. 2, pt. 3, 280p.
- MANNING, R.B. 1993. Three genera removed from the synonymy of *Pinnotheres* Bosc, 1802 (Brachyura: Pinnotheridae).

- Proceedings of the Biological Society of Washington, Washington, 106 (3): 523-531.
- MELO, G.A.S. 1996. **Manual de identificação dos Brachyura (caranguejos e siris) do litoral brasileiro**. São Paulo, Plêiade/FAPESP, 603p.
- MOREIRA, C. 1901. Contribuições para o conhecimento da fauna brasileira. Crustáceos do Brazil. **Archivos do Museu Nacional do Rio de Janeiro**, Rio de Janeiro, 11: 1-151.
- ORTMANN, A.E. 1894. Abtheilung: Brachyura (Brachyura Genuina Boas), III. Unterabtheilung: Cancroidea, 2. Section: Cancrinea, 2. Gruppe: Catometopa, Die Decapoden-Krebse des Strassburger Museums, mit besonderer Berücksichtigung der von Herrn Dr. Doderlein bei Japan und bei den Liu-Kiu Inseln gesammelten und zur Zeit im Strassburger Museum aufbewahrten Formen, VIII. **Zoologische Jahrbücher, Abteilungen Systematik, Geographie der Tiere**, Jena, 7: 683-772.
- RATHBUN, M.J. 1918. The Grapsoid crabs of America. **Bulletin of the United States National Museum**, Washington, 97: 1-445.
- SCHMITT, W.L.; J.C. McCAIN & E.S. DAVIDSON. 1973. **Crustaceorum Catalogus. Decapoda I. Brachyura I, pars 3, Pinnotheridae**. H.E. GRUNNER & L.B. HOLTHUIS (Eds). Den Haag, W. Junk, 160p.
- TAKEDA, M. & PRINCE MASAHITO. 2000. Systematics notes on the Pinnotherid crabs of the genus *Pinnaxodes* (Crustacea: Decapoda: Brachyura). **Bulletin of Natural Sciences of the Museum of Tokyo, ser. A**, 26 (3): 99-112.

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