

Brasiliotelphusa, a new Brazilian freshwater-crab genus (Crustacea: Decapoda: Pseudothelphusidae).

By

CELIO MAGALHÃES,
Manaus,

&

MICHAEL TÜRKAY,
Frankfurt a. M.

With 2 figures.

A b s t r a c t: *Brasiliotelphusa* n. g. is introduced to include *B. tapajoense* n. sp. The new genus is the most primitive within the Kingsleyini. It also marks the southernmost occurrence of pseudothelphusids in the eastern part of South America.

That the Brazilian Pseudothelphusidae are poorly known is still true, despite the publication of several treatments of the family (BOTT 1969, PRETMANN 1972, RODRIGUEZ 1982). The most comprehensive account of Brazilian pseudothelphusids remains that of BOTT (1969). This author had at his disposal the rich collections of H. SIOLI and E. J. FITTKAU, brought together during several expeditions to Amazonia and prolonged sojourns there. The number of pseudothelphusid specimens mentioned in BOTT's work is relatively low, and we have therefore examined not only this material, but also that in the collection of the Museu de Zoologia da Universidade de São Paulo. Although this collection includes many river crabs, the pseudothelphusids are not well represented. This may be due to the very localised occurrence of these crabs and the fact that they are difficult to catch. The discovery of the present new genus supports the hope that future systematic collections will reveal many more forms.

This work would not have been possible without the help of G. SCHMIDT DE MELO (Curator of Crustacea of the Museu de Zoologia da Universidade de São Paulo, São Paulo, Brazil) who loaned to us all the freshwater-crab material in the São Paulo collection. We thank him and the Director of this museum, P. E. VANZOLINI, very much for their assistance. Thanks are also due to S. ALEXANDER (Pietermaritzburg) for checking the English of our manuscript. One of us (C. M.) owes thanks to the Max Planck Gesellschaft for a fellowship as part of the agreement between the Max Planck Institut für Limnologie, Plön/W-Germany, and the Instituto Nacional de Pesquisas da Amazônia, Manaus/Brazil, allowing him to work on freshwater-crabs at the Forschungsinstitut Senckenberg, Frankfurt a. M.

We have used the following abbreviations: EPA = Expedição Permanente na Amazônia; INPA-CR = Coleção Geral de Arthropoda do Instituto Nacional de Pesquisas da Amazônia, Seção Crustacea; MZUSP = Museu de Zoologia da Universidade de São Paulo; SMF = Senckenberg Museum Frankfurt a. M.

The measurements signify (in mm): Carapace breadth: Carapace length: Body depth: Frontal breadth.

Brasiliotbelphusa n. g.

Type species: *Brasiliotbelphusa tapajoense* n. sp.

Diagnosis: Median furrow of carapace not visible. Exopodite of the third maxilliped very much reduced, its length less than one third of the length of the outer border of endopodite ischium. Male first pleopod with leaf-like apical plate which is simple (not bifid) and exhibits a mesial spine; mesial process well separated from apical plate; spine field much reduced, not surrounded by marginal crests, situated laterally in the basal fold of the apical process.

Remarks: The present new genus clearly belongs to the Kingsleyini and is closest to *Microthelphusa* PRETZMANN 1968. It is, however, much more primitive in the structure of the male first pleopod, as the apical process is not formed by two plates unified in a longitudinal sense, but is a simple lobe. As RODRIGUEZ (1982: 156-157) has described convincingly, this unification of two plates to the apical process in *Microthelphusa* results in the typical spine field bordered by two crests. In the most primitive species of this genus, *M. forcarti* (PRETZMANN 1967), a terminal suture shows this basic bipartition of the apical plate. We believe that this is not only the explanation for the spine field morphology of *Microthelphusa* but applies also to most of the Kingsleyini with the same essential construction of the spine field area. The new genus described here is more primitive in this sense. Its spine field is not bordered by crest-like structures and the plate is simple as described above. This allows some comments on the phylogenetic implications of RODRIGUEZ' model. RODRIGUEZ suggests that the *Microthelphusa*-type pleopod could have developed from a starting point near *Strengeriana* PRETZMANN 1971. The present new genus shows that there are also more primitive forms within the Kingsleyini, which similarly could be near to the ancestors of the more advanced genera. Linking this with the fact that this primitive genus is the southernmost in the eastern area of South America, some doubts may arise about the colonisation history suggesting that the northwestern forms may be more primitive than the southeastern ones. This discussion cannot be taken further at present. Not enough is known about the Brazilian pseudothelphusids, and to date the primitive genus described here is represented by only one species. It will be interesting in future to learn if this primitive group is better represented, and if it throws new light on the phylogenetic relationships within the Kingsleyini.

Brasiliotbelphusa tapajoense n. sp.

Figs. 1-2.

Holotype: ♂ (MZUSP 6550); Rio Tapajós, Estado do Pará, Monte Cristo, 20.-28. VII. 1973, Col. EPA.

Paratypes: 2♂ 2♀ (MZUSP 6378), 1♂ 1♀ (SMF 12499), 1♂ 1♀ (INPA-CR 150), same locality as holotype. — 1♂ (SMF 4291); Estado do Pará: Rio Tapajós, Fordlândia, Igarapé do Cassepá, in mud of river-banks, 6. XII. 1956, leg. H. SIOLI.

Diagnosis: See diagnosis of genus.

Description: Carapace smooth; median furrow reduced; post frontal lobes distinct as small knobs; cervical groove distinct, beginning a little behind the anterolateral borders and ending well in front of the gastric depression; metagastric

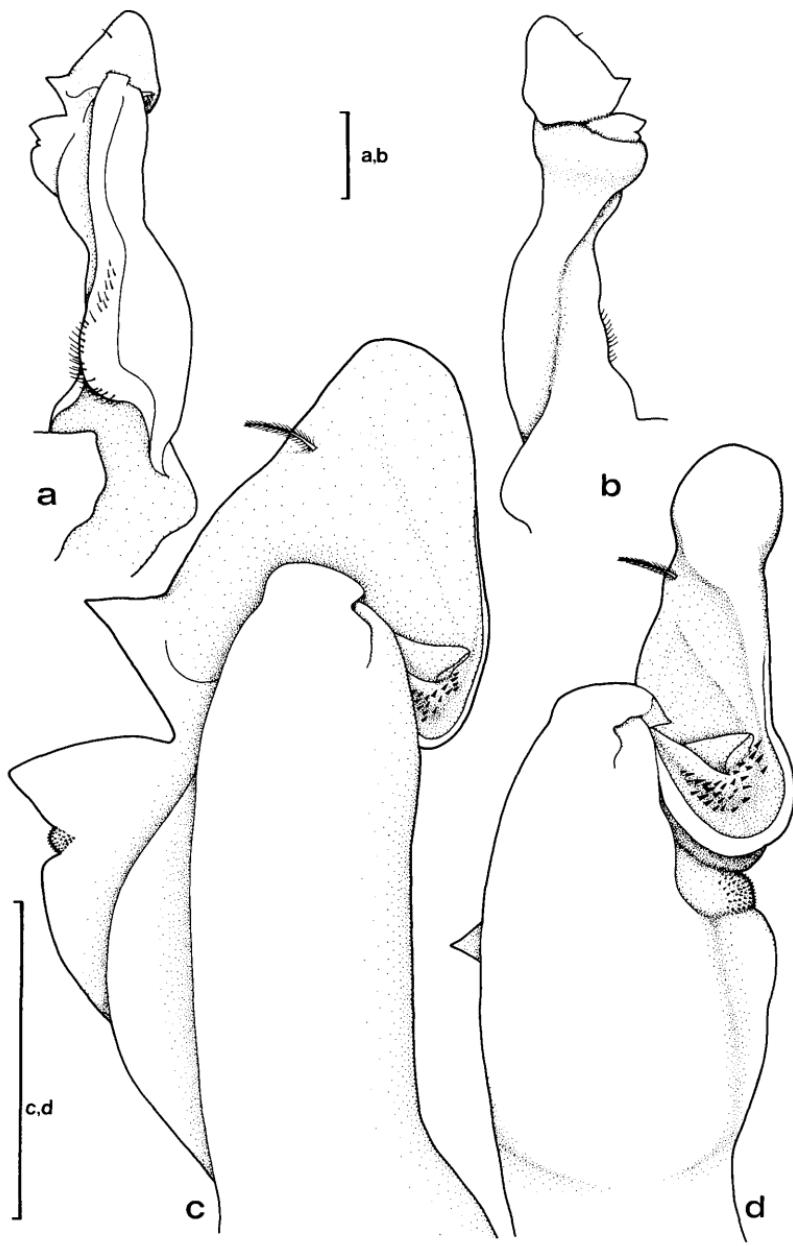
area depressed, very uneven, muscle scars abundant. Front deflexed, upper border sharp to rounded and granulated. Exorbital corner marked, its tooth tubercle-shaped and not different from the tubercles of the lower orbital border. Anterolateral border with closely set tubercles forming a crest, which is separated by a small



Fig. 1. *Brasiliothelphusa tapajoense* n.g. n.sp., holotype MZUSP 6550. — Scale = 1 cm. — Photo: Senck. Mus. (E. HAUPt).

hiatus from the exorbital corner, and ending approximately at the middle of the branchial regions.

Pterygostomial regions smooth, with sparse hairs along the outer border of the third maxillipeds.



Third maxilliped with exopodite much reduced, less than one third of external length of endopodite ischium. Ischium of endopodite without prominent structures a little longer in midline than broad. Merus with outer border gently rounded, antero-internal corner with a notch for receiving the palp, inner border with an elevated crest.

First pereiopods markedly heterochelous in both sexes. In the holotype the right cheliped is larger than the left. This seems to be most common. However, among the paratypes there is a male with the left cheliped larger. Merus with three coarsely granulated border-crests, granules extending also on the posterior face. Inner corner of carpus with a long and prominent spine, inner borders granulate. Palm in its major part smooth and shiny, the lower border with proximal granules; in the smaller cheliped also the upper border. Fingers of larger cheliped gaping, regularly beset with molar-like teeth, having smaller ones between them. In the smaller cheliped the gap is much less pronounced and the larger teeth are more triangular giving the cutting edges a saw-like appearance.

Second to fifth pereiopods relatively short. Meri with one granulate crest on upper border and two smooth ones on lower. Carpus with a rounded crest on upper border and another on posterior surface. The latter is distinct on the second pereiopods, fades away on the posterior legs, and is not at all visible on the fifth pereiopod. Propodi with two spine rows on upper and one to two irregular spine rows on lower border. Dactyli long, about $1\frac{1}{2}$ times propodi, with irregular spines more or less arranged in four rows.

Proepistome with sharp posterior and median crests, the median one meeting the front and inserted in a small notch. Epistome frontally sunken, with a triangular proeminence in its centre, which continues as a crest on the endostome; lateral endostomial ridges distinct, delimiting clearly the efferent branchial channels.

Thoracic sternites of the third maxilliped and first pereiopods completely fused. Only the suture between thoracic sternite VII and VIII meets the midline. The median furrow is distinct in the VIIth and VIIIth sternites. All episternites are separated by only a shallow and incomplete furrow from the corresponding sternites.

Abdomen with all segments free, the third one being the broadest. From there the breadth of the segments diminishes gradually. Last segment (telson) with slightly sinuate borders, tip rounded.

First male pleopod with a simple apical plate exhibiting a strong mesial spine. Mesial process separated from apical plate by a deep and sharp incision, its mesial border with a sharp spine. Spine field much reduced, open, not surrounded by marginal crests, situated laterally in the basal fold of the apical process. Stem broadened distally and knob-like in lateral view. This knob is separated from the mesial process by a sharp incision. In juveniles this knob is faint or reduced.

Measurements: 26.1 : 16.9 : 11.3 : 8.0 (Holotype ♂).

Distribution: The species is known to date only from the Rio Tapajós.

◀ Fig. 2. *Brasiliotelphusa tapajoense* n. g. n. sp., holotype, MZUSP 6550, male first pleopod.
— a) Total organ, caudal face; b) same, lateral face; c) terminal part, caudal face; d) same, caudo-lateral face. — Scales = 1 mm.

Remarks: The relations of the species have already been discussed under the genus.

Unfortunately there is very little information about the ecology of the species (G. SCHMIDT DE MELO in litt.). The only record is that of H. SIOLI, who collected his specimen in the mud of a river bank.

Zusammenfassung.

Brasiliothelphusa tapajoense n. g., n. sp. vom Rio Tapajós, Pará, Brasilien, wird beschrieben. Die Gattung nimmt innerhalb der Kingsleyini die ursprünglichste Stellung ein.

References.

- BOTT, R. (1969): Die Süßwasserkrabben Süd-Amerikas und ihre Stammesgeschichte. Eine Revision der Trichodactylidae und der Pseudothelphusidae östlich der Anden (Crustacea, Decapoda). — Abh. senckenb. naturf. Ges., 518: 1-94, text-figs. 1-6, pl. 1-24, maps 1-4; Frankfurt a. M.
- PRETZMANN, G. (1972): Die Pseudothelphusidae (Crustacea Brachyura). — Zoologica, 120: 1-182, text-figs. 1-31, pl.-figs. 1-732; Stuttgart.
- RODRIGUEZ, G. (1982): Les crabes d'eau douce d'Amérique. Famille des Pseudothelphusidae. — Faune tropicale, 22: 1-223, text-figs. 1-132; Paris.

Authors: CÉLIO MAGALHÃES, Instituto Nacional de Pesquisas da Amazônia, Departamento de Biologia Aquática e Limnologia, Caixa postal 478, 69 000 Manaus, Am., Brazil. — Dr. MICHAEL TÜRKAY, Forschungsinstitut Senckenberg, Senckenbergenlage 25, D-6000 Frankfurt a. M. 1.