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A NEW SPECIES OF THE GENUS *KINGSLEYA* FROM AMAZONIA, WITH A MODIFIED KEY FOR THE BRAZILIAN PSEUDOTHELPHUSIDAE (CRUSTACEA: DECAPODA: BRACHYURA)

Results from the cooperation between the Max-Planck-Institut für Limnologie, Arbeitsgruppe Tropenökologie, Plön, FRG, and Instituto Nacional de Pesquisas de Amazônia, Manaus, Brazil

by

CÉLIO MAGALHÃES

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Key-words: Taxonomy; *Kingsleya besti* spec. nov. (Brachyura: Pseudothelphusidae); description; Amazon basin; Brazil.

Abstract: A new species of Pseudothelphusid crab, *Kingsleya besti* spec. nov., is described from Serra do Curicuriari, northwest of the State of Amazonas, Brazil. A modified dey for identification of the Pseudothelphusid crabs occurring in Brazil is given.

Resumo: É descrita uma nova espécie de caranguejo da família Pseudothelphusidae, *Kingsleya besti* spec. nov., da Serra do Curicuriari, noroeste do Estado do Amazonas, Brasil. É fornecida uma chave de identificação modificada para as espécies de caranguejos desta família registradas para o Brasil.

Célio Magalhães, Instituto Nacional de Pesquisas da Amazônia, Depto. de Biologia Aquática, Caixa Postal 478, 69011 Manaus, AM — Brazil).

INTRODUCTION

The discovery of new forms of freshwater crabs in the Amazon basin is not very surprising since large areas are still not systematically surveyed, like the northwestern part of Brazilian Amazonia. Historically a few entomological or ichthyological collections were made, but crabs are not easily captured by the methods most commonly employed in such field work. Although these animals are rather large, much of our knowledge concerning this group in the region is based on single or few specimens, most probably collected by chance by people looking for some other kind of aquatic animals.

During a visit to the Rijksmuseum van Natuurlijke Historie in September 1988, I found a single lot with three pseudothelphusid crabs collected in the upper Rio Negro basin. Despite the few specimens, it was possible to recognize the lot as belonging to a new species; some very distinct features of the male first pleopods clearly characterized it as an undescribed species of the genus *Kingsleya*. Until now, this genus comprises three species: *K. latifrons* (Randall, 1840), *K. siolii* Bott, 1967, and *K. ytupora* Magalhães, 1986. In the present paper, the new species is described and a modified key for the Pseudothelphusid species recorded from Brazil is given. The abbreviation RMNH stands for Rijksmuseum van Natuurlijke Historie. The measurements (in mm) signify: carapace breadth: carapace length: body depth: frontal breadth. For the structures of the male first pleopods, I followed the terminology (and respective abbreviations in the figures) used by Magalhães (1986).

DESCRIPTIVE PART

Kingsleya besti spec. nov.
(figs. 1-3)

Material. — Holotype (RMNH): Brazil, State of Amazonas, Serra do Curicuriari, Rio Negro, altitude 300 m, 04.xi.1971, P.J.M. Mars, 1 ♂ (35.0:20.2:12.5:10.2), RMNH D 37401.
Paratypes. — Data as in holotype, 1 ♀ (28.0:16.3:9.5:8.7) and 1 immature ♀, not in good condition, RMNH D 37531

Description. — The carapace is smooth; the median groove is absent; the cervical grooves are distinct but shallow and rather straight, their anterior extremities do no reach the border of the carapace. The postfrontal lobules are visible as small oblique elevations. The surface of the carapace behind the front is slightly inclined anteriorly and towards the midline. The lower border of the front is sinuous and emarginate, with faint indications of tubercles; in dorsal view, it shows a concavity in its middle. The upper border of the front is well marked by a row of tubercles and roughly convex so that, in dorsal view, the lateral extremities of the lower border are visible. The metagastric area is very slightly depressed. The upper border of the orbit is rather shallow, with very faint tubercles. These tubercles are more conspicuous along the lower border. The exorbital corner is well defined. The anterolateral border of the carapace has a small notch near the exorbital corner (in the larger female it is ill-defined) and several low, small, rounded teeth.

The pterygostomial regions show abundant hairs along the outer border of the third maxillipeds. There are a few small tubercles scattered on the subhepatic regions.

The exopodite of the third maxilliped is reduced, reaching less than one third of the external length of the ischium. The outer border of the merus is gently rounded.

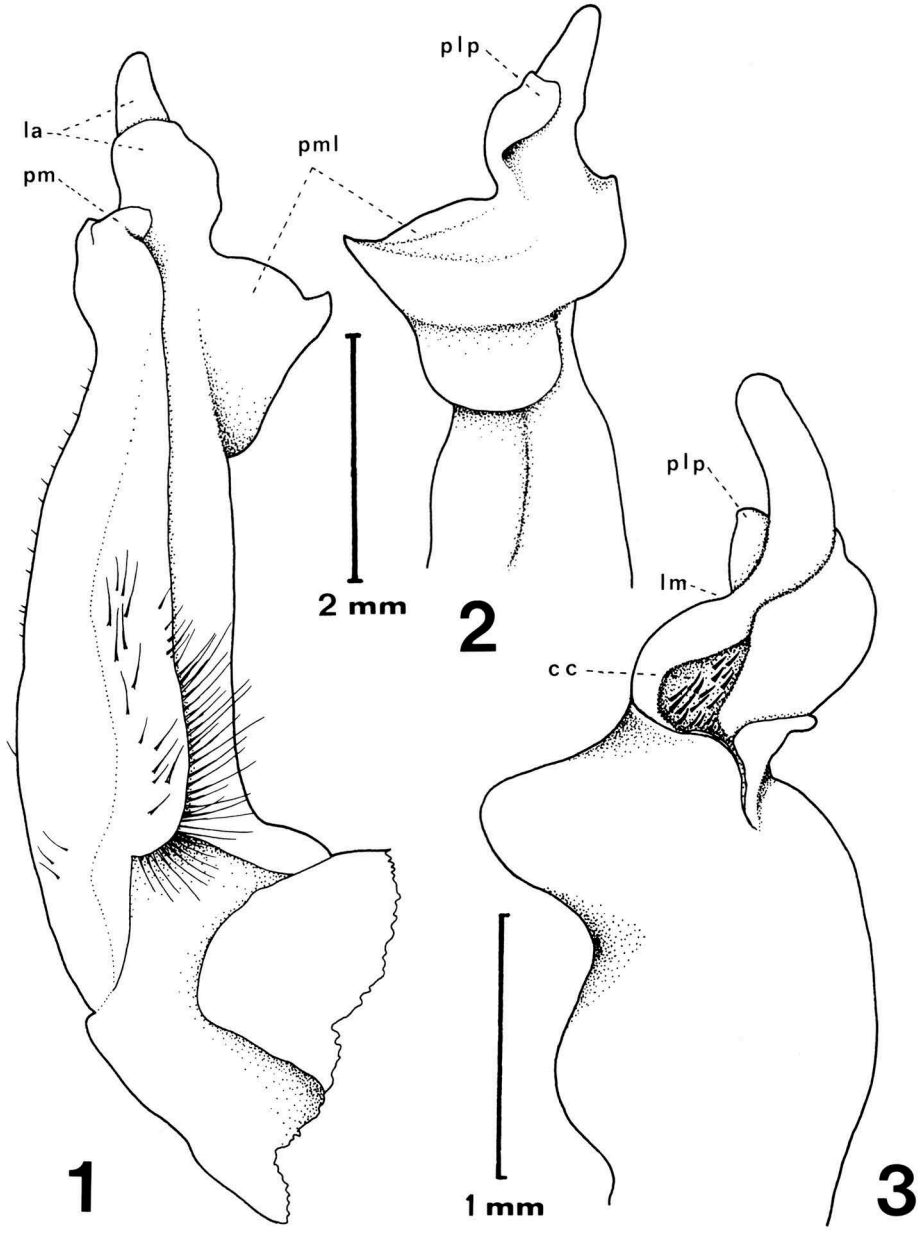
The species is heterochelous in both sexes, at least in the adults. The holotype has the right cheliped larger than the left one; in the females, the left cheliped is larger. The merus has one row of granules along its lower border, a few irregular rows on the outer upper border, and a row of eight to ten teeth along the inner upper border, these teeth become larger distally and some small tubercles may be present between the distalmost teeth. The inner border of the carpus bears a few granules and a terminal spine. The palm is smooth, except for a few minute granules proximally on the lower surface and along the upper surface. The fingers of the larger cheliped of the male holotype and of the adult female show a large gap and molar-like teeth, whereas those of the smaller cheliped show no gap and all teeth are sharp and triangular. Also in the immature female, the fingers bear sharp, triangular teeth. Regular rows of fine granules are present along the other surfaces of both fingers.

The meri of the second to fifth pereiopods show irregular rows of granules along their upper surfaces; in the second pereiopod, the lower surface bears a few small granules along an inconspicuous crest which, however, is hardly visible in the third to fifth pereiopods. The carpi also show irregular rows of small granules along the upper surface and a smooth, rounded lower surface. The propodi have two irregular rows of short spines on both the upper and lower surfaces; the mesial and lateral surfaces also have a row of such spines, except for the propodus of the fifth pereiopod, where they are smooth. The dactyli have five rows of large spines.

The thoracic sternites of the third maxillipeds and first pereiopods are completely fused. Only the suture between the thoracic sternites VII and VIII reaches the midline. The median groove is distinct in the VIIth and VIIIth sternites.

All the abdominal segments are free. The suture between the sixth abdominal segment and telson is sinuous. The lateral margins of the male telson are straight and the tip is rounded. In the females, these margins are rather sinuous.

The marginal suture of the male first pleopod is situated mesially. The mesial process is large, roughly triangular, and bears a sharp spine. The marginal process is rather short and broad, with its inner side turned upwards; it does not surpass the subterminal border of the caudal face. The apical plate is narrow; the distal lobe is higher and sinuous, its tip is bent laterally; the proximal lobe is partially involving the lower part of the distal lobe and its tip is moved to the lateral face. The apical setal field is reduced; it is situated caudolaterally in



Figs. 1-3. *Kingsleya besti* spec. nov., right first pleopod of the male holotype (RMNH 37401). 1, mesial view; 2, cephalic view of the distal half; 3, lateral view (la= apical plate; pm= marginal process; pml= mesial process; cc= apical setal field; plp= proximal lobe of the apical plate; lm= lateral margin of the distal lobe of the apical plate).

a depression near the base of the apical plate, surrounded by the borders of both lobes of the apical plate, the marginal process and the subterminal border of the caudal face.

The larger female's genital openings are adjacent to the midline of the sternum; they are somewhat longer than wide, with their main axis parallel to the midline.

Distribution. —To date, this species is known only from the type locality (Serra do Curicuriari), which is in the upper Rio Negro basin (Amazon basin). This area is a few minutes south of the Equator line and approximately at 67° western latitude, in the extreme north-west of Brazil, not very far from the Venezuelan and Colombian borders.

Etymology. —This species is dedicated to the memory of Robin Best, distinguished and very promising scientist of the Instituto Nacional de Pesquisas da Amazônia, who died, far too early, in 1986. Robin Best played an important role in stimulating my interest for the freshwater crabs of the Amazon Region, for which I always will remain much indebted to him.

Remarks. —The male first pleopod of *Kingsleya besti* bears the typical features of this genus: the marginal process distally enlarged, not overreaching the apical setal field; and a two-lobed apical plate. It also shows the mesial process clearly separated from the apical plate.

The main distinctive characters for this species are: (1) The marginal process. It is rather broader and turned upwards, with its inner side laying against the lower part of the apical plate. In the other species of this genus, it is rounded, lies under the apical plate and projects disto-laterally. (2) The apical plate. In *K. besti,* it is narrower and the proximal lobe is involving the lower part of the distal lobe in its mesial, cephalic and lateral surfaces; its tip is moved to the lateral surface and lies relatively far from the tip of the distal lobe. The other species bear the proximal lobe in a rather oblique position relatively to the distal lobe, ending a little below to the distal lobe tip (Bott 1967: 304 called this arrangement "Doppelfirst"); furthermore, the proximal lobe always lies in the mesio-caudal surface of the apical plate. (3) The apical setal field. In the present species, it is restricted to a depression near the base of the caudo-lateral surface of the apical plate. The other species have a large apical setal field along almost all the caudo-lateral face of the apical plate (see Magalhães 1986: 628, figs. 4-5, 629: fig. 8 and 630: figs. 11 and 13). The reduction of the apical setal field area in *K. besti* is probably due to both the folding of the proximal lobe of the apical plate (plp, in figs. 2-3) to the lateral face and the concavity formed by the lateral margin of the distal lobe (lm, in fig. 3) of the apical plate; in the other *Kingsleya,* this margin is convex. Also, the notch on the distal part of the apical setal field area is not clearly seen in this new species

due to the peculiar arrangement of the lobes of the apical plate.

Concerning the carapace morphology, *K. besti* is similar to *K. siolii*. Both show shallow orbits and very low, small teeth on the anterolateral borders of the carapace. In *K. latifrons* and *K. ytupora*, the orbits are deeper and the anterolateral borders bear large, acute teeth.

Key to the pseudothelphusid crabs known from Brazil
(modified after Magalhães, 1986)

1. Gonopod 1 with apical setal field reduced, open (not surrounded by lateral crests); apical plate present ..... *Brasiliothelphusa tapajoensis* Magalhães & Türkay
– Gonopod with apical setal field developed, surrounded by lateral crests; apical plate present or absent 2
2. Gonopod with distinct subapical wheel-shaped protuberance around lateral and cephalic surfaces; apical plate either present or absent ..... *Fredius* 3
– Gonopod without distinct subapical wheel-shaped protuberance around lateral and cephalic surfaces; apical plate always present 4
3. Gonopod with narrow apical plate showing denticulated mesial border; apical setal field subtriangular ..... *Fredius denticulatus* (H. Milne Edwards)
– Gonopod without an apical plate; apical setal field ear-shaped ..... *Fredius reflexifrons* (Ortmann)
4. Gonopod with large apical plate, which is fused to the mesial process ..... *Prionothelphusa eliasi* (Rodriguez)
– Gonopod with relatively narrow apical plate, which is subtriangular and clearly separated from the mesial process by an incision 5
5. Gonopod with a simple apical plate ..... *Microthelphusa somanni* (Bott)
– Gonopod with an apical plate bearing two lobes ..... *Kingsleya* 6
6. Anterolateral border of the carapace bearing several very low, small, rounded teeth 7
– Anterolateral border of the carapace bearing about 5 to 6 large, acute teeth 8
7. Gonopod with the apical setal field reduced and restricted to a depression near the base of the apical plate; proximal lobe of the apical plate partially involving the lower part of the distal lobe ..... *Kingsleya besti* spec. nov.
– Gonopod with the apical setal field developed and situated along almost all the caudo-lateral surface of the apical plate; proximal lobe of the apical plate situated oblique to the distal lobe ..... *Kingsleya siolii* (Bott)

8. Gonopod with apical plate showing narrow apex .....
..... *Kingsleya latifrons* (Randall)
– Gonopod with apical plate showing enlarged apex .....
..... *Kingsleya ytupora* Magalhães

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