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View of the environment at the collection sites of specimens of *Okothelphusa touroulti* n. sp.: Alama Creek, Mitaraka Massif region, French Guiana. Photo credit: Xavier Desmier. In medaillion: *Okothelphusa touroulti* n. sp., holotype, male (25.5 × 16.6 mm), MNHN-IU-2014-10435.

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A new species of freshwater crab (Decapoda, Brachyura, Pseudothelphusidae) from the eastern Guiana Shield, and a note on *Microthelphusa wymani* (Rathbun, 1905)

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ABSTRACT
Biological surveys conducted in the Tumucumaque Mountains, in the eastern portion of the Guiana Region, one on the Brazilian side, and the other on the French Guiana side, obtained specimens of pseudotelphusid freshwater crabs that belong to a new species of the family, *Okothelphusa touroulti* n. sp., which is described and illustrated here. The new species is the easternmost representative of the recently described genus, *Okothelphusa* Tavares & Magalhães, 2026, to which it is assigned due to a suite characters of its male first gonopod such as: marginal process straight and lamelliform; mesial process subtriangular to subrectangular and situated perpendicularly to main axis of the stem; apical plate subtriangular with similarly sized sternal and pleonal lamellae; and field of apical spines narrow and situated longitudinally on latero-pleonal side of apical plate. A comparison with the other three species of the genus is made based on their gonadal morphology and aspects of their geographic distribution are discussed. Taxonomic remarks on *Microthelphusa wymani* (Rathbun, 1905) are also presented, including a morphological description and detailed illustrations of the male first and second gonopods, including those of its type specimens.

KEY WORDS
Amazon region,
Brazil,
Kingsleyinae,
French Guiana,
Mitaraka Mountain,
Neotropical region,
Tumucumaque mountains,
new species.

RÉSUMÉ
Une nouvelle espèce de crabe d'eau douce (Decapoda, Brachyura, Pseudothelphusidae) du bouclier des Guyanes oriental, et une note sur Microthelphusa wymani *(Rathbun, 1905).*
Des prospections biologiques menées dans les monts Tumucumaque, dans la partie orientale de la région guyanaise, l'une du côté brésilien et l'autre du côté français, ont permis d'obtenir des spécimens de crabes d'eau douce pseudotelphusidés appartenant à une nouvelle espèce de la famille, *Okothelphusa touroulti* n. sp., décrite et illustrée ici. Cette nouvelle espèce est le représentant le plus oriental du genre récemment décrit, *Okothelphusa* Tavares & Magalhães, 2026, auquel elle est rattachée en raison d'un ensemble de caractères de son premier gonopode mâle : processus marginal droit et lamelliforme ; processus mésial subtriangulaire à subrectangulaire et perpendiculaire à l'axe principal de la tige ; plaque apicale subtriangulaire avec des lamelles sternales et pléonales de taille similaire ; et champ d'épines apicales étroit et situé longitudinalement sur la face latéro-pléonale de la plaque apicale. Une comparaison avec les trois autres espèces du genre est effectuée sur la base de leur morphologie gonadique et certains aspects de leur distribution géographique sont discutés. Des remarques taxonomiques sur *Microthelphusa wymani* (Rathbun, 1905) sont également présentées, comprenant une description morphologique et des illustrations détaillées des premier et deuxième gonopodes mâles, y compris ceux de ses spécimens types.

MOTS CLÉS
Région amazonienne,
Brésil,
Kingsleyinae,
Guyane,
mont Mitaraka,
région néotropicale,
monts Tumucumaque,
espèce nouvelle.

INTRODUCTION

The Guiana region, delimited by the Caribbean and Amazon regions, encompasses much of northern South America, extending longitudinally through southern Venezuela, Guyana, Suriname, French Guiana, and adjacent portions of eastern Colombia and northern Brazil (Berry & Riina 2005; Lujan & Armbruster 2011; Rull *et al.* 2019). It largely coincides with the Precambrian Guiana Shield, the northern portion of the Amazonian Plataform (Gibbs & Barron 1983), which is marked by lowlands/upland areas, mountain ranges and isolated tabular mountains known as tepuis, cerros, massifs or inselbergs, some exceeding elevation of 2000 m a.s.l., and drained by several hydrographic systems (Berry *et al.* 1995; Huber 1995; Berry & Riina 2005; Rull 2005; Lujan & Armbruster 2011; Rull *et al.* 2019). A diverse freshwater crab fauna inhabits this region (Magalhães & Pereira 2007 and references therein; Magalhães & Türkay 2008a, b; Magalhães *et al.* 2009; Pereira *et al.* 2009, 2010; Magalhães 2010; Suárez 2015; Zanetti *et al.* 2018; França *et al.* 2024; Tavares & Magalhães 2026; Magalhães *et al.* 2026). Crabs of the family Pseudothelphusidae Ortmann, 1893 are widely distributed in the Guiana Shield, but the greatest diversification of the family occurs in the central and western portions of the region, encompassing the Brazilian and Venezuelan territories mainly (Magalhães & Pereira 2007). In the eastern portion, the diversity of the family is much lower. In French Guiana, only three species are currently known: *Fredius denticulatus* (H. Milne Edwards, 1853), *F. reflexifrons* (Ortmann, 1897), and *Kingsleya latifrons* (Randal, 1840) (Magalhães & Pereira 2007; Cumberlidge *et al.* 2014). These same species are also present in the Brazilian state of Amapá where, additionally, another species, *Kingsleya ytupora* Magalhães, 1986, also occurs (Vieira 2008). In Suriname, a slightly larger number of genera (three) and species (five) are found. In addition to the same species of *Fredius* Pretzmann, 1967 and *Kingsleya* Ortmann, 1897 recorded in French Guiana, *Kingsleya siolii* (Bott, 1967) and *Microthelphusa wymani* (Rathbun, 1905), the latter endemic to the country, are also found in Suriname (Holthuis 1959; Magalhães & Pereira 2007; Cumberlidge *et al.* 2014).

Knowledge about the freshwater crab fauna of the Amazon region, particularly in the Guiana Shield, has benefited from some expeditions to remote areas that carried out faunal inventories using rapid assessment protocols for biological survey. Recently, new taxa of Pseudothelphusidae were described from this region based on material obtained in expeditions that explored the Imeri Massif, in the north of the state of Amazonas, Brazil (Tavares & Magalhães 2026), and the Acarai Mountains, in the extreme south of Guyana (Magalhães *et al.* 2026).

The biodiversity of the Brazilian side of the Tumucumaque (or Tumuc-Humac) Mountains was inventorised in five expeditions carried out between September 2004 and March 2006 to the Tumucumaque Mountains National Park, the largest continuous tropical forest National Park in the world, through a partnership between Conservation International (Washington, D.C., USA) and some Brazilian state and federal agencies (Instituto de Pesquisas Científicas e Tecnológicas do Amapá – IEPA, State Secretariat of Environment – SEMA, Brazilian Institute for Environment – IBAMA) (Bernard 2008). These five expeditions resulted in the collection of eight species of Pseudothelphusidae, which were preliminarily morphotyped, but only four were identified at the species level (*F. denticulatus*, *F. reflexifrons*, *K. latifrons*, and *K. ytupora*) (Vieira 2008). On the French Guiana side, a portion of the northern flank of the Tumucumaque Mountains was also the target of a large-scale biodiversity survey as part of the "Our Planet Reviewed" program, an initiative of the Muséum national d'Histoire naturelle (Paris, France) and Pro-Natura International NGO (France). This survey aimed to explore the Mitaraka Massif (or Mitaraka Mountains) region, located in the remote southwesternmost part of French Guiana (Touroult *et al.* 2018), and was conducted in February-March and August 2015. Although crustaceans were not among the target groups of this biological survey, a pseudothelphusid specimen was collected

incidentally during the fieldwork. A joint examination of the brachyuran material collected on both expeditions found an undescribed species of Pseudothelphusidae belonging to the newly described genus *Okothelphusa* Tavares & Magalhães, 2026, which is present on both the Atlantic and Amazonian slopes of the Tumucumaque mountain range. The objective of this work is to describe it, providing illustrations and a map of its known geographical distribution. Additionally, we redescribe and illustrate the gonopodal morphology of *W. wymani* based on the syntypes and other specimens and discuss the generic status of the species.

MATERIAL AND METHODS

Taxonomy

The specimens described herein and the comparative material are deposited in the crustacean collection of the Instituto de Pesquisas Científicas e Tecnológicas do Amapá, Macapá, Brazil; National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA; Naturalis Biodiversity Center (ex Rijskmuseum van Natuurlijke Historie), Leiden, The Netherlands; Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil; Museum of Comparative Zoology, Harvard University, Cambridge, USA; and Muséum national d'Histoire naturelle, Paris, France. The terminology used to describe somatic and gonopod characters is adapted from Pedraza (2015).

Measurements and illustrations

All measurements are given in millimetres (mm) and presented as (cw × cl). Line drawings were made by CM using a Leica MZ125 stereomicroscope equipped with a drawing tube, then scanned and edited in Adobe Photoshop CS2. The plates were mounted in CorelDraw X3. Digital photographs of the first gonopod were taken using a Zeiss Discovery V12 stereomicroscope with the Automontage® system.

Geographic distribution

The distribution map was generated using the QGIS software, v. 3.16 (http://www.qgis.org). Geographic coordinates and elevation data for each record were obtained directly from GPS devices during field sampling or from label information associated with the collection lots. The geographic distribution of *Microthelphusa wymani* was depicted based on records listed in Holthuis (1959) and locality data obtained from the Naturalis Bioportal (https://bioportal.naturalis.nl/en) and refers only to records explicitly containing males identified either as *Microthelphusa wymani* or as *Pseudothelphusa wymani*. When geographic coordinates were unavailable, they were estimated based on the textual information about the recorded location by georeferencing in Google Earth® and the online gazetteer GeoNames (http://www.geonames.org/).

Comparative material examined

Okothelphusa trefauti Tavares & Magalhães, 2026: male (25.5 × 15.4), holotype, Brazil, state of Amazonas, Parque Nacional do Pico da Neblina (Pico da Neblina National Park), Serra do Imeri (Imeri Massif), municipality of Santa Isabel do Rio Negro, 00°28'23"N, 65°20'24"W, 11.XI.2022, Luis Fabio Silveira, MZUSP 45069.

Abbreviations

Institutions

IEPA	Instituto de Pesquisas Científicas e Tecnológicas do Estado do Amapá, Macapá;
MCZ	Museum of Comparative Zoology, Harvard University, Cambridge;
MNHN	Muséum national d'Histoire naturelle, Paris;
MZUSP	Museu de Zoologia, Universidade de São Paulo, São Paulo;
RMNH	Naturalis Biodiversity Center (ex Rijskmuseum van Natuurlijke Historie,), Leiden;
USNM	National Museum of Natural History, Smithsonian Institution, Washington, D.C.

Morphology

ap	apical plate;
fas	field of apical spines;
ls	lateral suture;
mep	mesial process;
mp	marginal process;
ms	marginal suture;
pl	pleonal lamella;
prm	distal projection of the mesial process;
sg	sternal groove;
sl	sternal lamella.

Other abbreviations

cw	carapace width (taken at its widest point);
cl	carapace length (taken from the front to the posterior margin of the carapace);
elev.	elevation;
G1, G2	male first and second gonopods, respectively;
ov	ovigerous;
P2-5	pereopods 2 to 5, respectively;
s	sternal sutures between adjacent thoracic sternites (e.g., s4/s5).

SYSTEMATICS

Family Pseudothelphusidae Ortmann, 1893
Subfamily Kingsleyinae Bott, 1970

Genus *Okothelphusa* Tavares & Magalhães, 2026

Type species. — *Okothelphusa trefauti* Tavares & Magalhães, 2026, by original designation.

Okothelphusa touroulti n. sp.
(Figs 1-3)

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Type material. — **Holotype**. **French Guiana** • ♂ (25.5 × 16.6 mm); Maripasoula, Mitaraka Mountain, Alama Creek; 2°14'02.47"N, 54°27'00.19"W; [*c.* 310 m elev.]; 23.II-1.III.2015; Expedition GUYANE, Marc Pollet & Julien Touroult leg., [station label: MIT-C-RBF p. I 5M. Pollet]; in trap, bottom of path D (1 km round distance); APA 973-1; MNHN-IU-2014-10435.

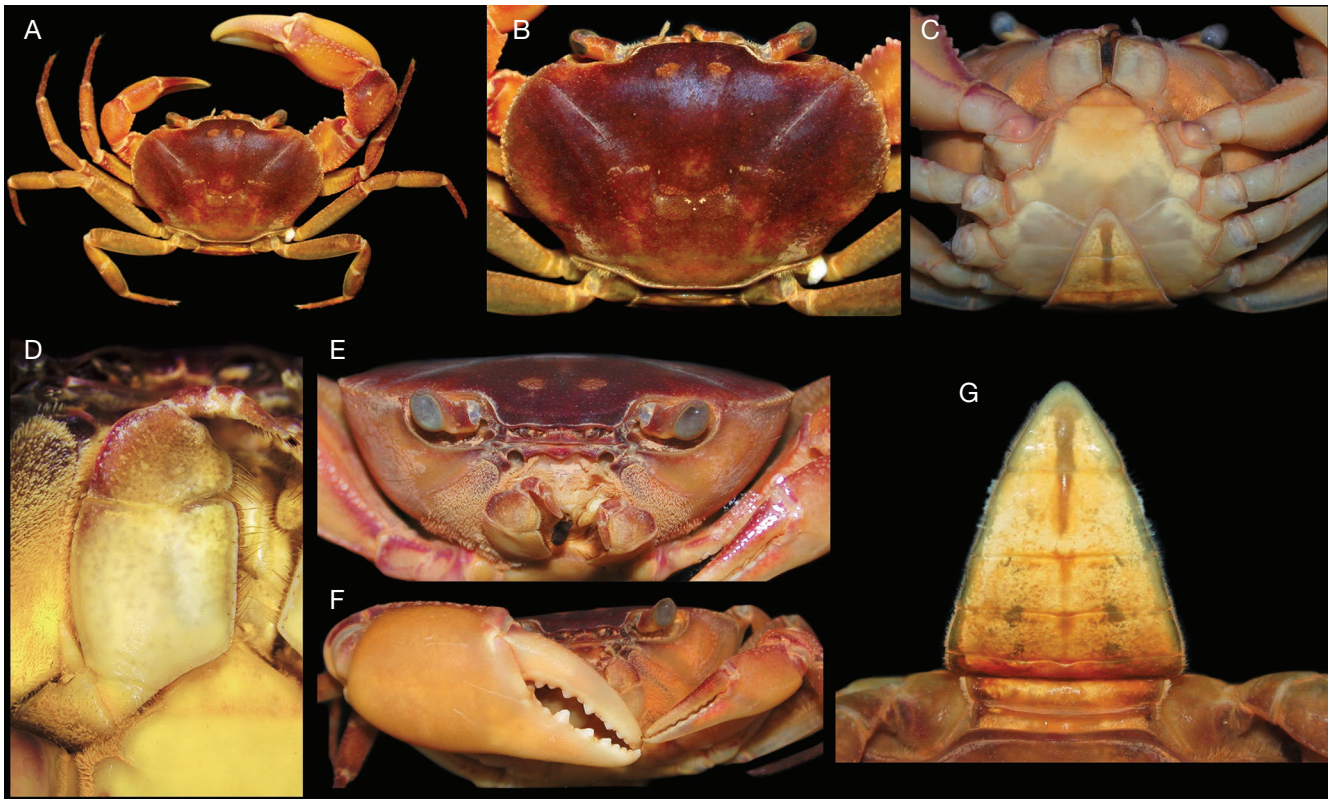

Fig. 1. — *Okothelphusa touroulti* n. sp., holotype, male (25.5 × 16.6 mm), MNHN-IU-2014-10435, photographs of the external morphology: **A**, habitus, dorsal view; **B**, carapace, dorsal view; **C**, carapace, ventral view; **D**, right third maxilliped; **E**, cephalothorax, frontal view; **F**, right (larger) and left chelae; **G**, pleon and telson.

Paratypes. **Brazil** • 1 ♂ (22.8 × 15.2 mm); state of Amapá, Parque Nacional Montanhas do Tumucumaque (Tumucumaque Mountains National Park), municipality of Laranjal do Jari, Mapaoni River (tributary of Jari River); 2°11'36"N, 54°35'15"W; [*c.* 310 m elev.]; 17.I.2005; Jucivaldo Dias Lima leg.; collected in pitfall; IEPA 705 • 1 ♂ (21.7 × 14.5 mm); state of Amapá, Parque Nacional Montanhas do Tumucumaque (Tumucumaque Mountains National Park), municipality of Oiapoque, unnamed stream tributary of Anotaié River, right bank affluent of the Oyapock River; 3°12'51"N, 52°02'15"W; [*c.* 120 m elev.]; 9.IX.2005; Inácia Maria Vieira & Dário César Carvalho Vieira leg.; between 11:00 and 12:30 h; MZUSP 49106.

Other material examined. — **Brazil** • 1 ♂ (24.4 × 15.4 mm), in bad condition; state of Amapá, municipality of Pedra Branca do Amapari, Reserva de Desenvolvimento Sustentável do Rio Iratapuru (Iratapuru River Sustainable Development Reserve), unnamed stream tributary of the right bank of Cupixi River; 00°34'30"N, 52°18'03"W; [*c.* 140 m elev.]; 28.VII.2005; Inácia Maria Vieira & Dário César Carvalho Vieira leg., IEPA 964 • 1 ♂ (mostly broken); state of Amapá, Parque Nacional Montanhas do Tumucumaque (Tumucumaque Mountains National Park), municipality of Laranjal do Jari, Mapaoni River; 02°11'36"N, 54°35'15"W; [*c.* 310 m elev.]; 14.I.2005; Cláudia R. Silva leg., IEPA 965.

Type locality. — French Guiana, Maripasoula, Mitaraka Mountain, Alama Creek.

Diagnosis. — Mxp3 exopod short, approximately 0.37 × length of lateral margin of ischium. Aperture of efferent branchial channel wide, subquadrate. G1 marginal process relatively long, lamelliform, terminal portion rounded in mesial view; pleonal border slightly discontinuous subterminally, produced into small angle in mesial view; mesial process short, approximately 0.6 × length of apical plate, distal corner wider, ending in acute triangular projection directed mesially, proximal corner subquadrate, slightly narrower; apical plate subtriangular in mesial view, distally produced into two well-developed, rounded, smooth lamellae of similar size.

Etymology. — The new species is named after Julien Touroult, who led the "Mitaraka 2015 survey" under the scope of the "Our Planet Reviewed" program (Touroult *et al.* 2018).

Geographic distribution. — The few records available indicate that *O. touroulti* n. sp. is distributed in the Tumucumaque mountain range in southern French Guiana and northern Brazil in the state of Amapá (Fig. 4).

Description

Adult carapace (Fig. 1A-D) outline ellipsoid, widest near middle, ratio cw/cl 1.53 (n=3); dorsal surface distinctly convex anteroposteriorly, gently convex transversely, mostly smooth, finely punctate, regions poorly defined. Gastric pits distinct, close to each other on metagastric region. Cervical grooves shallow, distinctly visible, nearly straight, faint proximally, distal end obsolete near anterolateral margin. Postfrontal lobules obsolete, nearly indistinct; median groove indistinct. Carapace surface between front and postfrontal lobules smooth, strongly deflected vertically. Front slightly convex in dorsal view, median portion slightly narrower than lateral ends in frontal view, median notch absent; superior margin smooth, weakly angulate, inferior margin carinate, gently sinuous in frontal view, slightly more projected anteriorly than upper one, except medially (Fig. 1D). Carapace

Fig. 2. — *Okothelphusa touroulti* n. sp., holotype, male (25.5 × 16.6 mm), MNHN-IU-2014-10435, photographs of the left first (G1) and second (G2) male gonopods: **A**, G1, whole structure, lateral view; **B**, G1, whole structure, mesial view; **C**, G2, mesial view; **D**, G1, distal part, mesial view; **E**, G1, distal part, pleonal view; **F**, G1, distal part, lateral view; **G**, G1, distal part, sternal view; **H**, G1, distal part, sternomesial view.

anterolateral margin with shallow depression just behind exorbital angle, followed by row of 15-20 low, obtuse teeth slightly increasing in size posteriorly, irregularly spaced but close together (Fig. 1A, B); posterolateral margin mostly smooth, with few scattered minute granules before joining dehiscence line. Orbital contour rhomboid-shaped in frontal view; supraorbital margin moderately shallow, carinate, continuous with superior margin of front; infraorbital margin continuous, carinate, slightly more projected anteriorly than supraorbital margin; exorbital angle low, obtuse; internal angle of infraorbital margin inconspicuous, mesial portion of infraorbital margin nearly straight; internal orbital tooth incipient, as oblique low keel with thin row of minute setae (Fig. 1D). Eyes normal, loosely filling orbital cavity; eyestalk

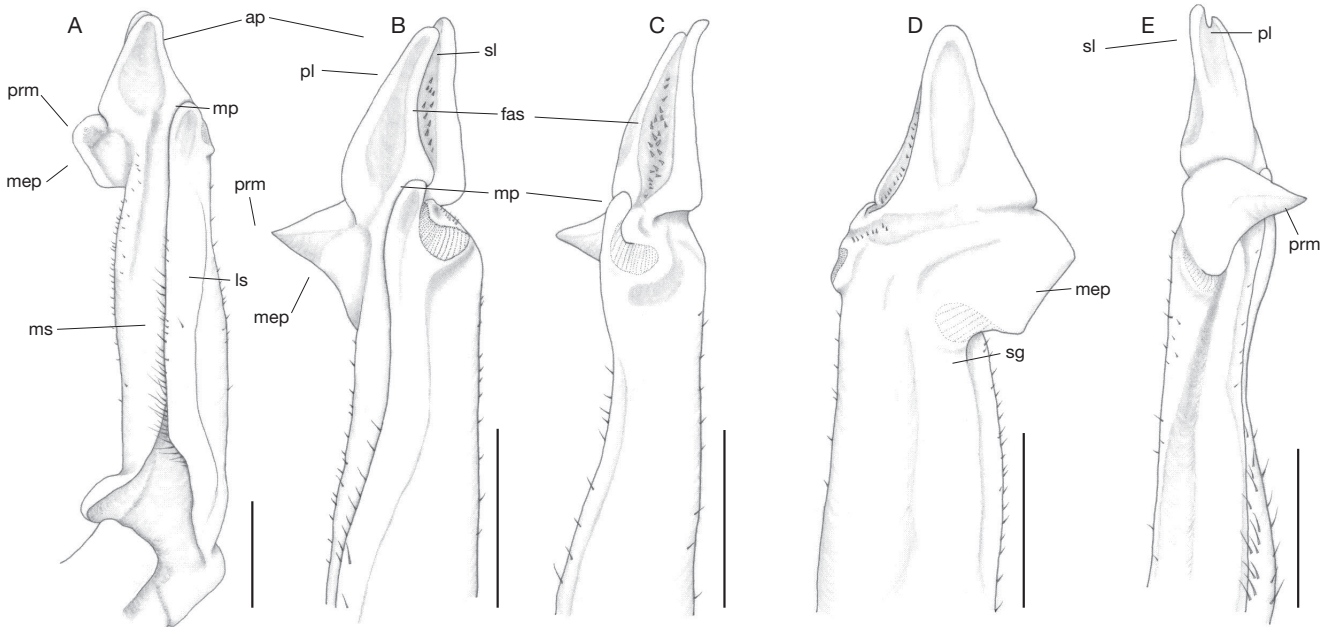

FIG. 3. — *Okothelphusa touroulti* n. sp., paratype, male (22.8 × 15.2 mm), IEPA 705, drawings of the left first gonopod: **A**, whole structure, mesial view; **B**, distal part, mesopleonal view; **C**, distal part, pleonal view; **D**, distal part, lateral view; **E**, distal part, sternal view. Abbreviations: **ap**, apical plate; **fas**, field of apical spines; **ls**, lateral suture; **mep**, mesial process; **mp**, marginal process; **ms**, marginal suture; **pl**, pleonal lamella; **prm**, distal projection of the mesial process; **sg**, sternal groove, **sl**, sternal lamella. Scale bars: 1 mm.

subcylindrical, cornea well developed, pigmented (Fig. 1D). Antennae tiny, barely extending beyond base of eyestalk; antennules short, folded transversely in narrow fossa; antennular fossae relatively narrow, deep, subrectangular in frontal view, divided by low, straight interantennular septum concealed by inferior frontal margin in dorsal view (Fig. 1D). Epistome narrower than antennular fossae, slightly widened laterally and medially; laterally pilose, median part glabrous; superior margin nearly straight, inferior margin sinuous, intermediate portions concave, mid portion projected as prominent, triangular, deflexed, epistomial tooth with smooth borders (Fig. 1D). Carapace suborbital and subhepatic regions smooth; pterygostomial region densely pilose (Fig. 1C, D). Efferent branchial channel aperture wide, subquadrate, borders smooth (Fig. 1D).

Mxp3 (Fig. 1E) covering most of buccal cavity when closed; surfaces of ischium and merus of endopod mostly smooth, with few, scattered minute bristles; ischium subquadrate, approximately as wide as long, lateral margin moderately convex, mesial margin straight with rows of corneous, subrectangular teeth and some marginal and submarginal setae of varying sizes; merus subtrapezoidal, slightly wider than long, lateral margin broadly rounded, mesial margin nearly straight, with thinner edge, with row of corneous teeth and setae of varying sizes, mesodistal margin oblique, with thicker, glabrous edge, with 3-articulated palp; palp 2nd article inner margin with subdistal tuft of long setae, 3rd article with row of setae increasing size distally. Mxp3 exopod subtriangular, short (approximately 0.37 × length of lateral margin of ischium; n = 4), lateral margin with more or less dense row of relatively long setae.

P1 (chelipeds) (Fig. 1A, F) markedly heterochelous in adult male, similarly armed, right larger. Larger chela with merus subtriangular in cross section, narrower anteriorly, broader posteriorly; lateral margin rounded, with irregular row of granules, fainter distally; mesial upper margin lined with longitudinal row of rounded tubercles, increasing in size distally; inner lower margin rounded, lined with row of small tubercles; distal inner margin straight, with subterminal straight row of small tubercles, distal outer margin arched, smooth. Carpus mesial margin lined with irregular row of 4-6 low tubercles proximally, prominent conical spine medially, smooth distally; outer surface rounded, smooth. Major palm moderately (in paratypes: length/width ratio 1.51; n = 2) to markedly swollen (holotype: length/width ratio 1.33, minor chela length/width ratio 1.55), smooth on both inner, outer surfaces; lower surface rounded, with irregular rows of faint tubercles. Larger chelae with fingers moderately gaping, minor chelae with fingers not gaping; tips not crossing; pollex lower surface rounded, with irregular rows of faint tubercles, cutting surface with triangular teeth: one small proximally, three larger medianly, 2-3 small distally. Dactylus slightly arched, approximately 1.2 × longer than palm (measured dorsally); upper surface rounded, with irregular rows of faint tubercles, cutting surface with four larger teeth interspaced with smaller ones (Fig. 1F).

P2-5 (ambulatory legs) slender; dactyli slightly longer than propodi, with five longitudinal rows of sharp, corneous spines, increasing in size distally, two faint longitudinal grooves on proximal lateral surfaces.

Thoracic sternum approximately as long as wide (ratio width/length approximately 1.02, n = 4) (Fig. 1C). Thoracic

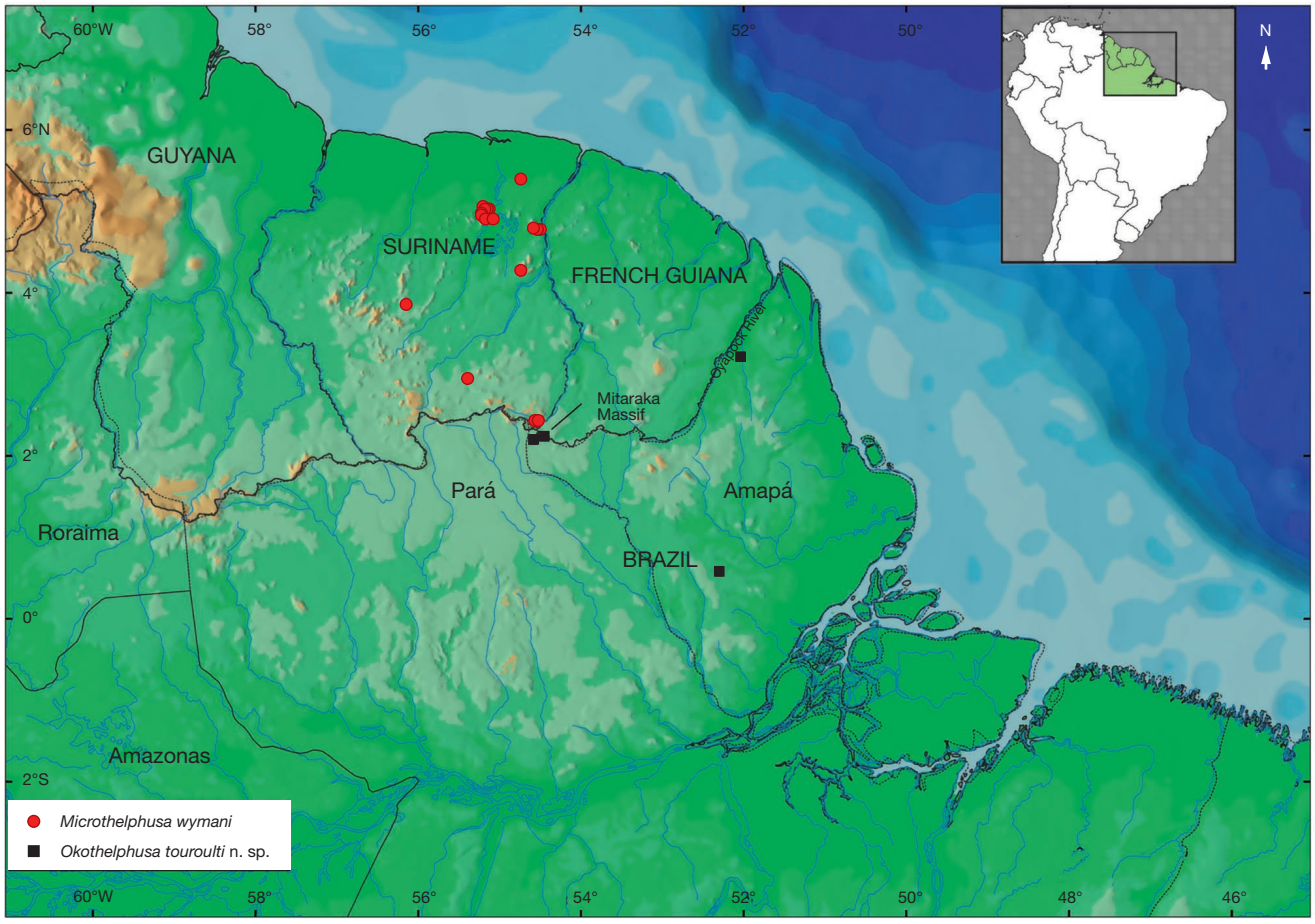

FIG. 4. — Map of northern South America showing the geographic distribution of *Microthelphusa wymani* (Rathbun, 1905) (**red circle**) and *Okothelphusa touroulti* n. sp. (**black square**).

sternites of mxp 3 and cheliped completely fused, except for small notches at lateral edges of sternum; sutures between s4/s5, s5/s6, s6/s7, s7/s8 complete, reaching midline of thoracic sternum. Midline of thoracic sternum wide, flat between s5-s6, marked by shallow groove between s7-s8. Male sternopleonal cavity deep, V-shaped, with thick pubescence in inner walls of s4/s5, s5/s6; walls of posterior sternites with few, scattered pubescence. Male pleon locking mechanism as small bud situated on s5 right next to sternal suture s5/s6, near outer edge of sternopleonal cavity. Penis moderately long, hook-shaped, emerging from nearby coxo-sternal condyle articulation, proximally thick, abruptly tapering distally.

Male pleon + telson subtriangular. All pleonal somites free; 3rd somite widest, 6th somite longest; all somites lateral margins fringed by line of short setae. Telson subtriangular, slightly wider than long (ratio width/length 1.2; n = 3); lateral margins nearly straight, fringed by short setae, denser and longer proximally; tip rounded (Fig. 1G).

G1 (Figs 2; 3) slender, nearly straight in all views, columnar, distal third wider due to moderately developed distal processes; distal portion relatively compressed mesolaterally. Marginal suture straight, situated on mesial surface, with row of long simple, weakly plumose marginal and submarginal setae along proximal ⅔ of suture length (Figs 2B, D; 3A, B). Lateral suture relatively deep, moderately sinuous, extending approximately ⅔ of sternal surface from proximal to distal portions (Figs 2D; 3A, B). Sternal surface with longitudinal, relatively shallow groove (Figs 2G; 3D). Mesial and lateral surfaces with some scattered minute setae in mesial view. Marginal process relatively long, lamelliform; terminal portion rounded in mesial view, reaching as far as terminal opening of spermatic channel, not overreaching field of apical spines area (Figs 2B, D, G; 3A-C). Pleonal border slightly discontinuous subterminally, produced into small corner in mesial view (Figs 2B; 3A). Mesial process relatively short, approximately 0.6 × length of apical plate, subrectangular in mesial and lateral views, subtriangular in sternal and pleonal views; distal corner wider, ending in acute triangular projection directed mesially; proximal corner subquadrate, slightly narrower (Figs 2B, D, F, G; 3A, B, D, E). Apical plate subtriangular in mesial and lateral views (Fig. 2A, B, D, G; 3A, D), well developed, slightly longer than wide (ration length/width 1.1, measured in mesial view), clearly separated from mesial process by deep incision, distally produced into two well-developed, smooth lamellae of similar length; sternal lamella slightly longer than pleonal one, distally not merging, separated from each other by deep, asymmetrical notch in pleonal and sternal views (Figs 2E, F, H; 3A-C, E); distal margins of both lamellae narrow, rounded (Figs 2A, B; 3A, B). Field of apical spines moderately developed, denser proximally, relatively narrow,

Fig. 5. — View of the environment at the collection sites of specimens of *Okothelphusa touroulti* n. sp.: **A**, Alama Creek, Mitaraka Massif region, French Guiana (holotype, MNHN-IU-2014-10435) (the tiny creek is barely discernible just below the center of the photo, as part of its bed is covered by branches and a dense path of leaf litter, and its crystal-clear waters easily blends in with the stream bed); **B**, unnamed forest creek, tributary of Anotaié River, state of Amapá, Brazil (paratype, MZUSP 49106); **C**, unnamed tributary of the Cupixi River with turbid waters indicating mining activity upstream from the collection site of the specimen IEPA 964; **D**, pitfall at the florest floor near the Mapaoni River, state of Amapá, Brazil (paratype, IEPA 705). Photographs: A, Xavier Desmier; B-D, Cláudia Funi.

elongated along longitudinal axis of pleonal side of apical plate, delimited by crests corresponding to margins of pleonal and sternal lamellae (Figs 2E; 3B-D); spermatic channel terminal opening situated in basal portion of field of apical spines, near convergence of pleonal, sternal lamellae.

G2 (Fig. 2C) with both coxa and basis subrectangular, coxa being slightly larger and wider than basis; terminal segment as styliform flagellum, slightly shorter than G1 (approximately 0.93 × length of G1), conspicuously slender, distinctly tapering in its distal quarter; tip narrow, flattened, distally rounded, with numerous small setae.

No females available.

Ecological notes

The landscape and habitats surveyed by the Mitaraka 2015 expedition is described in Touroult *et al.* (2018). The holotype was collected in a shadowed, tiny forest stream, with shallow, crystal-clear waters that drains an area of dense tropical rain forest of medium altitude hills (100 to 500 m) (Fig. 5A). One of the paratype specimens (MZUSP 49106) was found in similar habitat: it was collected using a sieve near an "açaizal" (a grove of *Euterpe oleracea* Mart.), an area with dense vegetation. The specimen was in the middle of a shallow, slow-flowing stream with a sandy bottom and crystal-clear water, with a submerged layer of leaf litter accumulated due to fallen branches (Fig. 5B). Another specimen (IEPA 964) was found among aquatic macrophytes on the densely vegetated right bank of a tributary of the Cupixi River, which has turbid waters, indicating mining activity upstream from the collection site (Fig. 5C). The species is semi-terrestrial as one of the paratype specimen (IEPA 705) was found on the floor of upland forests, on rocky slopes, with air temperatures around 30°C, in an area of sparse forest with a lot of dry leaf litter in the soil (Fig. 5D); there was little rainfall during the collection period.

Taxonomic remarks

The genus *Okothelphusa* Tavares & Magalhães, 2026 was recently introduced to accommodate a group of three species (*O. trefauti* Tavares & Magalhães, 2026, *O. marahuacaensis* (Suárez, 2015), and *O. guaiquinimaensis* (Suárez, 2015)) that are distributed in the southwestern Guiana Shield (Tavares &

Magalhães 2026) with which the G1 of the present new species shares the following morphological generic diagnostic characters, particularly regarding the morphology of G1: a marginal process straight and lamelliform; a subtriangular to subrectangular mesial process, situated perpendicularly to main axis of the stem, with its distal portion wider and projected mesially; a large, subtriangular (in mesial view) apical plate with similarly sized sternal and pleonal lamellae; and a narrow field of apical spines longitudinally situated on latero-pleonal side of apical plate.

Okothelphusa touroulti n. sp. differs from *O. trefauti* by having (a) the G1 mesial process shorter than the apical plate (Figs 2A, B, D; 3A, B, D) (vs as long as the apical plate in *O. trefauti* – see Tavares & Magalhães 2026: 148, fig. 6A-F) and with a sharp projection of the distal portion (Fig. 2E, F; 3B, C, E) (vs a rather obtuse projection of the distal portion in *O. trefauti* – see Tavares & Magalhães 2026: 148, fig. 6A-F); (b) the G1 apical plate with the pleonal lamella with a straight mesial margin (Fig. 2A, B, D; 3A, D) (vs a convex mesial margin in *O. trefauti* – see Tavares & Magalhães 2026: 148, fig. 6A, B); and (c) the G1 pleonal border slightly discontinuous subterminally, produced into small corner in mesial view (Figs 2B, 3A) (vs the pleonal border discontinuous, marked by a distinct square corner in mesial view – see Tavares & Magalhães 2026: 148, fig. 6B, D).

Judging by the descriptions and illustrations in Suárez (2015), the new species can be distinguished from *O. marahuacaensis* and *O. guaiquinimaensis* because their G1s, in mesial view, show the pleonal border subterminally continuous (see Suárez, 2015: 74, fig. 3A, B, and 77, fig. 5A, B, respectively) and not discontinuous and marked by a small corner as in *O. touroulti* n. sp. (Figs 2B; 3A). Additionally, in *O. marahuacaensis*, the sternal lamella of the G1 apical plate is distinctly longer than the pleonal lamellae (better seen in pleonal view – see Suárez, 2015: 74, fig. 3B) when compared to the slightly longer sternal lamella in the G1 of *O. touroulti* n. sp. – Figs 2E-H; 3) and, in *O. guaiquinimaensis*, the sternal lamellae is longer than and partially folded over the pleonal lamella (see Suárez, 2015: 77, fig. 5E) whereas it is straight and not folded in the G1 of *O. touroulti* n. sp. (Figs 2E-H; 3).

Zoogeographic remarks

Biogeographically, the Guiana region is composed by four provinces, defined mainly by their phytogeographic aspects (Huber *et al.* 2018; Rull *et al.* 2019). The distribution of current *Okothelphusa* species can be associated with two of these provinces. Three of them occur in the Pantepui Province, which includes all upper and high-mountain ecosystems of the Guiana region, and is a discontinuous surface formed by the assemblage of all the relatively isolated mountain summits (tepuis or massifs) with elevation from 1300 to 3000 m (Rull 2005; Huber *et al.* 2018). *Okothelphusa guaiquinimaensis* is restricted to the Cerro Guaiquinima, found at elevations of 1380-1400 m; *O. marahuacaensis* comes from the Cerro Marahuaca's summit at 1600 m, both in the Venezuelan states of Bolívar and Amazonas, respectively (Suárez 2015), whereas *O. trefauti* occurs in the southwestern tip of the Pantepui Province at Serra do Imeri, Brazil, at elevation of 1730 m (Tavares & Magalhães 2026). The geographic distribution of these species seems to be closely associated to the limits of the respective tepuis in which they were found.

The discovery of *O. touroulti* n. sp. within the Eastern Guiana Province, which encompasses the coastal lowlands and uplands of the Atlantic foreland from the Orinoco River delta to the Brazilian state of Amapá (Huber *et al.* 2018; Rull *et al.* 2019), indicates that the genus has a much broader distribution in northern South America, spanning almost the entire east-west extent of Guiana region. The mountainous region of Tumucumaque, where the Mitaraka Mountain is located, is characterized by small hills with altitudes between 300 and 400 metres, interspersed with isolated hills (inselbergs) that do not exceed 700 metres, as well as extensive plains with a more homogeneous topography (MMA/ICMBio 2009; Touroult *et al.* 2018). Therefore, the vertical distribution of *O. touroulti* n. sp., whose altitudinal occurrence records range from 120 to 310 m, is much lower than that of its congeners from the Pantepui Province.

Furthermore, the distributional data of *O. touroulti* n. sp. indicate that the species has a transbasinal distribution (Fig. 4), since it occurs in two hydrographic basins of the Guiana region in northern South America: the Atlantic and southeastern river systems (Lujan & Armbruster 2011). The occurrence in the Mitaraka Mountain area, in French Guiana (MNHN-IU-2014-10435), is in the headwaters of the Maroni (or Marowijne) River, and that of the Anotaié River, in the Brazilian state of Amapá (MZUSP 49106), comes from a right-bank tributary of the Oyapock River. Both river systems flow northwards to the Atlantic Ocean. The other records are in the southeastern drainage basins. The Mapaoni River, from where the specimens of the lots IEPA 705 and 965 were collected, drains the southern slope of the Tumucumaque mountain range, and is a tributary of the Jari River, which empties into the left bank of the Amazon River mouth. The record IEPA 964 comes from the Cupixi River basin, a right-bank tributary of the Araguari River, whose lower course currently discharges into lower Amazon River, near the border region between the Amazon delta and the Atlantic Ocean (Santos *et al.* 2018).

Genus *Microthelphusa* Pretzmann, 1968

Microthelphusa Pretzmann, 1968: 10.

Type species. — *Guinotia* (*Microthelphusa*) *rodriguezi* Pretzmann, 1968, by original designation.

Microthelphusa wymani (Rathbun, 1905) (Figs 6; 7)

Pseudothelphusa wymani Rathbun, 1905: 291, text-fig. 83. — Holthuis 1959: 231, text-fig. 58a-c [not d, e], pl. 8 figs 3, 4 (part). — Coifmann 1939: 109 (in list).

Guinotia (*Neopseudothelphusa*) *wymanni* [sic] – Pretzmann 1965: 3 (in list).

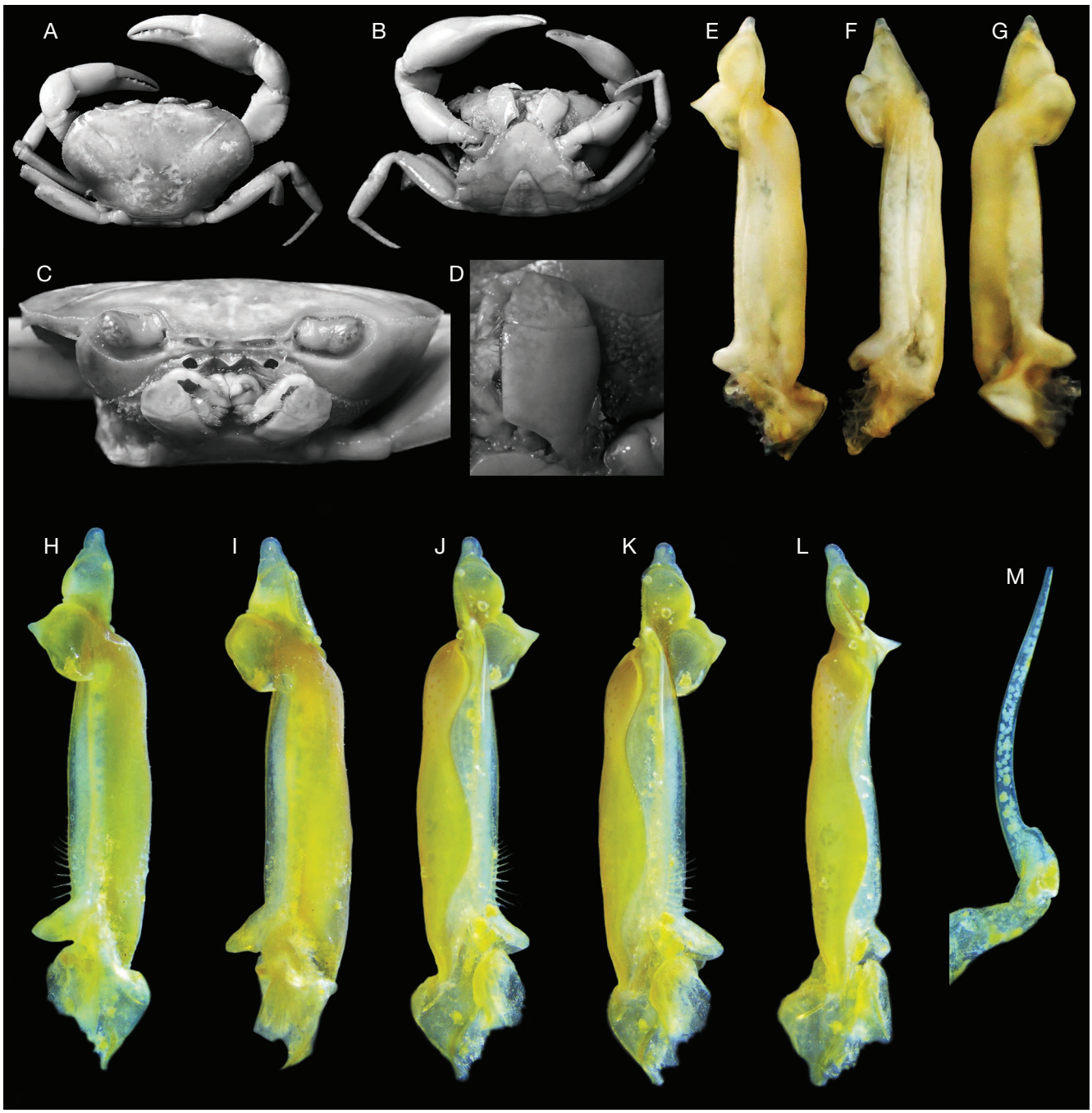

Fig. 6. — *Microthelphusa wymani* (Rathbun, 1905), type specimens: **A-G**, lectotype male (26.2 × 16.4 mm), USNM 29975, photographs of the external morphology and first and second gonopods: **A**, habitus, dorsal view; **B**, habitus, ventral view; **C**, carapace, frontal view; **D**, third maxilliped, left; **E**, left first gonopod, whole structure, pleonal view; **F**, idem, mesial view; **G**, idem, sternal view; **H-M**, paralecototype male (28.8 × 16.5 mm), MCZ-IZ-CRU 1173: **H**, right first gonopod, whole structure, sternal view; **I**, idem, lateral view; **J**, idem, mesopleonal view; **K**, idem, mesial view; **L**, idem, pleonal view; **M**, right second gonopod (tip broken), sternal view.

Eudaniela (*Neopseudothelphusa*) *wymanni* [sic] – Pretzmann 1971: 16 (in list) [error]; 1972: 6, 9 (in list), 12, 19 (in key), 20, figs 61-64, 89-91 [error].

Microthelphusa wymani – Rodríguez 1981: 49 (in list); 1982: 157 (in key), 162, fig. 112. — Villalobos Hiriart & Álvarez 2008: 299 (in list). — Ng *et al.* 2008: 175 (in list). — Tavares & Magalhães 2026: 138, 142.

Type material examined. — **Lectotype** (here designated). **Suriname** • ♂ (26.2 × 16.4 mm); date unknown; Jeffries Wyman leg.; USNM 29975.
Paralectotype. **Suriname** • ♂, in poor condition (28.8 × 16.5 mm); date unknown; Jeffries Wyman leg; MCZ-IZ-CRU 1173.

Other material examined. — **Suriname** • 1 ♂ (24.6 × 15.1 mm); Sipaliwini, Nassau Mountains, 5.9 km W of Marowijne River; 10.III.1949; Suriname Expedition 1948/49 leg.; RMNH D.12098

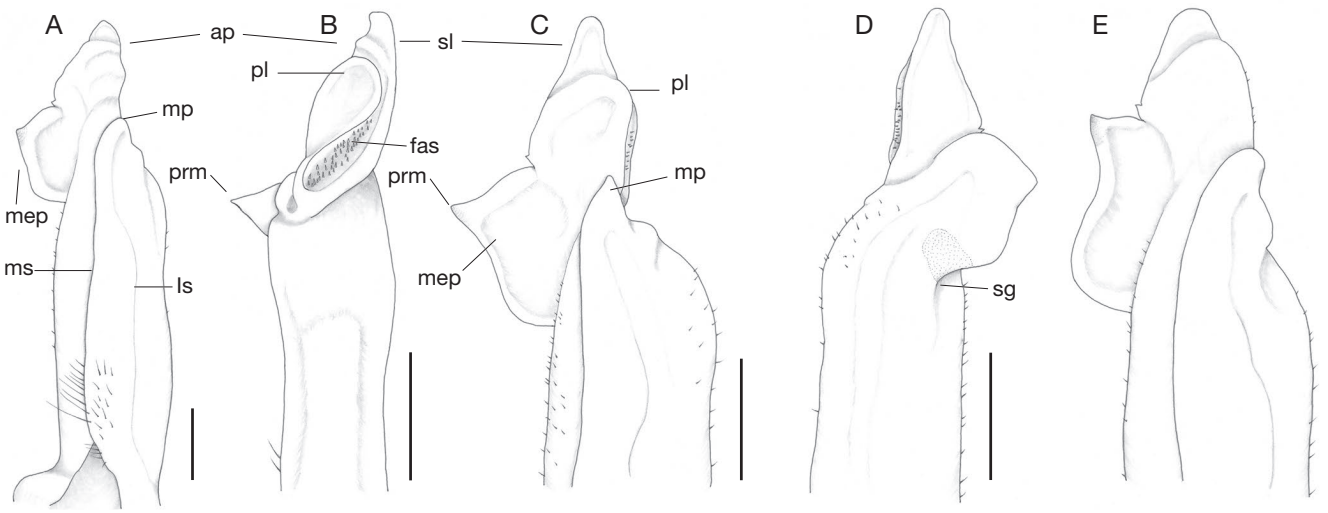

FIG. 7. — *Microthelphusa wymani* (Rathbun, 1905), males, drawings of the left first gonopods. RMNH D.14935: **A**, whole structure, mesial view; **B**, distal part, lateropleonal view. RMNH D.12101: **C**, distal part, pleonal view; **D**, distal part, sternal view. RMNH D.12110: **E**, distal part, mesial view. Abbreviations: **ap**, apical plate; **fas**, field of apical spines; **ls**, lateral suture; **mep**, mesial process; **mp**, marginal process; **ms**, marginal suture; **pl**, pleonal lamella; **prm**, distal projection of the mesial process; **sg**, sternal groove, **sl**, sternal lamella. Scale bars: 1 mm.

• 1 ♂ (22.5 × 14.0 mm); Sipaliwini, Nassau Mountains, 6 km W of Marowijne River; 8.III.1949; Suriname Expedition 1948-1949 leg.; RMNH D.12100 • 2 ♂ (23.5 × 14.7 mm, 27.7 × 16.5 mm); Sipaliwini, Nassau Mountains, 6 km W of Marowijne River; 1-31.III.1949; Suriname Expedition 1948-1949 leg.; RMNH D.12102 • 2 ♂ (14.9 × 10.1 mm, 19.3 × 12.2 mm); Sipaliwini, Nassau Mountains, 6 km W of Marowijne River; 11.III.1949; Suriname Expedition 1948-1949 leg.; RMNH D.12107 • 1 ♂ (27.1 × 16.5 mm); Sipaliwini, Nassau Mountains, 6.8 km W of Marowijne River; 12.III.1949; Suriname Expedition 1948-1949 leg.; RMNH D.12095 • 1 ♂ (36.7 × 21.3 mm); Sipaliwini, Nassau Range, small creek *c.* 7 km W of Marowijne River; 02.II.1949; Suriname Expedition 1948-1949 no. 7957 leg.; RMNH D.14935 • 1 ♂ (35.2 × 20.5 mm); Sipaliwini, Nassau Mountains, 9.2 km W of Marowijne River; 09.III.1949; Suriname Expedition 1948-1949 leg.; RMNH D.12101 • 1 ♂ (24.6 × 15.4 mm), 1 ♀ (30.4 × 17.8 mm); Sipaliwini, Nassau Mountains, 13 km W of Marowijne River; 19.III.1949; Suriname Expedition 1948-1949 leg.; RMNH D.12107 • 1 ♂ (22.6 × 13.5 mm); Brokopondo, Lolobroki Creek, 121 km S of Paramaribo by railway; 30.XI.1949; C. Blays leg.; RMNH D.12103 • 1 ♂ (25.5 × 15.5 mm), 1 ♀ (22.0 × 12.8 mm); Brokopondo, Lolobroki Creek, above large fall, 121 km S of Paramaribo; 30.III.1949; C. Blays leg.; RMNH D.12110 • 2 ♂ (11.6 × 10.7 mm, 19.5 × 12.1 mm), 2 ♀ (25.6 × 14.7 mm, 32.7 × 19.4 mm); Brokopondo, Brownsberg, Ireneval; XII.1971; D. G. Reeder leg.; INPA 356 • 1 ♂ (30.0 × 17.8 mm); Brokopondo, Brownsberg, between Suriname and Saramacca River basins, at lodging houses; 1.I.-31.I.1972; G. F. Mees coll.; RMNH D.29015 • 1 ♂ (24.5 × 14.9 mm); Brokopondo, Saramacca River basin, below Irene Falls, Browns Creek; 16.XII.1971; G. F. Mees leg.; RMNH D.29018 • 4 ♂; Brokopondo, Brownsweg, *c.* 90 km S of Paramaribo; 13.VII.1968; M. S. Hoogmoed leg.; RMNH D.25952 • 1 ♂, 1 ♀, 1 juvenile; Sipaliwini, Tumucumaque mountains, Koele Koele Creek, source stream in Marowijne River basin; 24.VII.1939; D. C. Geijskes leg.; RMNH D.3276.

DESCRIPTION OF THE GONOPODS

G1 (Figs 6E-L; 7) slender, straight in all views, relatively compressed mesolaterally, distal fourth slightly wider due to moderately developed mesial process. Marginal suture nearly straight, situated on mesial surface, with row of varied size marginal and submarginal setae along proximal portion (Figs 6F, K; 7A, E). Lateral suture distinct, shallow, moderately sinuous, extending approximately ⅔ of sternal surface from proximal to distal portions (Fig. 7A, E). Sternal surface relatively flat, sternal groove shallow or indistinct (Figs 6G, 7D). Scattered minute setae present on distal portion of pleonal and sternal surfaces (Fig. 7C-E). Marginal process relatively narrow, long, lamelliform, terminal portion rounded in mesial view, subtriangular in pleonal view, reaching as far as terminal opening of spermatic channel, not overreaching field of apical spines area (Figs 6D). Pleonal border slightly rounded, separated from marginal process by shallow depression (Figs 6E, K; 7A, C, E). Mesial process well developed, varying from slightly shorter than (approximately 0.7 × length) to as long as apical plate (Figs 6E, F H, J, K; 7A, C, E), subrectangular in mesial view; distal corner wider, ending in acute triangular projection directed mesially; proximal corner varying from subquadrate and as wide as distal corner to relatively rounded, slightly narrower than distal corner (Figs 6A, F, H-L; 7A, C, E). Apical plate well developed, slightly longer than wide (ration length/width 1.2, measured in mesial view), clearly separated from mesial process by deep incision, distally produced into two well-developed, smooth lamellae of distinct length; sternal lamella clearly longer than pleonal one (1.2 to 1.5, n = 8, measured in mesial view), distal margin of pleonal lamella rounded, fusion with sternal lamella marked by shallow fold forming distinct step on apical plate's pleonal surface, proximal portion of mesial margin with minute spine; sternal lamella sometimes with extra small fold after merging with pleonal lamella better seen in larger specimens, distal margin narrow, rounded (Figs 6E, F, H, J, K). Field of apical spines well developed, narrow, elongated along longitudinal axis of lateropleonal side of proximal portion of apical plate, delimited by crests corresponding to margins of pleonal and sternal lamellae

(Fig. 7B, C); spermatic channel terminal opening situated in basal portion of field of apical spines, near convergence of pleonal, sternal lamellae.

G2 (Fig. 6M) with both coxa and basis subrectangular, coxa being slightly larger and wider than basis; terminal segment as styliform flagellum, conspicuously slender, distinctly tapering along distal quarter (tip broken in paralectotype MCZ-IZ-CRU 1173), slightly shorter than G1.

Taxonomic remarks

Rathbun (1905: 291) described this species based on two males with only a brief description of the carapace, mxp3 and pleon, and figured the G1 of one of them (probably from the specimen MCZ-IZ-CRU 1173). No holotype was selected so both specimens are syntypes. Rathbun (1905) reported both syntypes were in MCZ and the labels indicate that one specimen was transferred to the USNM. To stabilize the taxonomy of the species and studies of *Microthelphusa*, we here select the male measuring 26.2 × 16.4 mm (USNM 29975) as the lectotype of *Pseudothelphusa wymani* Rathbun, 1905.

The image of the G1 by Rathbun (1905: 291, text-fig. 83c), however, is of low resolution and does not allow for a good assessment of its morphology. Holthuis (1959: 232: fig. 58a-c) provided better illustrations, but from a non-type specimen, whose G1 is also depicted here (RMNH D.14395, Fig. 7A, B). We examined the type specimens and the structures are illustrated for both specimens here (Fig. 6).

As already mentioned by Holthuis (1959), its G1 has a rather constant morphological structure, although with some variability in the apical plate. We also noticed that the sternal lamella can be more elongated and narrower than the pleonal lamella in some specimens (the length ratio between them varied from 1.2 to 1.5 in eight of the specimens examined here), and that, at least in some larger specimens, the sternal lamella may present a small additional fold just distal to the fusion with the pleonal lamella. In addition, we observed that the proximal portion of the mesial process may be slightly less prominent and more rounded in some specimens. However, these variations did not show any apparent geographic pattern, since specimens occurring in different basins can exhibit these variations. Holthuis (1959) considered two males (from Bakhuis Range and Wilhelmina Range: RMNH D.5346 and RMNH D.12117, respectively) as aberrant specimens due to the strong differences of their G1s regarding the typical G1 of *M. wymani* but provisionally treated them as belonging to this species until additional material could clarify their true taxonomic status. This was done by Rodriguez (1982), who recognized these specimens as belonging to *Kingsleya siolii* (Bott, 1967).

Pedraza's (2015) morphocladistic study of the Kingsleyinae showed that *Microthelphusa* Pretzmann, 1968 is a paraphyletic genus and that *M. wymani* clustered together only with *M. bolivari* Rodríguez, 1980, forming a sister group of a clade that includes some species belonging to *Microthelphusa* and other Kingsleyinae genera. The generic status of *M. wymani* is therefore doubtful and is provisionally maintained as such here until a more comprehensive study of the genus can be carried out. Tavares & Magalhães (2026), when comparing their new genus, *Okothelphusa*, with related groups of Kingsleyinae, considered that *Microthelphusa stricto sensu* should probably be restricted to four species: *M. rodriguezi* Pretzmann, 1968 (type species), *M. furcifer* Pedraza & Tavares, 2014, *M. meansi* Cumberlidge, 2007, and *M. roraimaensis* Suárez, 2015. In fact, the G1 of *M. rodriguezi* shows clear morphological differences compared to that of *M. wymani*: the strongly asymmetrical apical plate, with the sternal lamella much wider than the pleonal one; medial position of the mesial process projection; and pleonal surface of the apical plate basal portion with a patch of small spines (Tavares & Magalhães 2026). In addition, the apical plate mesial margin does not exhibit the minute spine on its proximal portion as it does in *M. wymani* (Fig. 7A, C, E). These characters, in addition to the more western distribution of the presumptive *Microthelphusa stricto sensu* species (that occur in western Guyana and northwestern Brazil – see Tavares & Magalhães 2026: 143, fig. 1), strongly suggest that the generic status of *M. wymani* needs to be revised in a future comprehensive revision of this genus.

Zoogeographic remarks

This species is mainly distributed in the mountainous part of central and eastern Suriname, occurring in upper and middle reaches of the Suriname River and Maroni/Marowijne River basins in the Eastern Guiana Province (Fig. 4). According to Lujan & Armbruster (2011), these rivers are considered part of the Atlantic coastal river system of the Guiana region. Apparently, *M. wymani* does not occur in the nearby basin (to the west) of the Corantijn River. This river basin is part of the Proto-Berbice basin in the central Guiana Shield region, which includes the modern Corantijn, Essequibo, Potaro, and Cuyuni Rivers. These hydrographic basins share a distinct geomorphological origin than that of the Atlantic coastal rivers of the eastern Guiana region and this seems to be reflected in the current distribution patterns of the aquatic fauna (Lujan & Armbruster 2011).

All the current available records point to an endemic distribution in Suriname. However, as the Maroni/Marowijne River marks the frontier between French Guiana and Suriname, it would not be unexpected that *M. wymani* also occur in the tributaries of the French Guiana side of the border. Both *M. wymani* and *O. touroulti* n. sp. occur in the upper reaches of the Maroni/Marowijne River basin (in the headwaters of the Litani River), but it remains unknown whether the distributions of these species overlap in this area, as it is still largely unexplored in terms of freshwater crab fauna.

Contributions of the authors

Conceptualization: CM, PKLN. Data Curation: CM, IMV, PKLN. Formal Analysis: CM, PKLN. Methodology: CM, PKLN. Writing (Original Draft Preparation): CM. Writing (Review & Editing): CM, IMV, PKLN.

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