

Two new species of freshwater crabs of the genus *Chaceus* Pretzmann, 1965 from the Serranía de Perijá of Colombia (Crustacea: Decapoda: Pseudothelphusidae)

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Abstract.—Two new species of the genus *Chaceus* Pretzmann, 1965, *C. curumanensis* and *C. ibiricensis*, are described and illustrated. The description of these two new species brings to nine the total number of species known in this genus, distributed in the Sierra de Santa Marta of Colombia, and Serranía de Perijá of Colombia and Venezuela. A key for the identification of the species based on the morphology of the first male gonopod is presented.

The genus *Chaceus* Pretzmann, 1965 comprises a group of freshwater crabs distributed in the Sierra de Santa Marta in Colombia and the Serranía de Perijá in Colombia and Venezuela. The systematics, cladistic and biogeography of the genus have been reviewed by Rodríguez (1982, 1992), Campos & Rodríguez (1984), Rodríguez & Campos (1989), Rodríguez & Bosque (1990), Rodríguez & Vilorio (1992) and Rodríguez & Herrera (1994). With the discovery of two new species, described herein, from the western slope of the Serranía de Perijá of Colombia, the genus now contains nine species.

Species of *Chaceus* are distinguished primarily by characteristics of the efferent branchial channel, the third maxilliped and the first male gonopod. The efferent branchial channel is partially closed by the spine of the jugal angle, and by the produced lateral lobe of the epistome. The exognath of the third maxilliped is 0.60 to 0.80 times as long as the ischium. The first male gonopod usually has the lateral process well developed, its shape varying according to the species, and is either subtriangular, elongated, or rounded. The apex is formed by mesial and caudal processes. A key for the

species of the genus is presented, based exclusively on the morphology of the first male gonopod. The terminology used for the different processes of the gonopod is that established by Smalley (1964), and Rodríguez (1982).

The shape of the efferent branchial channel, the length of the exognath of the third maxilliped, and the structure of the first male gonopod of the genus *Chaceus* suggest a close relationship with the genus *Strengeriana* Pretzmann, 1971. The first male gonopods in all species of *Chaceus* have the same basic elements as species of *Strengeriana*. Rodríguez (1982) has theorized on the possible derivation of the genus *Hypolobocera* Ortmann, 1897, from an ancestral *Chaceus* based on the homology of the finger-like mesial process in the latter, and the triangular caudal process with the two papillae found near the spermatic channel in the former. The morphology of the first gonopod in *C. davidi* Campos & Rodríguez, 1984, for example, supports this theory since the mesial and caudal processes are surrounded by a ridge that somewhat resembles the shape of the apex in species of *Hypolobocera*.

The material is deposited in Museo de

Historia Natural, Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá (ICN-MHN). The abbreviations cb and cl, reported as $cl \times cb$, indicate carapace breadth and carapace length, respectively. Color nomenclature follows Smithe (1975).

Family Pseudothelphusidae Rathbun, 1893
 Tribe Strengerianini Rodríguez, 1982
 Genus *Chaceus* Pretzmann, 1965

Chaceus curumanensis, new species

Fig. 1

Holotype.—Quebrada San Sebastián, Municipio Curumaní, foothill of the Serranía de Perijá, Cesar Department, Colombia, 100 m alt., 8 Dec 1978, leg. M. Türkay, male, 14.7×24.5 mm, ICN-MHN-CR 1993.

Paratype.—Same locality data as holotype: 1 male, 13.2×23.4 mm, ICN-MHN-CR 1266.

Type locality.—Quebrada San Sebastián, Municipio Curumaní, foothill of the Serranía de Perijá, Cesar Department, Colombia, 100 m alt.

Diagnosis.—Third maxilliped with exognath 0.67 times length of ischium. First gonopod with lateral process elongated, with distal portion slightly rounded in caudal view, subtriangular in distal view; apex with needle-shaped mesial process, and triangular caudal process; disto-mesial margin curving below mesial and caudal processes.

Description of holotype.—Carapace (Fig. 1F) with cervical groove straight, narrow and shallow distally, wide and deep proximally, ending some distance from lateral margin. Anterolateral margin lacking depression behind external orbital angle, but with slight depression near middle followed by another near level of cervical groove. Lateral margin with series of tubercles. Postfrontal lobes small, oval, delimited anteriorly by 2 depressions. Median groove lacking. Front without distinct upper border, frontal area regularly sloping downward, slightly bilobed in dorsal view, lower mar-

gin sinuous in frontal view. Dorsal surface of carapace smooth, covered by small papillae, regions not well demarcated. Third maxilliped with slight depression on distal half of external margin of merus, exognath 0.67 times length of ischium (Fig. 1H). Orifice of efferent branchial channel partially closed by spine of jugal angle, and by produced lateral lobe of epistome (Fig. 1G). First pereopods heterochelous; chelae with palms swollen, and fingers slightly gaping when closed (Fig. 1I). Walking legs (pereopods 2–5) slender, but not unusually elongated (total length 1.14 times breadth of carapace).

First male gonopod with lateral process elongated, with distal portion slightly rounded in caudal view (Fig. 1A), subtriangular in distal view (Fig. 1E); apex with needle-shaped mesial process, directed cephalically, and triangular caudal process, directed transversely to mesial process in caudal and cephalic views, both processes surrounded by lateral process in distal view; disto-mesial margin curving below mesial and caudal processes (Fig. 1C–E); lateral side of gonopod expanded with irregular rows of short setae, caudal surface with long setae proximally (Fig. 1A, B, D).

Color.—The holotype, preserved in alcohol, is light brown (near 37, Antique Brown) with dark specks on the dorsal side of the carapace. The dorsal and ventral surfaces of the chelae and walking legs are brown (near 139, True Cinnamon). The ventral surface of the carapace is brown (near 239, Ground Cinnamon).

Etymology.—The specific name refers to the type locality, the Municipio Curumaní.

Remarks.—Comparison of this new species with descriptions and specimens of other species of the genus revealed that this new species is most similar to *Chaceus pearsei* (Rathbun, 1915). The two can be distinguished by differences in the gonopods. The male first gonopod of *C. pearsei* has been described and illustrated by Rodríguez (1982:37, fig. 12). The lateral process in this new species is elongated, with

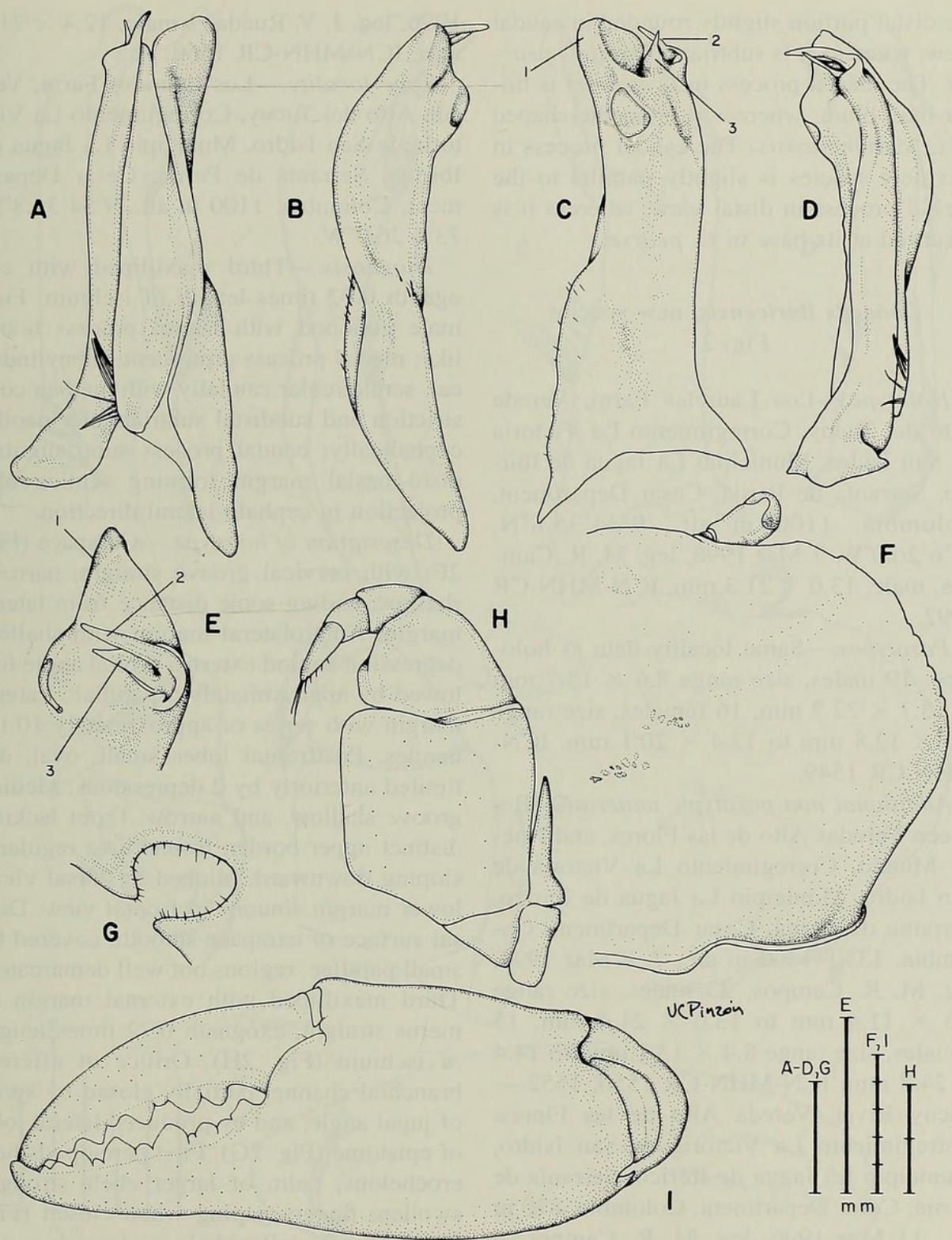


Fig. 1. *Chaceus curumanensis*, new species, male holotype, ICN-MHN-CR 1993: A, left first gonopod, caudal view; B, same, lateral view; C, same, cephalic view; D, same, mesial view; E, same, apex, distal view; F, right side of carapace with eye, dorsal view; G, left orifice of efferent branchial channel; H, left third maxilliped, external view; I, left cheliped, external view. 1, lateral process; 2, mesial process; 3, caudal process.

the distal portion slightly rounded in caudal view, whereas it is subtriangular in *C. pearsei*. The mesial process in *C. pearsei* is finger-like, blunt, whereas it is needle-shaped in *C. curumanensis*. The caudal process in this new species is slightly parallel to the mesial process in distal view, whereas it is recurved at its base in *C. pearsei*.

Chaceus ibiricensis, new species

Fig. 2

Holotype.—Los Laureles Farm, Vereda Alto del Tucuy, Corregimiento La Victoria de San Isidro, Municipio La Jagua de Ibirico, Serranía de Perijá, Cesar Department, Colombia, 1100 m alt., 9°34'35.8"N, 73°6'26.0"W, 7 Mar 1996, leg. M. R. Campos, male, 13.0 × 21.3 mm, ICN-MHN-CR 1992.

Paratypes.—Same locality data as holotype: 19 males, size range 8.6 × 13.7 mm to 13.7 × 22.7 mm, 16 females, size range 8.2 × 12.8 mm to 12.4 × 20.1 mm, ICN-MHN-CR 1549.

Additional non-paratypic material.—Between Veredas Alto de las Flores, and Nuevo Mundo, Corregimiento La Victoria de San Isidro, Municipio La Jagua de Ibirico, Serranía de Perijá, Cesar Department, Colombia, 1350–1400 m alt., 7, 8 Mar 1996, leg. M. R. Campos, 23 males, size range 7.3 × 11.4 mm to 13.0 × 21.4 mm, 15 females, size range 8.4 × 13.1 mm, to 14.4 × 24.8 mm, ICN-MHN-CR 1550, 1552.—Tucuy River, Vereda Alto de las Flores, Corregimiento La Victoria de San Isidro, Municipio La Jagua de Ibirico, Serranía de Perijá, Cesar Department, Colombia, 870 m alt., 11 Mar 1996, leg. M. R. Campos, 6 males, size range 9.9 × 15.9 mm to 10.9 × 17.6 mm, 3 females, size range 10.8 × 17.2 mm to 11.9 × 20.4 mm, 2 juveniles, ICN-MHN-CR 1559.—La Sorpresa Farm, Vereda Alto de las Flores, Corregimiento La Victoria de San Isidro, Municipio La Jagua de Ibirico, Serranía de Perijá, Cesar Department, Colombia, 1280 m alt., 12 Mar

1996, leg. J. V. Rueda, 1 male, 12.4 × 21.1 mm, ICN-MHN-CR 1560.

Type locality.—Los Laureles Farm, Vereda Alto del Tucuy, Corregimiento La Victoria de San Isidro, Municipio La Jagua de Ibirico, Serranía de Perijá, Cesar Department, Colombia, 1100 m alt., 9°34'35.8"N, 73°6'26.0"W.

Diagnosis.—Third maxilliped with exognath 0.72 times length of ischium. First male gonopod with lateral process hood-like; mesial process prominent, subcylindrical, semicircular caudally with median constriction and subdistal subtriangular papilla cephalically; caudal process subtriangular; disto-mesial margin forming semicircular projection in cephalo-lateral direction.

Description of holotype.—Carapace (Fig. 2F) with cervical groove straight, narrow, shallow, ending some distance from lateral margin. Anterolateral margin with shallow depression behind external orbital angle followed by approximately 5 papillae. Lateral margin with series of approximately 10 tubercles. Postfrontal lobes small, oval, delimited anteriorly by 2 depressions. Median groove shallow, and narrow. Front lacking distinct upper border, frontal area regularly sloping downward, bilobed in dorsal view, lower margin sinuous in frontal view. Dorsal surface of carapace smooth, covered by small papillae, regions not well demarcated. Third maxilliped with external margin of merus straight, exognath 0.72 times length of ischium (Fig. 2H). Orifice of efferent branchial channel partially closed by spine of jugal angle, and by produced lateral lobe of epistome (Fig. 2G). First pereopods heterochelous; palm of larger chela strongly swollen, fingers gaping when closed (Fig. 2I); palm of smaller chela moderately swollen, fingers not gaping when closed. Walking legs (pereopods 2–5) slender and elongated (total length 1.25 times the breadth of carapace).

First male gonopod with lateral process hood-like, lateral and cephalic outer surface covered with irregular papillae and spinules (Fig. 2A–C); apex with mesial and caudal

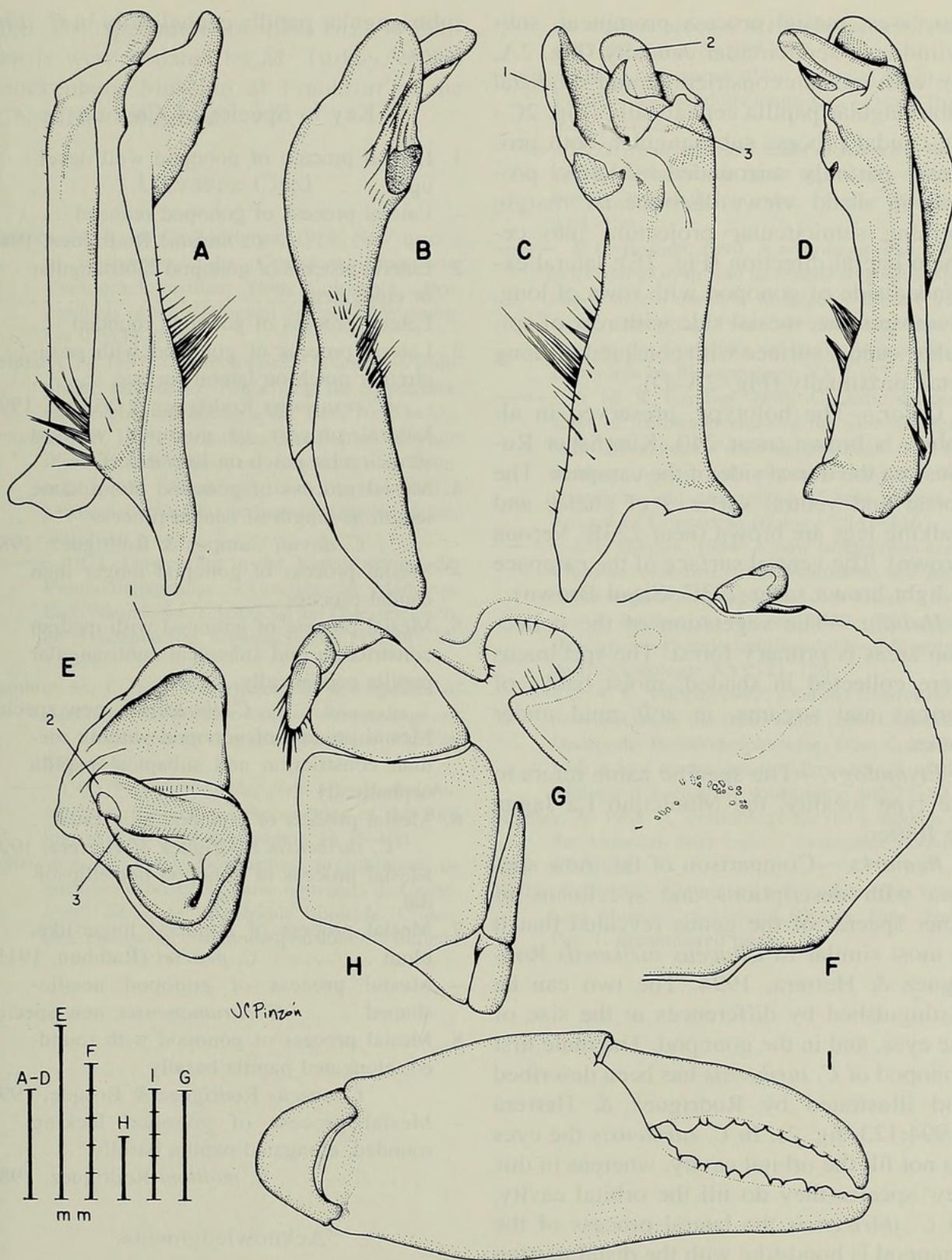


Fig. 2. *Chaceus ibiricensis*, new species, male holotype, ICN-MHN-CR 1992: A, left first gonopod, caudal view; B, same, lateral view; C, same, cephalic view; D, same, mesial view; E, same, apex, distal view; F, right side of carapace with eye, dorsal view; G, left orifice of efferent branchial channel; H, left third maxilliped, external view; I, right cheliped, external view. 1, lateral process; 2, mesial process; 3, caudal process.

processes; mesial process prominent, subcylindrical, semicircular caudally (Fig. 2A, B); with median constriction, and subdistal subtriangular papilla cephalically (Fig. 2C–E); caudal process subtriangular, both processes partially surrounded by lateral process in distal view; disto-mesial margin forming semicircular projection into cephalo-lateral direction (Fig. 2E); lateral expanded side of gonopod with rows of long, plumose setae, mesial side with row of spinules; caudal surface with conspicuous long setae proximally (Fig. 2A–D).

Color.—The holotype, preserved in alcohol, is brown (near 240, Kingfisher Rufous) on the dorsal side of the carapace. The dorsal and ventral surfaces of chelae and walking legs are brown (near 223B, Verona Brown). The ventral surface of the carapace is light brown (near 223C, Sayal Brown).

Habitat.—The vegetation of the collection areas is primary forest. The specimens were collected in shaded, moist banks of springs and streams, in soft mud under rocks.

Etymology.—The specific name refers to the type locality, the Municipio La Jagua de Ibirico.

Remarks.—Comparison of this new species with descriptions and specimens of other species of the genus revealed that it is most similar to *Chaceus turikensis* Rodríguez & Herrera, 1994. The two can be distinguished by differences in the size of the eyes, and in the gonopod. The male first gonopod of *C. turikensis* has been described and illustrated by Rodríguez & Herrera (1994:123, fig. 2). In *C. turikensis* the eyes do not fill the orbital cavity, whereas in this new species they do fill the orbital cavity. In *C. ibiricensis* the lateral process of the gonopod is hood-like with the distal portion directed distally in caudal view (Fig. 2A–E), whereas the lateral lobe is foliose and the distal portion is directed transversely to the main axis of the appendage in *C. turikensis*. The mesial process is ellipsoidal in *C. turikensis*, whereas it is subcylindrical with a median constriction and subdistal

subtriangular papilla cephalically in *C. ibiricensis*.

Key to Species of *Chaceus*

1. Lateral process of gonopod well developed 2
 - Lateral process of gonopod reduced *C. nasutus* Rodríguez, 1980
2. Lateral process of gonopod subtriangular or elongated 3
 - Lateral process of gonopod rounded ... 8
3. Lateral process of gonopod with semicircular notch on lateral surface
 - .. *C. cesarensis* Rodríguez & Vilorio, 1992
 - Lateral process of gonopod without semicircular notch on lateral surface .. 4
4. Mesial process of gonopod about same length as length of caudal process
 - *C. davidi* Campos & Rodríguez, 1984
 - Mesial process of gonopod longer than caudal process 5
5. Mesial process of gonopod with median constriction and subapical subtriangular papilla cephalically
 - *C. ibiricensis*, new species
 - Mesial process of gonopod without median constriction and subapical papilla cephalically 6
6. Mesial process of gonopod ellipsoidal ...
 - .. *C. turikensis* Rodríguez & Herrera, 1994
 - Mesial process of gonopod not ellipsoidal 7
7. Mesial process of gonopod finger-like, blunt *C. pearsei* (Rathbun, 1915)
 - Mesial process of gonopod needle-shaped *C. curumanensis*, new species
8. Mesial process of gonopod with rounded, elongated papilla basally
 - *C. caecus* Rodríguez & Bosque, 1990
 - Mesial process of gonopod lacking rounded, elongated papilla basally
 - *C. motiloni* Rodríguez, 1980

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