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A new species of freshwater crab of the genus *Strengeriana* Pretzmann, 1971, from Colombia (Crustacea: Decapoda: Pseudothelphusidae), with an updated key to the species of the genus

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Abstract.—We describe a new species of *Strengeriana* Pretzmann, 1971, *S. villaensis*, from Villahermosa, Tolima Department, on the eastern slope of the Central Andes. The genus is endemic to Colombia and is distributed in the Sierra Nevada de Santa Marta and the Western and Central Andes, at elevations ranging from 700 to 2000 m. With the addition of *S. villaensis* the total number of species in the genus rises to 16. This new species is distinguished from its congeners primarily by the morphology of the first male gonopod, particularly by the shape of the mesial, cephalic and lateral lobes, and the mesial and cephalic processes. We present a key for the identification of the species of the genus based on the morphology of the first male gonopod and the third maxilliped.

The genus *Strengeriana* Pretzmann, 1971 comprises a group of small pseudothelphusid crabs that inhabit mountain streams in the Sierra Nevada de Santa Marta and the Western and Central Andes, at elevations ranging from 700 to 2000 m. The systematics and biogeography of the genus were reviewed by Rodríguez & Campos (1989), Campos & Rodríguez (1993), and Campos (1995, 1999, 2005). The discovery of a new species of *Strengeriana*, described herein, raises the number of species in the genus to 16. The new species was found on the eastern slope of the Central Cordillera, at an elevation of 2000 m.

The terminology used for the different processes of the gonopod is that established by Smalley (1964), Rodríguez (1982) and Campos (2005). The material is deposited in the Museo de Historia Natural, Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá (ICN-MHN). The abbreviations cb and cl, indicate carapace breadth and carapace length, respectively. Color nomenclature follows Smithe (1975).

Family Pseudothelphusidae Rathbun, 1893
Tribe Strengerianini Rodríguez, 1982
Genus *Strengeriana* Pretzmann, 1971

***Strengeriana villaensis*, new species**

Figs. 1, 2

Material examined.—Holotype: male, cl 12.2 mm, cb 20.0 mm, Municipio Villahermosa, Inspección Primanera, Tolima Department, Colombia, elevation 2000 m, 17 Jul 2002, leg. R. Calderón (ICN-MHN-CR 1976). Paratypes: 2 males, cl 9.5 mm, cb 13.5 mm and cl 11.0 mm, cb 17.5 mm, same locality data as holotype (ICN-MHN-CR 1977). Non-type material:1 male, cl 10.0 mm, cb 16.5 mm, Quebrada Las Peñas, Vereda Torapacá, Municipio Líbano, Tolima De-

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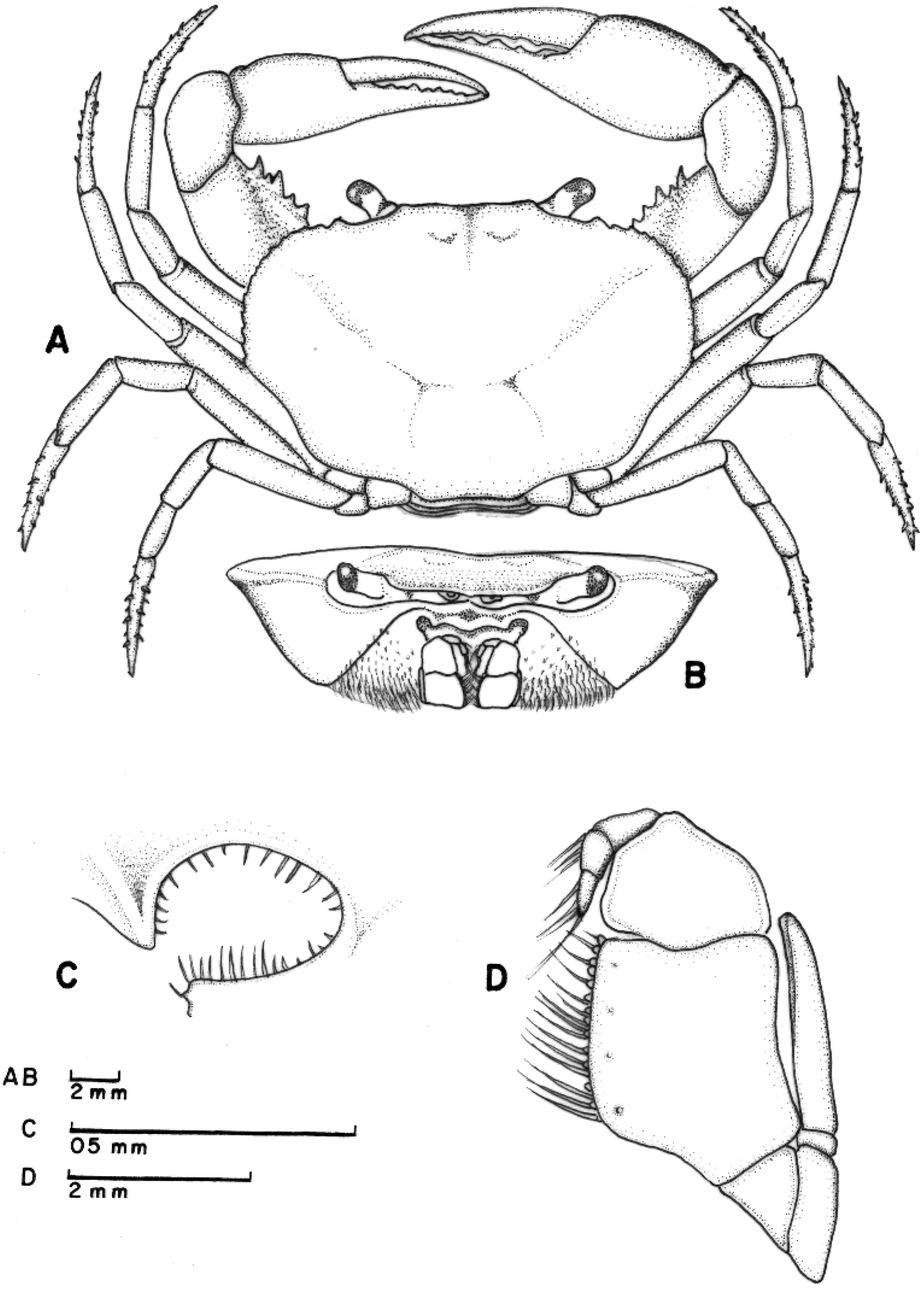

Fig. 1. *Strengeriana villaensis*, holotype (ICN-MHN-CR 1976). A, dorsal view of carapace and pereopods; B, frontal view of carapace; C, left aperture of efferent channel; D, left third maxilliped external view.

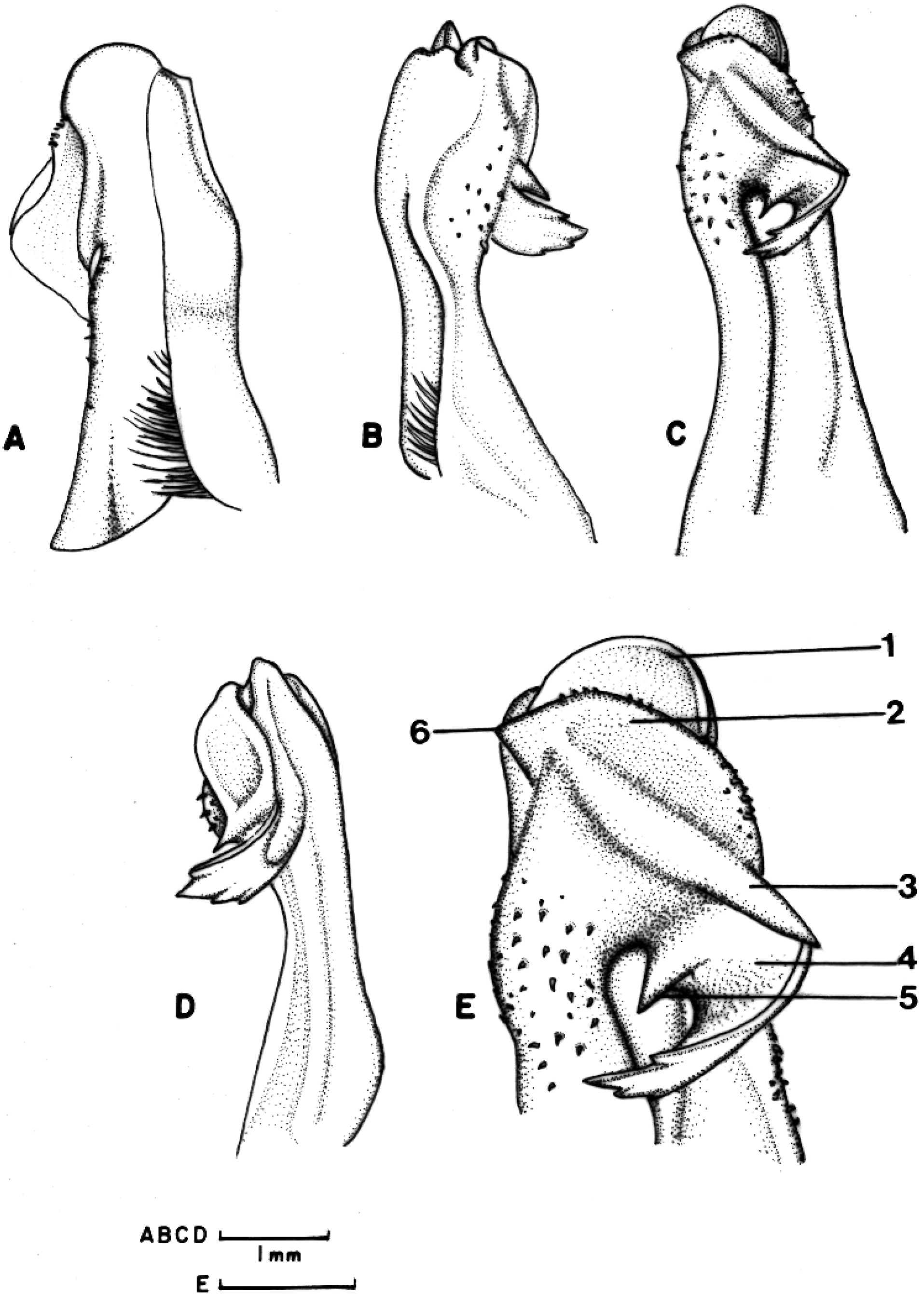

Fig. 2. *Strengeriana villaensis*, holotype (ICN-MHN-CR 1976), left first gonopod. A, whole gonopod, caudal view; B, whole gonopod, lateral view; C, whole gonopod, cephalic view; D, whole gonopod, mesial view; E, apex distal view. 1, mesial lobe; 2, cephalic lobe; 3, cephalic process; 4, mesial process; 5, internal spine; 6, lateral process.

partment, elevation 1500 m, 28 Jan 1996, leg. R. Casallas (ICN-MHN-CR 1659).

Diagnosis.—First male gonopod short, stout; mesial process sword-like, inwardly turned with semi-acute spine on external margin, 2 small semi-acute spines on internal margin, semi-acute spine distally, and prominent acute spine on internal surface; cephalic lobe bearing strong conical process, directed meso-diagonally, and a lateral small, blunt process.

Description of holotype.—Carapace (Fig. 1A) with cervical groove nearly straight, deep posteriorly, ending some distance from lateral margin; anterolateral margin with distinct depression behind external orbital angle, and second shallow depression on cervical groove level; lateral margin with approximately 12 tubercles; postfrontal lobes small, oval, delimited anteriorly by 2 depressions; median groove wide, shallow; surface of carapace in front of postfrontal lobes flat, inclined anteriorly; front (Fig. 1B) high, slightly excavated, upper border nearly straight with slight middepression, and row of coalescent tubercles in dorsal view, lower margin visible in dorsal view, strongly sinuous with tubercles in frontal view; dorsal surface of carapace covered by small papillae, limits between regions well demarcated; third maxilliped with shallow depression on subdistal external margin of merus, exognath overreaching ischium (Fig. 1B, D); orifice of efferent branchial channel ovate, partially closed by spine at jugal angle and by extension of lateral lobe of epistome (Fig. 1B, C).

First pereopods heterochelous (Fig. 1A); merus with 3 crests: upper crest with tubercles, internal lower crest with row of sharp teeth, diminishing in size proximally, and external lower crest with row of low tubercles; carpus with blunt low distal spine; palm smooth, swollen; fingers of chelae with rows of tubercles, slightly gaping when closed, tips crossing (Fig. 1A); walking legs (second to fifth pereopods) slender, but not unusually elongated, dactyli of second to fifth pereopods each with 5 rows of large spines diminishing in size proximally, arrangement of spines on dactylus of left third pereopod as follows: anterolateral and anteroventral rows with 5 spines, external row with 5 spines plus 2 proximal papillae, posteroventral and posterolateral rows with 3 spines.

First male gonopod with simple caudal lobe; mesial lobe with rounded expansion distally (Fig. 2A, B, E); mesial process sword-like, inwardly turned with semi-acute spine on external margin, 2 small semi-acute spines on internal margin, semi-acute spine distally, and prominent, acute spine on internal surface (Fig. 2B–E); elongated bulge on lateral side (Fig. 2B, C, E); mesial and cephalic lobes forming long slit, where spermatic channel is located; (Fig. 2C–E); cephalic lobe forming rounded bulge, ending in a lateral small, blunt process, and prominent, conical, semi-acute cephalic process, directed meso-diagonally; conspicuous caudal setae; lateral bulge with rows of dark spines; spermatic channel with rows of conspicuous dark spines; cephalic distal lobe with irregular rows of spines (Fig. 2A–E).

Color (nomenclature after Smithe 1975).—Specimens preserved in alcohol are brown (near 121 B, Brussels Brown), on the dorsal side of the carapace, the chelae and the walking legs. The ventral surface of the carapace, the chelae and the walking legs are buffy brown (near Sayal Brown, 223 C).

Etymology.—The specific name refers to an abbreviation of Villahermosa, Colombia, the type locality.

Remarks.—This species closely resembles *Strengeriana chaparralensis* Campos & Rodríguez, 1984 and *S. huilensis* Rodríguez & Campos, 1989 in the shape of the first male gonopod. However, the three can be distinguished by features of the first male gonopod. The mesial process in *S. chaparralensis* and *S. huilensis* is inwardly turned and bifid, but longer in *S. huilensis* with a small, acute spine on the internal surface, whereas in *S. villaensis* it is sword-like with a semi-acute spine on the external margin, two small semi-acute spines on the internal margin, a prominent, semi-acute spine distally, and a prominent, acute spine on the internal surface. In addition, the cephalic lobe in *S. chaparralensis* has two prominent conical processes on its surface, one distal and another proximal, directed cephalically, whereas *S. villaensis* has a single prominent, conical, distal process which is directed meso-diagonally, and no proximal process. The mesial lobe in *S. huilensis* presents a subdistal blunt tooth which is absent in *S. chaparralensis* and *S. villaensis* [Fig. 2A–E; Campos (2005), Figs. 23A–E, 29A–D].

Key to species of the genus *Strengeriana*

1. First gonopod with mesial lobe projected cephalically 2
   First gonopod with mesial lobe crosswise to apical portion 15
2. First gonopod with hood-shape mesial lobe 3
   First gonopod with rounded mesial lobe 8
3. First gonopod without caudal process 4
   First gonopod with caudal process . . . . *S. restrepoi* Rodríguez, 1980
4. First gonopod with cephalic lobe sinuous . . . . *S. risaraldensis* Rodríguez & Campos, 1989
   First gonopod with cephalic lobe not sinuous 5
5. First gonopod with cephalic lobe semicircular 6
   First gonopod with cephalic lobe not semicircular 7
6. First gonopod with entire mesial process . . . . *S. bolivarensis* Rodríguez & Campos, 1989
   First gonopod with bifid mesial process . . . . *S. florenciae* Campos, 1995
7. Cephalic lobe with prominent cephalic process . . . . *S. foresti* Rodríguez, 1980
   Cephalic lobe without cephalic process . . . *S. fuhrmanni* (Zimmer, 1912)
8. Mesial lobe of first gonopod with subapical toothed crest . . . . *S. taironae* Rodríguez & Campos, 1989
   Mesial lobe of first gonopod without subapical crest 9
9. Cephalic lobe of first gonopod with prominent lateral process . . . . *S. casallasi* Campos, 1999
   Cephalic lobe of first gonopod with small or without lateral process . 10
10. Mesial process of first gonopod hand-shape 11
    Mesial process of first gonopod sword-like or bifid 12
11. Exognath of third maxilliped with rudimentary flagellum . . . . *S. flagellata* Campos & Rodríguez, 1993
    Exognath of third maxilliped without rudimentary flagellum . . . . *S. maniformis* Campos & Rodríguez, 1993
12. Mesial process of first gonopod sword-like . . . . *S. villaensis*
    Mesial process of first gonopod bifid 13
13. Mesial lobe of first gonopod with blunt tooth subdistally . . . . . . *S. huilensis* Rodríguez & Campos, 1989
    Mesial lobe of first gonopod without tooth subdistally 14
14. Cephalic lobe of first gonopod with prominent proximal process . . . . *S. chaparralensis* Campos & Rodríguez, 1984
    Cephalic lobe of first gonopod with small proximal process . . . . *S. antioquensis* Prahl, 1987
15. Caudal lobe of first gonopod ending tooth-like distally . . . . *S. cajaensis* Campos & Rodríguez, 1993
    Caudal lobe of first gonopod ending rounded distally . . . . *S. tolimensis* Rodríguez & Díaz, 1981

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