

## A new terrestrial amphipod (Crustacea, Amphipoda, Talitridae) from the Dominican Republic

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**ABSTRACT.** A new species, *Caribitroides genaroi* (Crustacea, Amphipoda, Talitridae), from a montane region of Dominican Republic is described. The main differences between *C. genaroi* sp. nov. and other congeneric species, previously known from the Caribbean Islands and Central America, are also provided in tabular format.

**Key words:** Amphipoda, Talitridae, *Caribitroides*, new species, Dominican Republic, Hispaniola.

**RESUMEN.** Se describe una especie nueva, *Caribitroides genaroi* sp. nov. (Crustacea, Amphipoda, Talitridae) proveniente de una zona montañosa de la República Dominicana. Se señalan las principales diferencias entre la especie nueva y las otras congenericas, conocidas de las isla del Caribe y América Central.

**Palabras clave:** Amphipoda, Talitridae, *Caribitroides*, especie nueva, República Dominicana, Hispaniola.

### INTRODUCTION

Members of genus *Caribitroides* Bousfield, 1984 (Crustacea, Amphipoda, Talitridae) are one of the few groups of amphipod crustaceans that have achieved some degree of success at the terrestrial environment, by living in the rain and cloud forests of the Caribbean islands and Central America. Members of this genus typically inhabit the forest leaf litter (Lindeman, 1990)

When Bousfield (1984) briefly described the genus based on specimens from Jamaica, he (?) also wrote that several undescribed species are represented by specimen material from Jamaica and elsewhere (Lindeman, 1990). *Caribitroides* is presumably related to a more northern group of extant supralittoral simply-dactylate talitrids whose members are specialized to live in estuaries and salt marshes and which subsequently and gradually invaded the terrestrial altitudinal montane levels during climatic changes of the Oligocene. e. At least one terrestrial *Caribitroides* has been reported from higher elevations in Haiti, but it has not yet been fully described and illustrated (*Caribitroides baitianus*) (Bousfield & Poinar, 1994; 1995; Bousfield, personal communication (2007).

The aim of present paper is to describe a new species . of *Caribitroides* collected in a montane habitat of the Dominican Republic.

## SYSTEMATIC

*Caribitroides genaroi* sp. nov.

(Figs. 1-3)

**Diagnosis.** Nonsexually dimorphic land hoppers of the cloud and rain forest South-Western montane region of Sierra de Bahoruco, Dominican Republic, characterized by the following: Body smooth. Eyes small ovoidal, not tending to dorsal contiguity; eyes diameter not longer than wide of peduncle article 4 of antenna 2. Antenna 1 short 1/3 long of article 4 on antenna 2; flagellum with five articles. Antenna 2 slender, not sexually dimorphic; flagellum as long as peduncle; Mandibular left lacinia movilis 4-dentate. Inner lobe, on maxilla 1 narrows, linear, with a few scattered fine setules proximally; outer lobe subquadrate, outer margin convex, palp vestige minutely elongate one segmented. Maxilliped palp short, stout, 4<sup>th</sup> article very small, conical and masked by terminal spines of article 3; outer plate slightly arcuate, with terminal pellucid lobe; inner lobe subquadrate; apical spine teeth large, sharp. Inner lobe on lower lip vestigial. Coxae 2-4 posteriorly notched. Dactyls of pereopods 3-4 without cusps. Gnathopod 1 not sexually dimorphic, simple, lacking palm on article 6, lacking pellucid lobes. Gnathopod 2 not sexually dimorphic, article 2 slightly expanded proximally; article 3 elongate; articles 4-6 bearing posterior not pellucid lobes; article 6 shorter than 5; minutely subchelate, mittenlike; distal lobe non pellucid and long, extending well beyond dactyl; dactyl very small, with hooked tip. Pereopods 5-7 weakly heteropodous; pereopod 5 much shorter than 6 and 7. Pleopods 1-3 slender, peduncle slightly curved, naked; rami sub equals, shorter than peduncle (1/3 or less length of peduncle) pleopod 3, the shortest. Uropod 1 peduncle long; interramal spine large; outer ramus with spines. Uropod 2 rami equals, truncate at tip; uropod 3 short, two times wide than base of ramus; with one spine on peduncle. Telson short, quadrangular, with posterolateral and apicoterminial spines.

**Diagnosis (en Español).** Anfípodo terrestre sin dimorfismo sexual del bosque húmedo de la región sur occidental de la sierra de Bahoruco, República Dominicana, caracterizado por: Cuerpo liso. Ojos pequeños y ovoidales, sin tendencia a contigüidad dorsal, diámetro no más largo que el ancho del artejo 4 de la antena 2. Antena 1 corta, 1/3 del largo del artejo 4 de la antena 2; flagelo, con cinco artejos. Antena 2 estrecha, no sexualmente dimórfica; flagelo del largo del pedúnculo. Mandíbula izquierda con 4 dientes en la lámina móvil. Lóbulo interno de la maxila 1 estrecho, en línea con algunas setas finas proximales no muy separadas; lóbulo externo subcuadrado, margen externo convexo; palpo vestigial algo alargado, de un solo artejo. Palpo del maxilípodo corto y grueso; artejo 4 muy corto, cónico y enmascarado por las espinas terminales del artejo 3; lóbulo externo ligeramente arqueado, con un lóbulo terminal pelúcido; lóbulo interno subcuadrado; diente apical espinoso grande y afilado. Lóbulo interno del labio inferior vestigial. Coxas 2-4 con escotadura posterior. Dactilos de los pereiópodos 3-4 sin cúspides. Gnatópodo 1 no sexualmente dimórfico, simple, sin palma en el artejo 6, sin lóbulos pelúcidos. Gnatópodo 2 no sexualmente dimórfico, artejo 2 ligeramente expandido en su extremo proximal; artejo 3 alargado, artejos 4-6 con el lóbulo posterior no pelúcido; artejo 6 más corto que el 5; con subquela diminuta, en forma de manopla; lóbulo distal no pelúcido y alargado, extendido más allá del dactilo; dactilo muy pequeño, con punta curvada. Pereiópodos 5-7 poco diferentes; pereiópodo 5 mucho más corto que

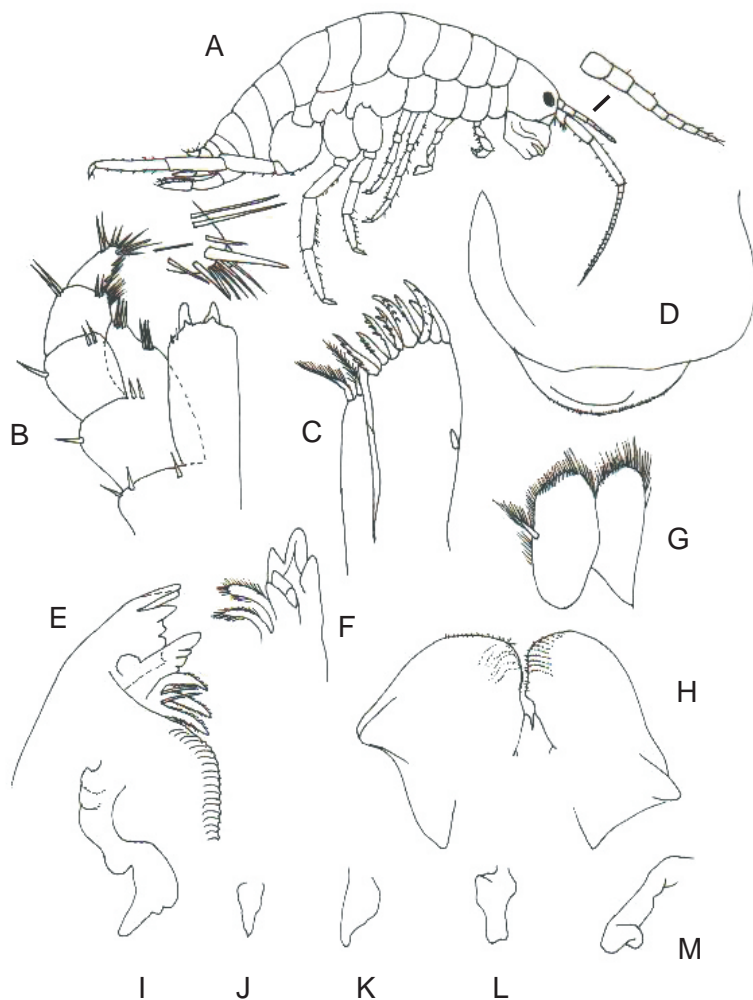


Fig. 1. *Caribitroides genaroi* sp. nov., female: A, lateral view of animal; B, Maxilliped; C, maxilla 1; D, upper lip; E, left mandible; F, right mandible; G, maxilla 2; H, lower lip; I, gill 1; J, gill 2; K, gill 3; L, gill 4; M, gill 5.

el 6 y 7. Pleópodos 1-3 delgados; pedúnculo algo curvado; desnudo, ramas subiguales, más cortas que el pedúnculo (1/3 o menos del largo del pedúnculo) pleópodo 3 el más corto. Urópodo 1 con pedúnculo largo; espina interramal larga; rama externa con espinas. Urópodo 2 con ramas iguales, truncado en su extremo distal; urópodo 3 corto, dos veces el ancho de la base de cada rama, con una espina en el pedúnculo. Telson corto, cuadrangular, con espinas posterolaterales y apicales terminales.

**Description of holotype.** Antenna 2, article 5 slightly longer than 4; flagellum of 20 articles (Fig. 1A)

Buccal mass directed forward. Maxilliped inner plate scarcely setose; without serrulate distal spines; with two apical spine teeth; median margin naked; palp article 4 minute; inner lobe on article 2 small (Fig. 1B); maxilla 1 outer lobe bearing nine serrate distal setae; inner lobe with two distal plumose setae (Fig. 1C); lower lip rounded and covered with tiny setae on medial margin (Fig. 1D); mandibles incisive with three teeth; left mandibule, lacinia mobilis with four teeth; with three accessory setae (Fig. 1E); right mandibule, lacinia mobilis with three teeth; two accessory setae (Fig. 1F); inner lobe on maxilla 2 narrower than outer, with one facial setae midway on its inner border; both lobes bearing apical setae (Fig. 1G); lower lip bearing a tiny but complete inner lobe (Fig. 1H); Coxae 1-2 with some small ventral setae; coxa 4 notched on anterior border. Gnathopod 1 article 2 anterior margin with 3 setae; posterior naked; article 5 wider than 6; article 6 with distal setae on anterior border: posterior completely covered with setae (Fig. 2A); gnathopod 2 article 2 sinuous, anterior margin armed with six short setae; posterior naked; article 6 as long as 5; outer face with a row of 15 setae on an almost right line; inner naked (Fig. 2B); pereopod 3 longer than 4; article 6 posterior margin naked; rest similar to pereopod 4 (Figs. 2C-D); pereopod 5 article 2 being narrowed distally; article 4 with small anterodistal lobe (Fig. 2E); pereopod 6 article 2 anterior and posterior margin sub parallel; with a discrete posterodistal lobe; article 4 forming a small anterodistal lobe; article 6 longer than 5 (Fig. 2F); article 2 of pereopod 7 ovoidal, with a very small posterior lobe; article 4 not forming anterodistal lobe; article 6 longer than 5 (Fig. 2G). Pleopod 1 with hooked coupling spines; pleopods 1-3 rami equals in length (Figs. 3E, F and G; rami articles not clearly shown; pleopod 3 the shortest. Uropod 1 peduncle with two pairs of dorsal spines; interramal spine present; inner ramus with 4 dorsal and two distal spines; outer ramus with one long, and four short distal spines (Fig. 3H). Uropod 2 peduncle with 3 dorsal spines; inner ramus with two dorsal and 3 distal spines; outer ramus with two dorsal and one long and one short spines (Fig. 3I). Uropod 3 peduncle with one spine; ramus shorter than peduncle; with two terminal spines (Fig. 3J); epimerum 2 without posterior setae, epimerum 3 forming one tooth on ventral corner; with 2 small posterior setae (Fig. 3K); telson with parallel lateral borders (Fig. 2I). Oostegite 1 with three distal setae; oostegite 2 with more than five setae; oostegite 3 with three setae; oostegite 4 with two sets of two setae. Gills large, flap-like; gill 1 with two small secondary lobes (Figs. 1I, 1J, 1K, 1L, 1M).

**Male:** Similar than female. Article 5 of gnathopod 1 longer than that of female (Figs. 3L, M and N) show first gill and gnathopods 1-2 of male.

**Types. Holotype.** Female 13 mm; Las Abejas, Sierra de Bahoruco, DOMINICAN REPUBLIC; 1314 m over sea level; 8.xii.2005; J. A. Genaro coll.; deposited at the

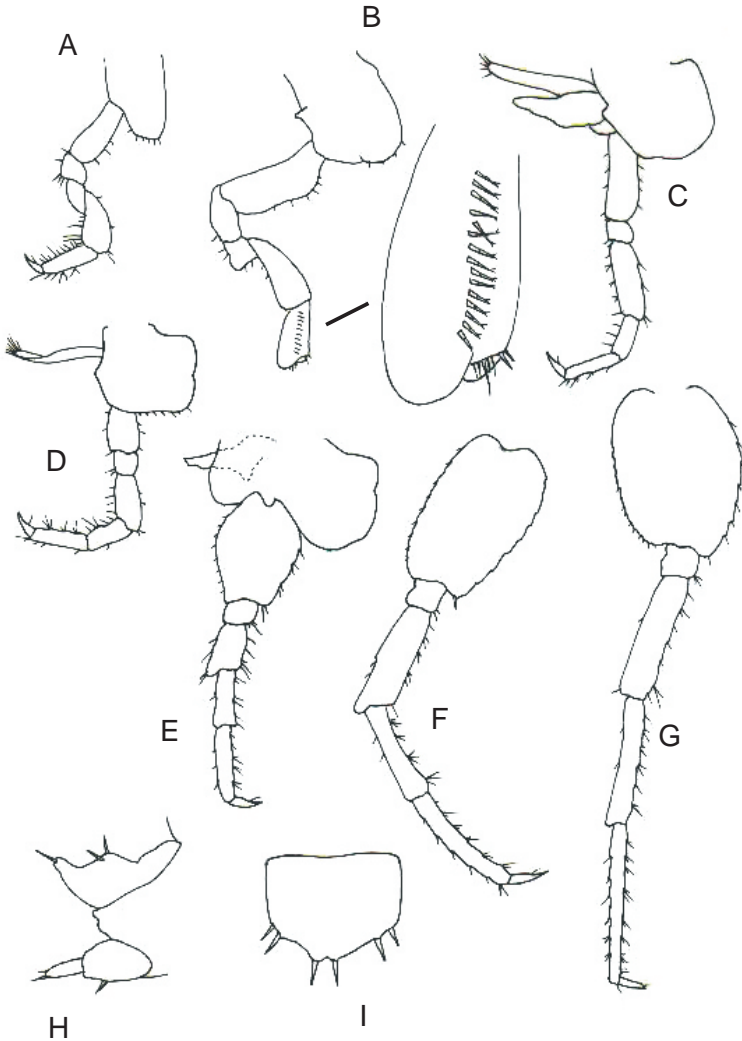


Fig. 2 *Caribitroides genaroi* sp. nov., female: A, Gnathopod 1; B, Gnathopod 2; C, pereopod 3; D, pereopod 4; E, pereopod 5; F, pereopod 6; G, pereopod 7; H, lateral view of uropod 3 and telson; I, telson.

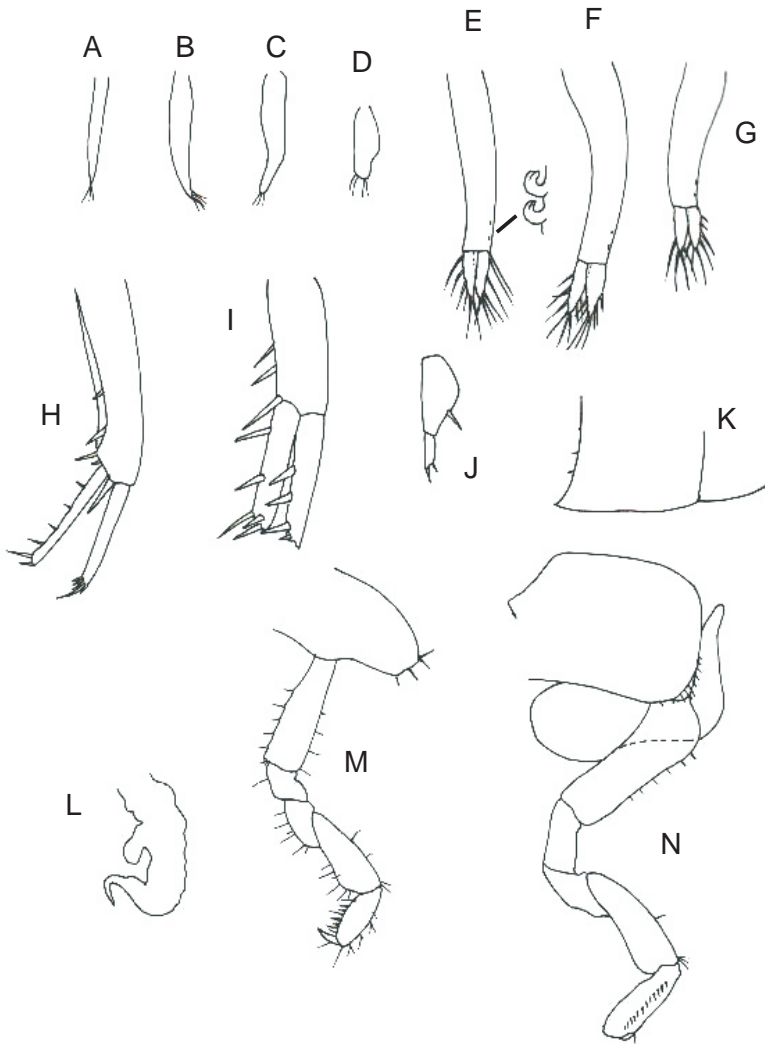


Fig. 3 *Caribitoides genaroi* sp. nov., female: A, oostegite 1; B, oostegite 2; C, oostegite 3; D, oostegite 4; E, pleopod 1; F, pleopod 2; G, pleopod 3; H, uropod 1; I, uropod 2; J, uropod 3; K, epimera 2-3; male: L, gill 1; M, gill 2; N, Gill 3.

Crustacean Collection of the Centre for Marine Research, University of Havana. **Paratypes.** Female, 12 mm; female 11 mm; male 12 mm; female 10 mm; female 13 mm partially broken; ovigerous female (four eggs) 11 mm; female, 9 mm; female 13 mm; female 12 mm; female 11 mm; collected and deposited together with the holotype.

**Etymology.** Named in honor of our friend and entomologist Dr. Julio A. Genaro, who loaned the material for the present study.

**Remarks.** At present only two terrestrial amphipod species are known from Hispaniola; one undescribed species (Bousfield 1994, 1995, pers. comm.) from Haiti, and *C. genaroi* sp. nov. from the Dominican Republic. In addition, a fossil record from amber, *Tethorcbestia palaeorcbestes* Bousfield & Poinar 1995, is known.

*C. genaroi* sp. nov. has been collected only in the montane area of Las Abejas, Sierra de Bahoruco, Dominican Republic. No other amphipod species is known from this area. The main differences among *C. genaroi* sp. nov. and all other Caribbean Islands known species in the genus are given in Table 1.

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Table 1. Main differences between *C. genaroi* sp. nov. and congeneric species from the Caribbean and Central American region.

<i>Caribhitroides</i> species	Palp max. 1	G-2 article 6	Pleopods	Uropod 3	Telson	Epimerum 3	Distribution
<i>Caribhitroides inxclensis</i> Lindeman, 1990	Minutely one segmented	With posterior weakly pellucid lobe	Rami approximately equal length than peduncles *	Base of peduncle wide	Short, triangular, with dorsal spines	With one or two posterior setae	Mexico
<i>Caribhitroides newtoni</i> Lindeman, 1990	-----	With posterior pellucid lobe	Rami approximately equal length than peduncles	Base of peduncle wide	Short, triangular, with dorsal spines	With one or two posterior setae	Mexico
<i>Caribhitroides jamaicensis</i> Bousfield, 1989	Minutely one segmented	With posterior pellucid lobe	Rami approximately equal length than peduncles	Base of peduncle wide	Short, triangular, with dorsal spines	With one or two posterior setae	Jamaica
<i>Caribhitroides peeki</i> Lindeman, 1990	Minutely two segmented	With posterior pellucid lobe	Rami equal to or longer than peduncles	Base of peduncle wide	Short, triangular, with dorsal spines	With three or four posterior setae	Mexico
<i>Caribhitroides chiapensis</i> Lindeman, 1990	-----	With posterior pellucid lobe	Rami approximately equal length than peduncles	-----	Triangular, a little longer than wide	With three posterior setae	Mexico
<i>Caribhitroides</i> sp. sensu Bousfield (1994-95)	Minutely one segmented	With posterior weakly pellucid lobe	Rami approximately equal length than peduncles	Base of peduncle wide	Short, triangular, with dorsal spines	With one posterior setae	Haiti
<i>C. genaroi</i> sp. nov.	Minutely one segmented	With posterior no pellucid lobe	Rami 1/3 length of peduncle **	Base of peduncle narrow	Short quadrangular, without dorsal spines	With two posterior setae	Dominican Republic

\* Except uropod 3

\*\* The peduncle and rami of the three pleopods (rami 1/3 length of peduncle) as well as the quadrangular telson are exclusive conditions of *C. genaroi* sp. nov.