

A NEW SPECIES OF *BENTHANA* BUDDE-LUND
FROM BRAZILIAN CAVES
(CRUSTACEA; ISOPODA; ONISCOIDEA)

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Abstract. — *Benthana iporangensis*, a new species of terrestrial isopod inhabiting caves of São Paulo, Brasil, is described, figured and compared with the closest species: *Benthana longipenis* and *Benthana santosi*. The position of the “noduli laterales” is presented for the three species here studied.

Many studies (Jackson 1926; Van Name 1936; Verhoeff 1941; Verhoeff 1951; Gruner 1955; Lemos de Castro 1958, 1985) have contributed to the knowledge of the genus *Benthana* Budde-Lund, 1908.

Lemos de Castro (1958b) reviewed the genus, described seven new species and provided a detailed redescription and a key for all hitherto known species. He described two additional new species, *B. moreirai* and *B. dimorpha* (1985).

The genus *Benthana* Budde-Lund, 1908 resembles *Ctenoscia* Verhoeff, 1917, *Benthanoidea* Lemos de Castro, 1965 and *Benthanoops* Barnard, 1932, in having inner ctenate teeth on outer lobe of maxillula.

Benthana is easily distinguished by the presence of a sharp curved tooth on the lateral margin of male first exopodite of pleopod.

A new species of the genus *Benthana* is here described based on specimens collected in Brazilian caves. A diagnosis of the genus is also presented.

Benthana Budde-Lund, 1908

Diagnosis. — Cephalon frontal line not visible, lateral lobes small, suprantennal line very prominent. Eyes small with numerous ommatidia. Mandibles with three penicilli on the right appendage and two on the left. Outer lobe of the maxillula with four simple outer spines, five large ctenate ones and a small and simple one. Endite of maxilliped

with an anterior and a posterior spine and several short teeth at distal margin. Pleon abruptly narrower than pereion. Exopodites of the first male pleopod provided with a sharp, curved tooth on posterior margin. Endopodites of second male pleopod with a distal extremity very slender and long. Telson triangular, with sides straight or slightly sinuous, extremity subacute. Both rami of the uropods inserted at same level or very close, always posterior to tip of telson. In some species sexual dimorphism in pereopods 1–3 and 7 and in the proportions of uropods exopodites and endopodites, longer in male than in female.

Type species. — *Benthana picta* (Brandt, 1833).

Benthana iporangensis, new species

Figs. 1–4

Type material. — Museu Nacional collection. Iporanga, São Paulo — Águas Quentes Caves: 2 ♂♂ and 3 ♀♀, Eleonora Trajano leg., November 1983, 1 ♂ Holotype MN 239.MI; 1 ♂ and 3 ♀♀ Paratypes MN 240.MI; 1 ♂, L. Ishibe leg., August 1978, Paratype MN 241.MI — Areias de Cima Caves: 1 ♂, E. Trajano leg., November 1983, Paratype MN 242.MI; 1 ♂, E. Trajano leg., September 1985, Paratype MN 243.MI — Areias de Baixo Caves: 1 ♀, E. Trajano leg., February 1985, Paratype MN 244.MI.

Description. — Adult male: 6.4–8.6 mm. Body subconvex 3.3 times as long as broad.

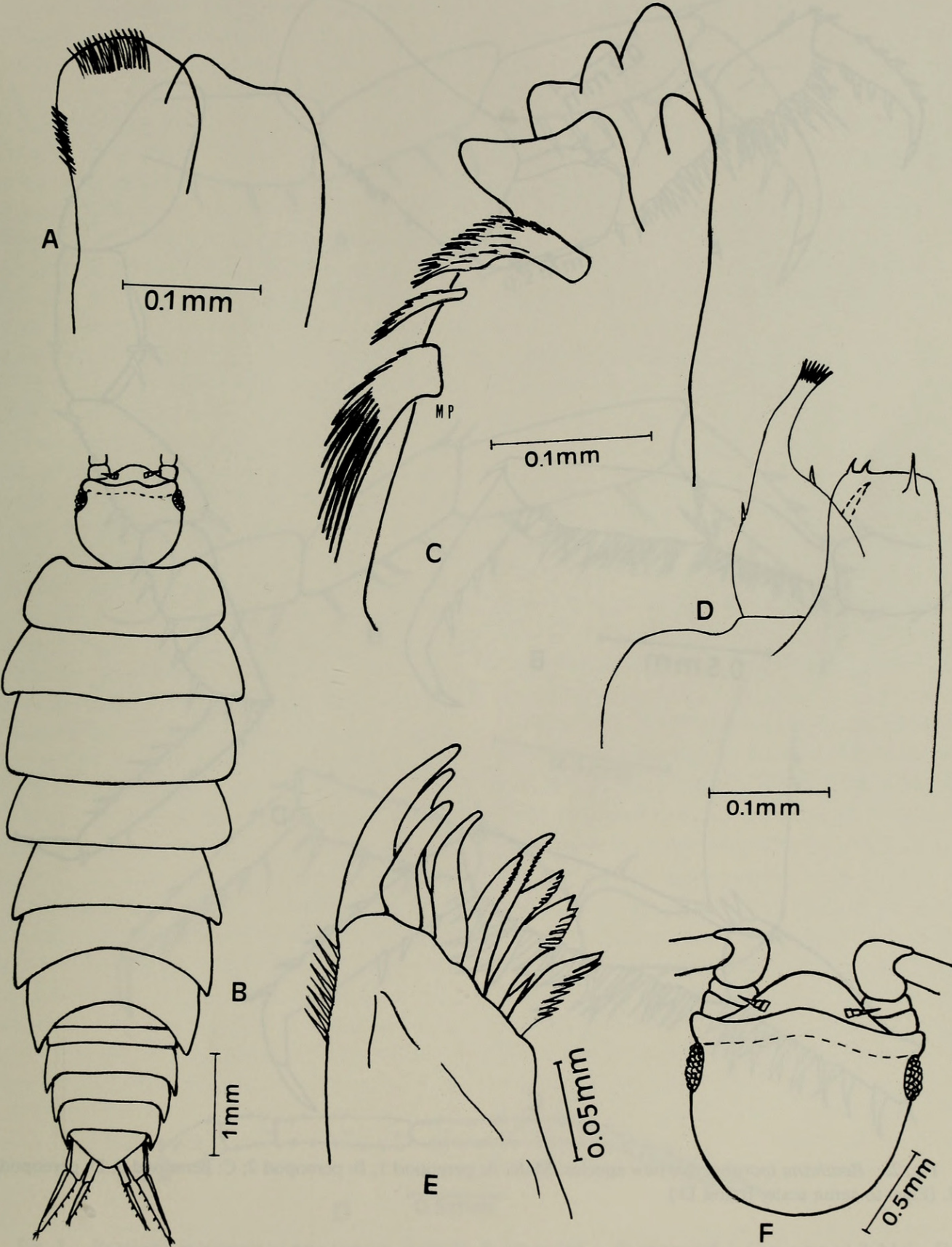


Fig. 1. *Benthana iporangensis* new species. Male. A: maxilla; B: dorsal view; C: right mandible; D: maxilliped; E: maxillule; F: cephalon, dorsal view.

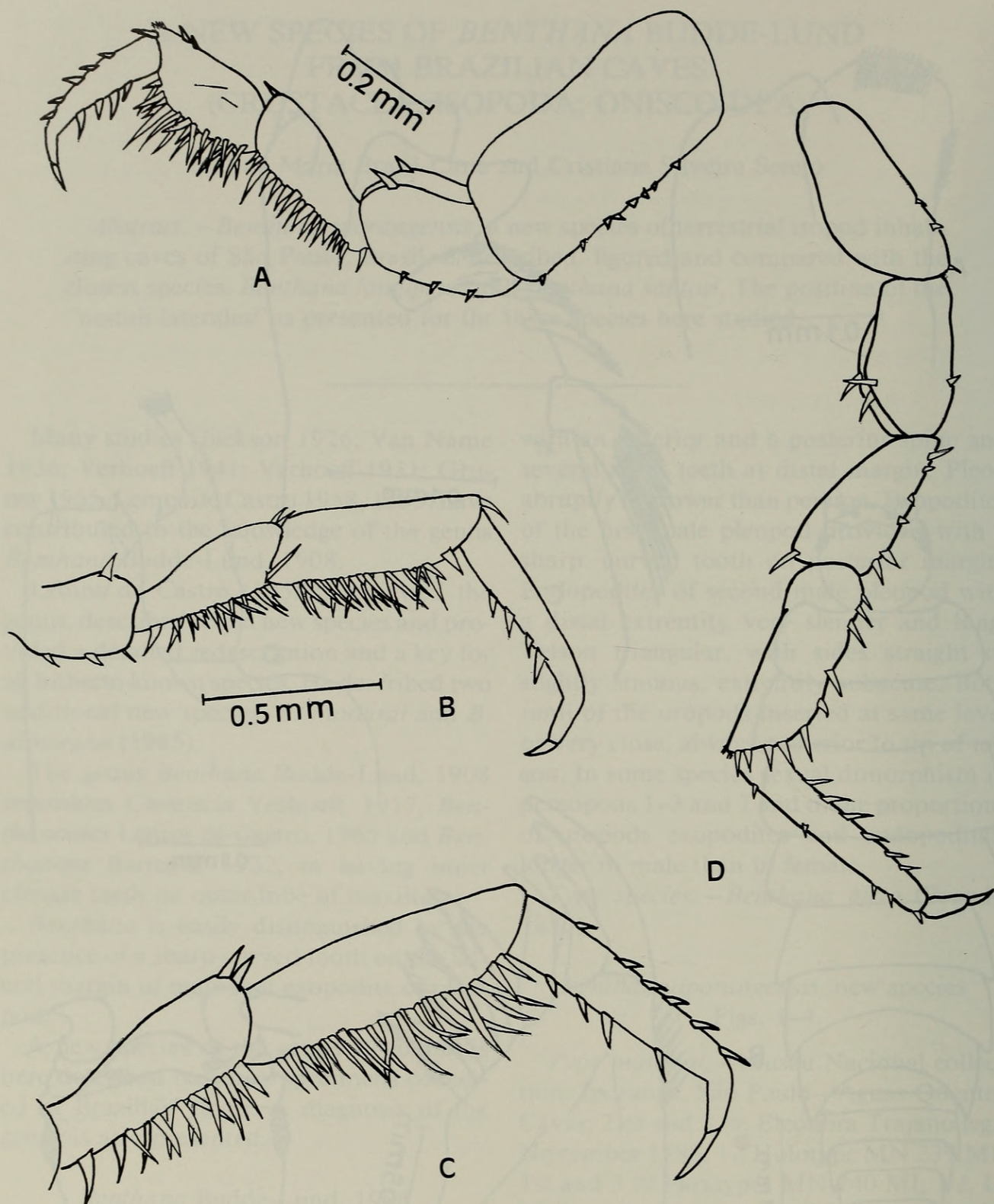


Fig. 2. *Benthana iporangensis* new species. Male. A: pereopod 1; B: pereopod 2; C: pereopod 3; D: pereopod 7. (Figs. to same scale: B and D.)

Body surface smooth, without pigmentation. Head big ($\frac{1}{8}$ of the total body length), as wide as long. Lateral lobes small. Suprantennal line distinctly marked, sinous,

with the lateral parts concave. Eyes small with about 18 ommatidia without pigmentation. Antennula surpassing the suprantennal line. Antennae reaching the end of fourth

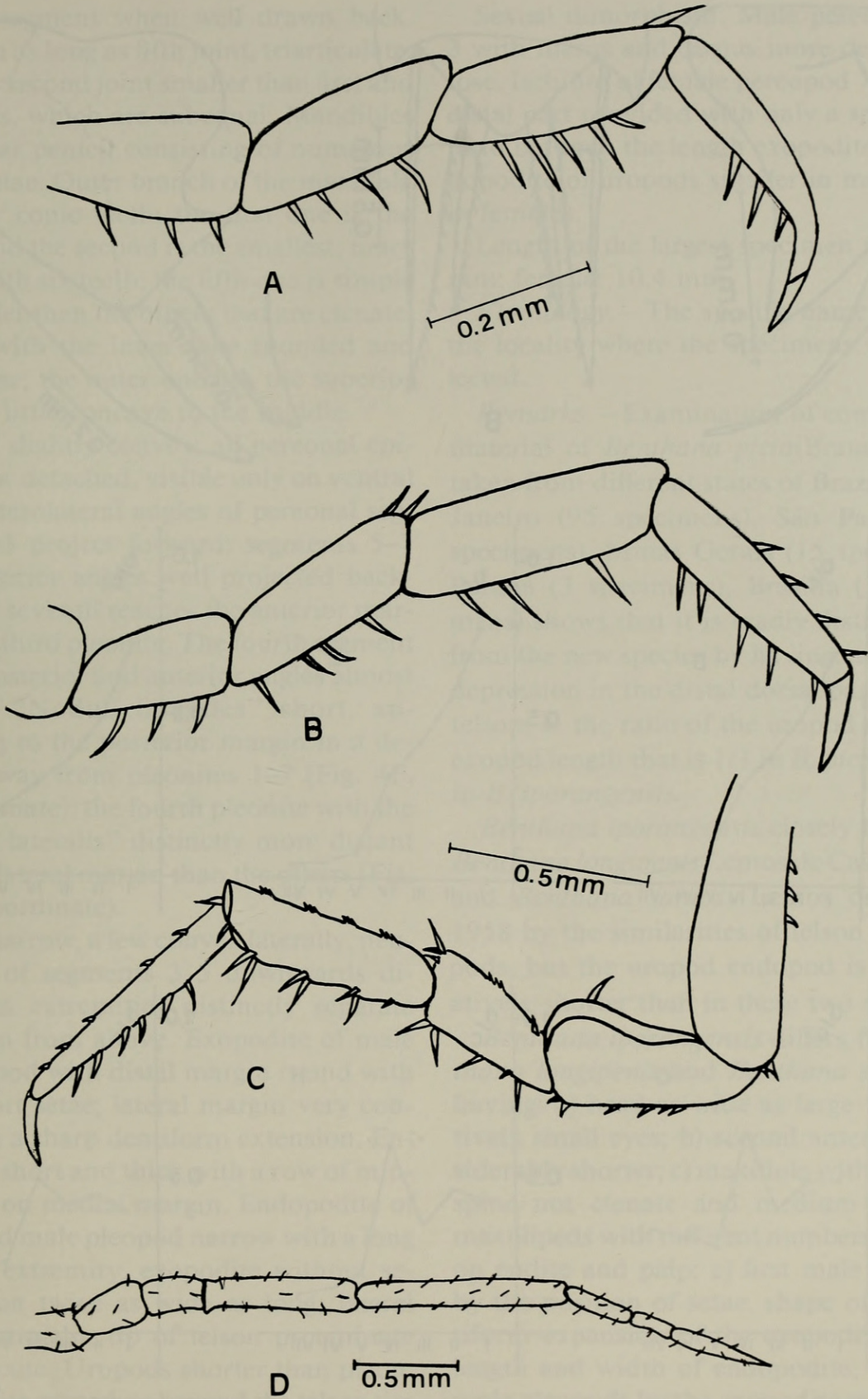


Fig. 3. *Benthana iporangensis* new species. Female. A: pereopod 1; B: pereopod 2; C: pereopod 7; Male. D: antenne. (Figs. to same scale: A and B.)

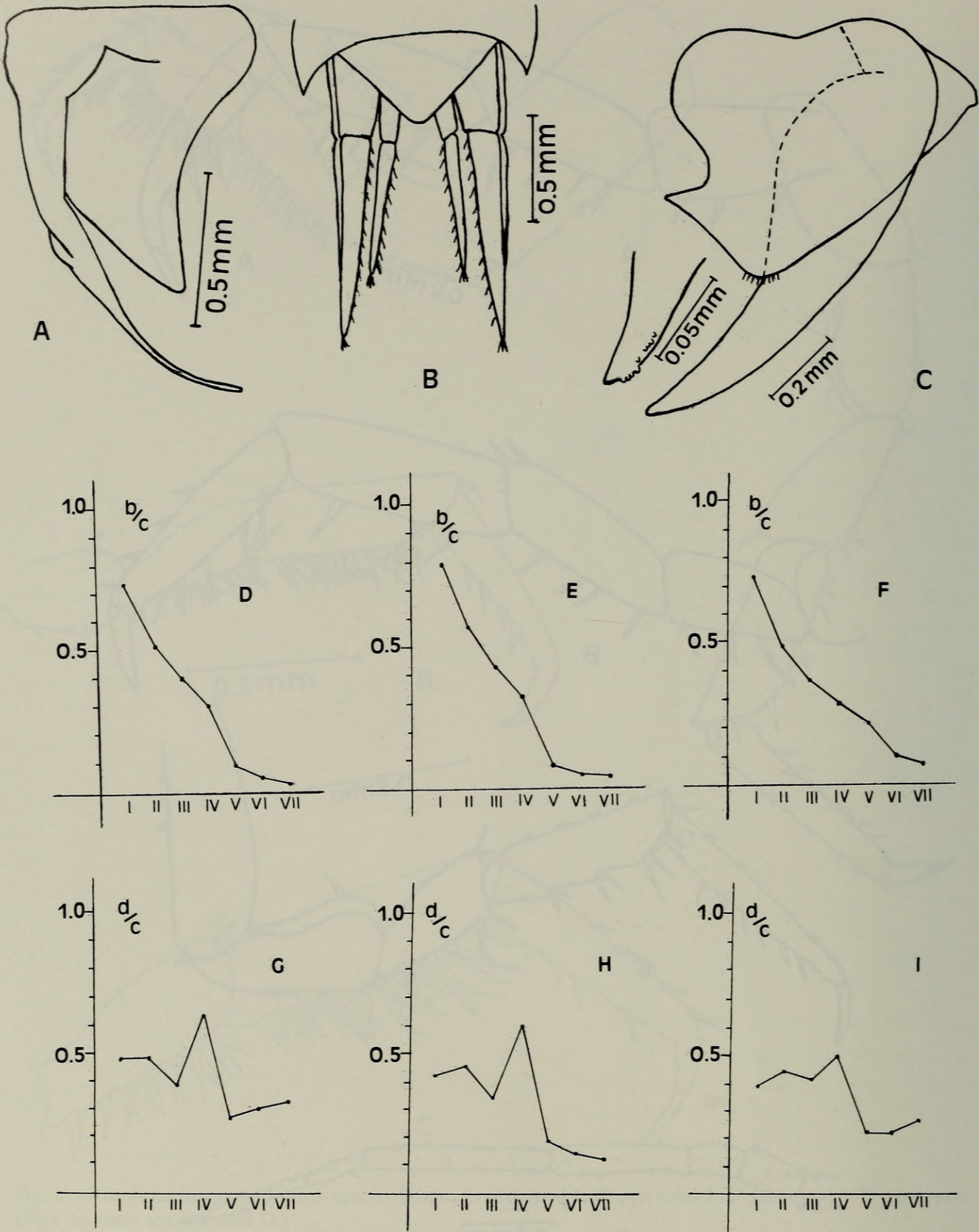


Fig. 4. *Benthana iporangensis* new species. Male. A: pleopod 2; B: telson and uropods; C: pleopod 1; Noduli laterales: (b/c coordinates). D: *B. longipenis* Lemos de Castro, 1958; E: *B. santosi* Lemos de Castro, 1958; F: *B. iporangensis* n. sp.—(d/c coordinates). G: *B. longipenis* Lemos de Castro, 1958; H: *B. santosi* Lemos de Castro, 1958; I: *B. iporangensis* n. sp.

thoracic segment when well drawn back. Flagellum as long as fifth joint, triarticulate, setose; its second joint smaller than first and third ones, which are subequal. Mandibles with molar penicil consisting of numerous fringed setae. Outer branch of the maxillula with four conic teeth; the first one is the longest and the second is the smallest; inner branch with six teeth; the fifth one is simple and smaller than the others that are ctenate. Maxilla with the inner lobe rounded and very setose; the outer one has the superior margin a little concave in the middle.

Pereon slightly convex; all pereonal epimera a few detached, visible only on ventral view. Anterolateral angles of pereonal segments 1–3 project forward; segments 5–7 with posterior angles well projected backward, the seventh reaches the anterior margin of the third pleonite. The fourth segment has the posterior and anterior angles almost straight. “Noduli laterales” short, approaching to the posterior margin in a decreasing way from pleonites 1–7 (Fig. 4F, b/c coordinate); the fourth pleonite with the “nodulus lateralis” distinctly more distant from the lateral margin than the others (Fig. 4I, d/c coordinate).

Pleon narrow, a few convex laterally, neuropurons of segments 3–5 downwards directed, its extremities distinctly separate when seen from above. Exopodite of male first pleopod with distal margin round with a few short setae; lateral margin very concave with a sharp dentiform extension. Endopodite short and thick with a row of minute teeth on medial margin. Endopodite of the second male pleopod narrow with a long capillary extremity; exopodite without setae. Telson twice as wide as long; lateral margins straight; tip of telson proeminate and subacute. Uropods shorter than pleon. Protodipodite exceeding beyond the telson tip, with a furrow on lateral margin. Exopodites and endopodites inserted in the same level, both furrowed laterally, on the outer and inner sides. Setae are present on medial margins.

Sexual dimorphism: Male pereopods 1–3 with merus and carpus more densely setose. Ischium of female pereopod 7 with the distal part provided with only a spine. The ratio between the length exopodite and endopodite of uropods smaller in males than in females.

Length of the largest specimen male: 8.6 mm; female: 10.4 mm.

Etymology.—The specific name refers to the locality where the specimens were collected.

Remarks.—Examination of comparative material of *Benthana picta* (Brandt, 1833) taken from different states of Brazil, Rio de Janeiro (95 specimens), São Paulo (110 specimens), Minas Gerais (15 specimens), Paraná (3 specimens), Brasília (25 specimens) shows that it is readily distinguished from the new species by having: a. a visible depression in the distal dorsal part of pleotelson; b. the ratio of the uropod endopod/exopod length that is 1/1 in *B. picta* and 2/3 in *B. iporangensis*.

Benthana iporangensis closely resembles *Benthana longipennis* Lemos de Castro, 1958 and *Benthana santosi* Lemos de Castro, 1958 by the similarities of telson and uropods, but the uropod endopod is comparatively shorter than in these two species.

Benthana iporangensis differs from *Benthana longipennis* and *Benthana santosi* by having: a) head as wide as large with relatively small eyes; b) second antennae considerably shorter; c) maxillula with the outer spine not ctenate and medium sized; d) maxillipeds with different numbers of spines on endite and palp; e) first male pleopods by the position of setae, shape of the dentiform expansion of the exopodite and by length and width of endopodite; f) second male pleopods by the exopodite without setae and by the different shape of endopodite; it also differs in the position of the “noduli laterales.”

The three related species have been recorded from the same southern part of Bra-

zil (São Paulo, Rio de Janeiro and Minas Gerais).

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Literature Cited

- Barnard, K. H. 1932. Contributions to the crustacean fauna of South Africa. 11. Terrestrial Isopoda. — Annals of the South African Museum, Cape Town 30:179–388.
- Brandt, J. F. 1833. Conspectus monographie Crustaceorum Oniscodorum Latreilii. — Bulletin de la Société Impériale des Naturalistes de Moscou 6:171–193.
- Budde-Lund, G. 1908. Isopoda von MadagasKar und Ostrafika mit Diagnosen verwandter Arten. Pp. 263–308, tafn. XII–XVII in A. Voeltzkow, Reise in Ostrafika in den Jahren 1903–1905. Wissenschaftliche Ergebnisse. Stuttgart, Band 2, Heft 4.
- Gruner, H. E. 1955. Die Gattung *Benthana* Budde-Lund, 1908 (Isopoda, Oniscoidea). — Zoologischer Jahrbücher., Jena, Band 83, Heft 6:441–452.
- Jackson, H. G. 1926. Woodlice from Spain and Portugal, with an account of *Benthana*, a sub-genus of Philoscia-Crustacea. — Proceedings of the Zoological Society of London 1:183–201.
- Lemos de Castro, A. 1958a. *Benthanoscia longicaudata*, a new genus and species of terrestrial isopod of the family Oniscidae (Isopoda Oniscoidea). — American Museum Novitates, New York 1884:1–7.
- . 1958b. Revisão do gênero *Benthana* Budde-Lund, 1908 (Isopoda Oniscoidea). — Archivos do Museu Nacional, Rio de Janeiro 46:85–118.
- . 1985. Duas espécies novas brasileiras de *Benthana* Budde-Lund, 1908 (Isopoda, Oniscoidea, Philosciidae). — Revista Brasileira de Biologia, Rio de Janeiro 45(3):241–247.
- Van Name, W. G. 1936. The American Land and Fresh-Water isopod Crustacea — Bulletin of the American Museum of Natural History 71:1–535.
- Verhoeff, K. W. 1917. Zur Kenntnis der Atmung und der Atmungsorgane der Isopoda Oniscoidea. Ueber Isopoden. 20 Aufsatz. — Biologischer Zentralblatt Erlangen & Leipzig 37:133–127.
- . 1941. Zur Kenntnis sudamerikanischer Oniscoideen. — Zoologischer Anzeiger 133:114–126.
- . 1951. Land-Isopoden. Pp. 69–76 in E. Titchschack, Beiträge zur Fauna Perus, 2.

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Proceedings of the Biological Society of Washington 106, 490–496.

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