

**Taxonomy of the Neotropical freshwater crab family Trichodactylidae, IV.  
The genera *Dilocarcinus* and *Poppiana*  
(Crustacea, Decapoda, Trichodactylidae)**

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Abstract

The genera *Dilocarcinus* and *Poppiana* (tribe Dilocarcinini) of the freshwater crab family Trichodactylidae are revised. These genera each include three species, i.e.: *Dilocarcinus septemdentatus* (HERBST 1783), *D. pagei* STIMPSON 1861, and *D. truncatus* RODRÍGUEZ 1992; *Poppiana dentata* (RANDALL 1840), *P. argentiniana* (RATHBUN 1905), and *P. bulbifer* (RODRÍGUEZ 1992). The taxonomic status of all species is discussed and a short diagnosis for each is provided. Lectotypes for *P. argentiniana* (♂ in MNHN-collection) and *P. dentata* (♂ in ANSP-collection) are designated. A complete list of the material examined, and maps showing the geographic distribution, are given.

**Key words:** Taxonomy, freshwater, crabs, Trichodactylidae, *Dilocarcinus*, *Poppiana*.

**Taxonomie der neotropischen Süßwasserkrabbenfamilie Trichodactylidae, IV. Die Gattungen *Dilocarcinus* und *Poppiana* (Crustacea, Decapoda, Trichodactylidae)**

**Zusammenfassung:** Die Gattungen *Dilocarcinus* und *Poppiana* (Tribus Dilocarcinini) der Süßwasserkrabbenfamilie Trichodactylidae werden revidiert. Diese Gattungen enthalten je 3 Arten: *Dilocarcinus septemdentatus* (HERBST 1783), *D. pagei* STIMPSON 1861 und *D. truncatus* RODRÍGUEZ 1992, *Poppiana dentata* (RANDALL 1840), *P. argentiniana* (RATHBUN 1905) und *P. bulbifer* (RODRÍGUEZ 1992). Der taxonomische Status aller Arten wird diskutiert und es werden Diagnosen für die einzelnen Arten gegeben. Für *P. argentiniana* und *P. dentata* werden Lectotypen designiert (*P. argentiniana*: ♂ MNHN; *P. dentata*: ♂ ANSP). Eine vollständige Materialliste und Verbreitungskarten sind enthalten.

Introduction

MAGALHÃES & TÜRKAY (1996a) started a taxonomic revision of the Neotropical trichodactylid crabs by presenting their proposal for systematic grouping of the infrafamilial taxa, which was based on complexes of characters, drawn mainly from the sternum, the endophragmal system, the abdomen segmentation and the morphologies of the first and second male pleopods. That introductory paper was fol-

lowed by others dealing with the taxonomy of some genera of the Valdiviini (MAGALHÃES & TÜRKAY 1996b) and the Dilocarcinini (MAGALHÃES & TÜRKAY 1996c). After a long break we now are following up these earlier revisionary publications with the present review of the genera *Dilocarcinus* and *Poppiana* (tribe Dilocarcinini). In order to enable definitive identification, keys to the species for each

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genus, and illustrations of the carapace and the male first pleopods, are provided. A brief diagnosis and remarks on intraspecific variability are given for each species.

The history of the genus *Dilocarcinus* is long and complicated. It has been used by earlier authors to accommodate a large number of unrelated species on the basis of external characters. We refer to our earlier publication for a full synonymy. In his most recent revisionary work RODRIGUEZ (1992) had still presented a very inclusive concept of *Dilocarcinus*, including 11 species. MAGALHÃES & TÜRKAY (1996a), based on the examination of a large amount of material from many different areas in South America and most of the type specimens, argued that existing differences in the male first pleopod and abdominal segmentation show that *Dilocarcinus* sensu RODRIGUEZ (1992) was a highly heterogeneous assemblage. They separated the species into 4 genera, reviving BOTT's (1969) *Poppiana* and *Goyazana*, and erecting *Bottiella* and *Moreirocarcinus* as new ones.

#### Materials and methods

The measurements given in the descriptions of the individual species, where available, refer to (in mm): Carapace breadth: Carapace length: Body height: Frontal breadth. Sometimes, the last two values are missing; in such cases, the measurements refer to: Carapace breadth: Carapace length. Measurements of the type and the largest specimen examined are usually given. The terminology used for gonopod description has been explained in MAGALHÃES & TÜRKAY (1996a); the number of the anterolateral carapace teeth includes neither the exorbital angle (when toothed), nor the accessory tooth sometimes present at base of the exorbital angle; plp 1 and plp 2 were used for referring to the first and second male pleopods, respectively.

Type specimens of all species were examined, except where noted otherwise.

Synonymic lists include mainly synonymies after 1969; see BOTT (1969) for synonymies until that year.

The repositories of the specimens studied for the present paper are the following institutions:

ANSP	Museum of the Academy of Natural Sciences of Philadelphia.
BMNH	The Natural History Museum, London (formerly British Museum (Natural History)).
FCEyN	Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Buenos Aires.
FMNH	Field Museum of Natural History, Chicago.
FZB	Museu de Ciências da Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre.
ICN-MHN	Instituto de Ciencias Naturales, Museo de Historia Natural, Universidad Nacional de Colombia, Bogotá.
IEPA	Instituto de Pesquisas Científicas e Tecnológicas do Estado do Amapá, Macapá.
INPA	Instituto Nacional de Pesquisas da Amazônia, Manaus.
IRSNB	Institut Royal des Sciences Naturelles de Belgique, Bruxelles.
IVIC	Instituto Venezolano de Investigaciones Científicas, Caracas.

MACN	Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires.
MB-UCV	Museo de Biología de la Universidad Central de Venezuela, Caracas.
MCSNG	Museo Civico di Storia Naturale "Giacomo Doria", Genova.
MCSNM	Museo Civico di Storia Naturale, Milano.
MCZ	Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.
MHNLS	Museo de Historia Natural, Fundación La Salle de Ciencias Naturales, Caracas.
MLP	Museo de La Plata, la Plata.
MNHN	Muséum National d'Histoire Naturelle, Paris.
MNHNB	Museo Nacional de Historia Natural de Bolivia, La Paz.
MNHNP	Museo Nacional de Historia Natural de Paraguay, Assunción.
MNRJ	Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro.
MPEG	Museu Paraense Emílio Goeldi, Belém.
MUSM	Museo de Historia Natural de la Universidad Nacional Mayor de San Marcos, Lima.
MZUSP	Museu de Zoologia da Universidade de São Paulo, São Paulo.
MZUT	Museo ed Instituto di Zoologia Sistemica dell'Università di Torino.
NHMB	Naturhistorisches Museum Basel, Basel.
NHMW	Naturhistorisches Museum Wien, Wien.
NRMSt	Naturhistoriska Riksmuseet, Stockholm.
RMNH	Nationaal Natuurhistorisch Museum (previously Rijksmuseum van Natuurlijke Historie), Leiden.
SMF	Senckenberg-Museum, Frankfurt am Main.
UFPB	Coleção de Crustacea da Universidade Federal da Paraíba, João Pessoa.
UFPE	Coleção Zoológica do Departamento de Oceanografia da Universidade Federal de Pernambuco, Recife.
UFRGS	Coleção Zoológica do Departamento de Zoologia da Universidade Federal do Rio Grande do Sul, Porto Alegre.
USNM	National Museum of Natural History, Smithsonian Institution, Washington, D.C.
USU	Coleção de Crustáceos, Universidade Santa Úrsula, Rio de Janeiro (currently incorporated to the MZUSP's collection).
ZMA	Zoologisch Museum, Instituut voor Taxonomische Zoölogie, Universiteit van Amsterdam.
ZMB	Zoologisches Museum der Humboldt-Universität zu Berlin.
ZMH	Zoologisches Institut und Zoologisches Museum, Universität Hamburg.
ZMUC	Universitetets Zoologisk Museum, Copenhagen.
ZSM	Zoologische Staatssammlung, München.

#### Other abbreviations:

HT	Holotype.
Dept.	Departamento.
Distr.	Distrito.
juv./juvs.	juvenile(s)
LT	Lectotype.
Prov.	Provincia.
PLT	Paralectotype[s].
PT	Paratype[s].
ST	Syntype[s].

## Systematic part

*Dilocarcinus* H. MILNE EDWARDS 1853

*Dilocarcinus*: H. MILNE EDWARDS (1853: 215). — Type-species: *Dilocarcinus spinifer* H. MILNE EDWARDS 1853 [by subsequent designation: PRETZMANN 1968].

*Dilocarcinus* — RODRÍGUEZ (1992: 108 [part.]); MAGALHÃES & TÜRKAY (1996: 78); MAGALHÃES (1998: 519; 2003: 202); CAMPOS (2005: 75); NG et al. (2008: 187).

## Key to the species

- 1 Anterior margin of third abdominal segment without transversal carina ..... 2  
 1\* Anterior margin of third abdominal segment with a clearly elevated transversal carina in both sexes ..... *D. pagei*  
 2 Plp I with distal portion slightly to strongly curved in lateral direction; apex a little compressed, subtriangular projection extending distally beyond or as far as the subdistal lobe; distal opening directed laterally ..... *D. septemdentatus*  
 2\* Plp I with distal portion straight, not curved in lateral direction; apex very short and straight, reaching distally to middle of subdistal lobe; distal opening directed apically ..... *D. truncatus*

*Dilocarcinus septemdentatus* (HERBST 1783)

(Figs. 1–7)

*Cancer septemdentatus*: HERBST (1783: 155). — Type locality: BOTT (1969) restricted the type locality to the lower Amazon (Brazil, state of Pará, surroundings of Belém). — Holotype: Not examined [probably not extant, as it could not be found at the ZMB neither by us nor by SAKAI (1999)].

*Dilocarcinus spinifer*: H. MILNE EDWARDS (1853: 215).

*Dilocarcinus castelnau* — H. MILNE EDWARDS (1853: 216 [part., 1 ♂, MNHN 3866]; 1854: 182 [part., 1 ♂, MNHN 3866]).

*Dilocarcinus (Dilocarcinus) septemdentatus* — BOTT (1969: 44, pl. 8, figs. 14a–b; pl. 20, fig. 45).

*Dilocarcinus septemdentatus* — RODRÍGUEZ (1981: 48; 1992: 128); MAGALHÃES & TÜRKAY (1996: 67, 69, 78, figs. 17, 23, 24); MAGALHÃES (1998: 519; 2003: 203, 206, figs. 108–109); BARROS & PIMENTEL (2001: 32); NG et al. (2008: 187).

*Dilocarcinus (Dilocarcinus) spinifer* — BOTT (1969: 45, pl. 8, figs. 15a–b; pl. 20, fig. 46).

*Dilocarcinus spinifer* — RODRÍGUEZ (1981: 48; 1992: 128, figs. 45A–I); HOLTHUIS (1993: 9); PEREIRA & BERRENSTEIN (2003: 58).

Material studied: Suriname: 1 ♂ (BMNH 1959.3.20.6), 1838, I. T. SANDERSEN; 1 ♂ (RMNH D 5332), 7. vi. 1944, D. C. GEIJES; 1 ♀ (RMNH D 5334), 4. xi. 1942, D. C. GEIJES; 2 ♂♂ (RMNH D 21743), 28. ix. 1965, D. C. GEIJES;

1 ♂ (INPA 353), Saramacca, Toni Holo, iv. 1959, D. C. GEIJES; 1 ♂ (RMNH D 20711), near Granmankanare, Saramacca river, 7. iv. 1964, M. BOESEMAN; 1 ♂ (RMNH D 3231), Suriname river, 21.–28. ix. 1938, D. C. GEIJES; 1 ♂ (RMNH D 21530), Suriname riviertussen, N.V. Kabel, 2. vi. 1964, M. BOESEMAN; 1 ♀ (RMNH D 12121), 13.7 km from the coast, near Wia Wia bank, 27. xi. 1948, Suriname Exped. 1940–49; 1 ♂ (RMNH D 27384), lower Nickerie river, near Standansival, 1. ii. 1971; 1 ♂ (RMNH D 5335), Paramaribo, 14. xii. 1939, D. C. GEIJES; 1 ♀ (RMNH D 11128), Paramaribo, viii. 1911; 1 ♂ (RMNH D- 3238), Suriname river, Paramaribo, 20. i. 1939, D. C. GEIJES; 2 ♂♂ (ZMB 12981), near Paramaribo, C. HELLER; 2 ♂♂, 1 ♀ (ZMH K-3676), idem; 2 ♂♂, 2 ♀♀ (RMNH D 12123), 8.4 km N.V. Moengatapoe, 6. x. 1948, Suriname Exped. 1948–49; 1 ♂ (RMNH D 12359), 14.6 km N.V. Moengatapoe, 11. x. 1948, Suriname Exped. 1948–49; 3 ♂♂, 1 ♀ (RMNH D 27200), creek trib. of Fallawatra river, upper Nickerie river, 2. ii. 1971, M. BOESEMAN; 2 ♂♂ (BMNH 1959.3.20.7-8), near Donderberg, about 91.5 km S. of Paramaribo, 4. xi. 1938, I. T. SANDERSON; 4 ♂♂, 2 ♀♀ (RMNH D 21247), creek trib. of Suriname river near Brokopondo, 13. iv. 1965, G. F. MEES; 1 ♂, 1 ♀ (RMNH D 21080), Suriname river, near Afobaka, 23. vi. 1964, M. BOESEMAN; 1 ♂ (RMNH D 20008), idem, 21. x. 1963, P. LEENTVAAR & M. BOESEMAN; 1 ♂, 1 ♀ (ZMA De 102294), Baling creek, ca. 5 km N. from Affobakka, 19. ix. 1966, H. NIJSSEN; 1 ♂ (RMNH D 21539), Sara creek near Brokopondo, 19. vi. 1969, M. BOESEMAN; 1 ♂ (ZMA De 102291), idem, 12. x. 1966, H. NIJSSEN; 2 ♂♂ (ZMA De 102292), creek near Brokopondo, 12. x. 1966, H. NIJSSEN; 2 ♂♂, 1 ♀ (RMNH D 20710), Suriname river, near Pokigron, 20. iii. 1964, M. BOESEMAN; 2 ♂♂ (RMNH D 3237), Makambikreek, 27. ix. 1938, D. C. GEIJES; 1 juv. (RMNH D 14965), Acote, 16. ii. 1952, D. C. GEIJES; 1 ♂ (ZMH K-3683), upper Suriname river, C. HELLER; 1 ♂ (SMF 4887), Sipaliwini, Awara creek, trib. of Suriname river, 1.5 km S. from Botopasi, 18. iii. 1967, H. NIJSSEN; 1 ♀ (MZUSP 1885), Anapaiké village, 24. xi. 1963, B. MALKIN; 1 ♂ (RMNH D 21790), Ligorio, 16. vi. 1965, G. F. MEES; 1 ♂ (ZMA De 102298), near Ligorio, 27. i. 1967, H. NIJSSEN.

French Guiana: 1 ♂, dry (MNHN 4391), 1 ♂, dry (MNHN 3867), STs of *Dilocarcinus spinifer*; Cayenne, Saint-Armand; 2 ♂♂ (BMNH 1890.10.7.106.7), Cayenne, JELSKI.

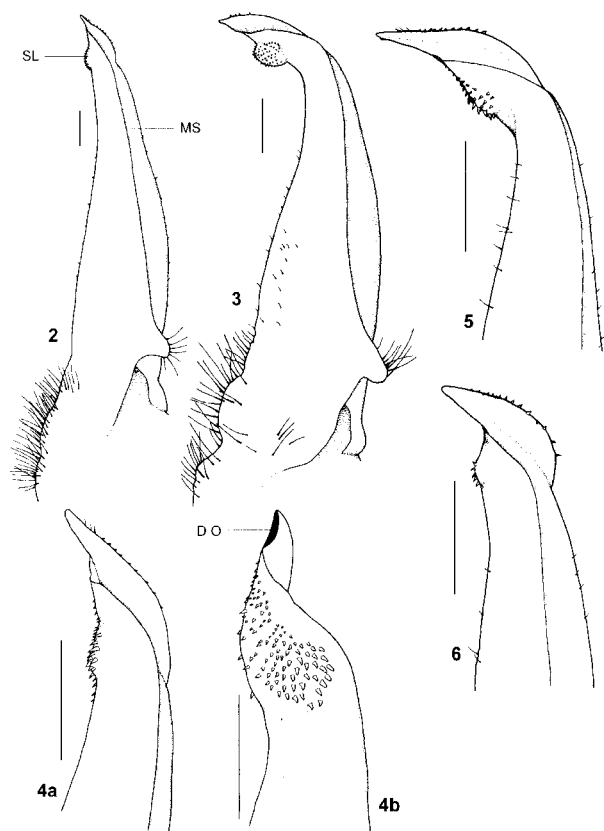
Brazil: Without precise locality: 2 ♂♂ (NHMW 6661); 1 ♂ (USNM 32009), Pará to Manaus, J. B. STEERE. — Estado do Amapá: 2 ♂♂, 2 ♀♀ (USU 514), Serra do Navio, Vila Nova, Cupixi, 15. ii. 1996, Proj. Diversitas Neotropica; 1 ♂ (INPA 584), idem; 1 ♂ (USU 510), Serra do Navio, rio Amapari, 6. v. 1994, collector unknown; 1 ♂ (IEPA 255), furo do Araguari, arquipélago do Bailique, município de Macapá, 9. iv. 2000, I. M. VIEIRA. — Estado do Pará: 1 ♂ (RMNH D 12187), Apisiké, 20. iv. 1952, D. C. GEIJES; 1 ♂, 1 ♀ (INPA 1508), Bragança, Tracuatena, 11. ix. 2004, S. ALVES; 1 ♂, 1 ♀ (INPA 1509), Bragança, Tracuatena, 10. ix. 2004, S. ALVES; 1 ♂ (MPEG 697), Fazenda EMA, município de Viseu, 15. vi. 2000, J. O. DIAS; 2 ♂♂ (MZUSP 11694), rio Peixe Boi, 18. iv. 1994, E. MAIOS; 2 ♂♂ (MZUSP 2317), rio Gurupi, 12 km W. Canindé, 16.–26. iv. 1963, B. MALKIN; 1 ♂ (MZUSP 1806), rio Gurupi, IV. 1963, B. MALKIN; 1 ♂ (MZUSP 1800), rio Gurupi, 3. vii. 1963, B. MALKIN; 2 ♂♂ (MZUSP 2323), rio Gurupi, Canindé, 3.–7. vii. 1963, B. MALKIN; 1 ♂ (SMF 2718), Quatipurú, near



Fig. 1. *Dilocarcinus septemdentatus*: ♂, SMF 4887. — Scale 1 cm. — Photo: Senckenberg-Museum S. TRÄNKNER.

Santarém, 6. iv. 1963, E. FITTKAU. — Estado do Amazonas: 1 ♀ (NHMW 6642), rio Negro, NATTERER; 1 ♂ (MZUSP 6362), igarapé Manduaçu, paraná do Iupia, NW de Fonte Boa, 8.–9. x. 1968, Expedição Permanente da Amazônia; 1 ♂, broken (INPA 258), stomach content of *Caiman crocodylus* from paraná do

Amanã, rio Japurá, 29. ix. 1979, W. MAGNUSSON; 2 ♂♂ (INPA 805), rio Solimões, Tefé, Reserva de Desenvolvimento Sustentável de Mamirauá, 26. iv. 1994, P. HENDERSON; 4 ♂♂, 1 ♀ (INPA 804), idem, 5. iv. 1994, P. HENDERSON; 2 ♂♂, 1 ♀ (INPA 802), idem, xii. 1993, collector unknown; 1 ♂, 1 ♀ (ZMH K-



Figs. 2–6. *Dilocarcinus septemdentatus*, right ♂ plp I. Fig. 2. SMF 4887, ventro-mesial aspect. Fig. 3. RMNH D 20711, ventro-mesial aspect. Fig. 4. MZUSP 1806, tip (a: ventro-mesial aspect. b: lateral aspect). Figs. 5, 6. INPA 1255, tip, ventro-mesial aspect. — Scales 1 mm. — SL: subdistal lobe. MS: marginal suture. DO: distal opening.

8712), rio Solimões, Manacapuru, viii. 1924, W. EHRHARDT; 1 ♀ (NHMW 6632), lago Janauari, near Manaus, v. 1971, U. IRMLER; 1 ♂ (INPA 796), Iranduba, rio Solimões, ponta do Catalão, lago do Pirapora, 3°11' S, 59°55' W, ix. 1999, L. RAPP PY-DANIEL et al.; 2 ♂♂, 1 ♀ (INPA 1255), idem, 24. v. 2000, L. RAPP PY-DANIEL et al.; 1 ♂ (SMF 29878), idem, 13. vii. 2000, L. RAPP PY-DANIEL et al.; 1 ♂ (INPA 1301), rio Amazonas, lago Coró Coró, 3°13' S, 58°41' W, 7. vii. 2000, A. VARELLA; 1 ♂, 1 ♀ (INPA 462), rio Amazonas, paraná do lago do Rei, ilha do Careiro, 7. vi. 1986, O. COLLART; 1 ♂, 1 ♀ (INPA 151), lago Janauacá, rio Solimões, 8. viii. 1985, G. M. SOARES; 1 ♂, 1 ♀ (MZUSP 4769), mouth of rio Purus, 1.–6. iv. 1967, H. REICHARDT; 1 ♀ (ZMB 15540), rio Amazonas, Paricatuba, vii. 1893, A. SCHULZ; 14 ♂♂, 7 ♀♀ (INPA 800), rio Juruá, lago do Rato/Caroçal, município de Carauari, 5°43' S, 67°42' W, 6. iv. 2000, J. ZUANON; 2 ♂♂, 2 ♀♀ (SMF 29879), idem; 1 ♀ (MNRJ MD-1227), rio Madeira, Humaitá, vii. 1975, U. CARAMASCHI et al.; 1 ♀ (UFPB 3102), Humaitá, 4.–5. i. 1979, L. M. SILVA et al.; 1 ♂, broken (MZUSP 9498), stomach content of *Caiman crocodylus* from lago de Humaitá, 13. i. 1979, M. PETRERE JR.; 1 ♀ (MZUSP 4770), Pauini [7°40' S, 66°58' W], 19. xii. 1974, P. VANZOLINI. — Estado do Maranhão: 11 ♂♂, 3 ♀♀ (MZUSP 1807), igarapé Gurupi-Una, afluente do rio Gurupi, 50 km E from Canindé (PA), 1.–15. v. 1963; 1 ♂ (UFPB 3105), idem; 1 ♂, 1 ♀ (INPA 513), idem; 2 ♀♀ (MZUSP 9514), igarapé Gu-



Fig. 7. Distribution map of *Dilocarcinus septemdentatus* and *D. truncatus*.

rupi-Una, 11.–25. ii. 1966, B. MALKIN. — Estado do Acre: 1 ♀ (MZUSP 2300), Iquiri [= rio Ituxi], Expedição Depto. Zoologia. — Estado de Goiás: 1 ♂, dry (MNHN 3866), Salinas, Ht Amazone, F. DE CASTELNAU & E. DEVILLE.

Peru: Depto. de Loreto: 1 ♂ (MZUSP 9248), rio Ampiyacu, 15.–25. iv. 1966, B. MALKIN; 1 ♀ (MZUSP 2399), idem; 1 ♀ (FMNH 3632), rio Ampiyacu, 28. iii.–9. iv. 1970, B. MALKIN.

Without precise locality: 2 ♂♂, dry (MNHN 3868), Voyage dans l'int. de l' Amer. du Sud, F. DE CASTELNAU & E. DEVILLE.

**Diagnosis:** Carapace smooth, strongly convex longitudinally. Frontal margin unarmed, slightly bilobed; anterolateral margins with 6 (usually) or 7 acute teeth behind the external orbital tooth. Abdominal somites III–VI fused; somite III smooth, without transversal carina along the anterior margin. Male plp I with distal portion slightly to strongly bent in lateral direction. Lateral border gently sinuous, with a few short setae medially. Lateroventral side with a rounded subdistal lobe. Marginal suture running along the mesial side of the stem, twisted towards the lateral side near the apex, after having passed the subdistal lobe. Subterminal spine fields continuous, denser on the lateroventral side, along the subdistal lobe, extending distally to the dorsal side. Subapical setae sometimes absent. Apex strongly twisted towards the lateral side, with a compressed, subtriangu-

lar projection extending distally beyond or to the level of the subdistal lobe; distal opening very narrow, directed laterally.

**Measurements:** 53.0:40.0 (largest specimen, ♂, MPEG 697).

**Distribution:** Coastal river basins of northern South America (Suriname, French Guyana and Brazil) and lowlands of the Amazon Basin in Brazil and Peru (Fig. 7).

**Remarks:** The ♂ plp 1 displays some variability in the degree of curvature and the twisting of the apex as well as in the bulging of the subdistal lobe of the lateroventral side. The variability of the chelipeds and carapace dentition was commented on by HOLTHUIS (1959).

Our study of abundant specimens from a more widespread range of distribution does not support the separation of *D. septemdentatus* and *D. spinifer* into 2 distinct species as advocated by BOTT (1969) and RODRIGUEZ (1992), based on the curvature of the apex of the plp 1 and in their distributional range. The distal part of the plp 1 shows various degrees of bending towards the lateral side, even among specimens from the same region. Some specimens from Suriname (e.g., RMNH D 20711, from Granmankanare, rio Saramacca) (Fig. 3) have a plp 1 with an almost 70° angle of curvature and a prominent subdistal lobe, in some others (e.g., RMNH D 21790, from Ligorio) the apex is moderately curved (approximately 40°), and in most of them it is almost straight with a discreet subdistal lobe (e.g., SMF 4887, from vicinity of Botopasi) (Fig. 2). The same situation is observed in the Amazon region, where specimens from rio Gurupi Basin (eastern Amazon) have an apex clearly bent (e.g., MZUSP 1800) or almost straight (e.g., MZUSP 1806, 1807) (Fig. 4a,b); similarly, Central Amazonian specimens can either have a curved or an almost straight apex, as shown in the two specimens of the lot INPA 1255 (Figs. 5, 6).

RATHBUN (1906b: 62) pointed out that H. MILNE EDWARDS (1853) described *D. castelnaui* based on 3 individuals, 2 of which (1 ♂ and 1 ♀) actually belonged to *D. castelnaui*; the third one, a ♂, was *T. (D.) spinifer*, now a synonym of the present species. BOTT (1969: 49) contested her, arguing that the differences between them were probably caused by variation due to age. Our re-examination of the type series of *Goyazana castelnaui* proved that, in fact, 1 ♂ specimen (MNHN 3866) belongs to *D. septemdentatus*, whereas the other 2 are the LT and PLT of *G. castelnaui* (H. MILNE EDWARDS 1853) (see MAGALHÃES & TÜRKAY 1996c).

### *Dilocarcinus pagei* STIMPSON 1861

(Figs. 8–11)

*Dilocarcinus pagei*: STIMPSON (1861: 373). — Type locality: Paraguay. — Holotype: ♀, dry (USNM 2463), Paraguay, leg. PAGE.

*Dilocarcinus septemdentatus* — MOREIRA (1901: 49 [part., Colonia Risso and Resistencia]).

*Dilocarcinus (Dilocarcinus) pagei pagei* — BOTT (1969: 46, pl. 9, figs. 16a–b; pl. 20, fig. 47); LOPRETTO (1976: 68, 84, figs. 26–29); MANNING & HOBBS (1977: 159).

*Dilocarcinus pagei pagei* — MAGALHÃES & TÜRKAY (1996a: 67, 69, 78).

*Dilocarcinus (Dilocarcinus) pagei cristatus*: BOTT (1969: 47, pl. 9, figs. 17a–b; pl. 20, fig. 48).

*Dilocarcinus (Dilocarcinus) pagei cristatus* — LOPRETTO (1976: 68, 86, figs. 14–17).

*Dilocarcinus (Dilocarcinus) pagei enriquei*: PRETZMANN (1978: 168, fig. 10);

*Dilocarcinus (Dilocarcinus) pagei enriquei* — PRETZMANN (1983a: 309, pl. 1, fig. 3; pl. 2, fig. 8; pl. 3, fig. 12; pl. 4, fig. 14; pl. 5, fig. 20; 1983b: 324).

*Dilocarcinus (Dilocarcinus) pagei enrici* — PRETZMANN (1983b: 318 [error]).

*Dilocarcinus pagei enriquei* — NG et al. (2008: 187).

*Dilocarcinus (Dilocarcinus) pagei* — LOPRETTO (1981: 23, pl. 1, figs. 1–8; pl. 2, figs. 9–34; pl. 3, figs. 35–42); ZWINK (1990: 103).

*Dilocarcinus pagei* — RODRIGUEZ (1981: 48; 1992: 125, figs. 1B, 4AA, 8I, 13J, 14D, 44D–G);

*Dilocarcinus pagei* — MORRONE & LOPRETTO (1994: 100, fig. 19; 1995: 4; 1996: 71);

*Dilocarcinus pagei* — MAGALHÃES (1998: 519; 2000: 59, 178, 288, 289; 2001: 70, 133, 138; 2002: 1100; 2003: 203, 204, figs. 106–107); BARROS & PIMENTEL (2001: 32); CAMPOS (2005: 75, figs. 17A–I); MAGALHÃES et al. (2005: 1934, fig. 1 (5)); NG et al. (2008: 187).

*Dilocarcinus page* [sic!] — GOULDING et al. (1988: 67 [erroneous spelling]).

**Material studied:** Brazil: Without precise locality: 1 ♂ (MCZ 4917), C. LINDEN; 5 ♂♂, 2 ♀♀ (USNM 20582), C. LINDEN; 2 specim., broken (SMF 4316), cacaual grande, H. SIOLI. — Estado do Amapá: 11 ♂♂ (MZUSP 12656), Estação Ecológica Maracá-Jipioca, 2. IX. 1995, M. FERNANDES; 5 ♂♂, 3 ♀♀ (IEPA 70), lago do Padeiro, Estação Ecológica de Maracá-Jipioca, 29. XI. 1995, J. CARDOSO et al.; 2 ♂♂, 1 ♀ (IEPA 40), braço do rio Macacoari, 25. VIII. 1990, E. OLIVEIRA; 2 ♀♀ (IEPA 124), lago dos Congos, 15. I. 1997, collector unknown; 1 ♂, 1 ♀ (IEPA 199), furo do Araguari, arquipélago do Bailique, município de Macapá, 9. IV. 2000, I. M. OLIVEIRA et al.; 2 ♀♀ (IEPA 83), Fazendinha, Macapá, 30. I. 1996, J. CUNHA; 1 ♀ (MNRJ MD-1176), rio Amazonas, Macapá, IV. 1981, G. NUNAN; 1 ♀ (MNRJ MD-1191), idem, 26. V. 1980; 1 ♂ (UFPE), idem, 6. IV. 1979; 1 ♀ (MNRJ MD-1177), rio Mirí, Mazagão, IV. 1981, G. NUNAN. — Estado do Amazonas: 3 ♂♂ (INPA 795), Silves, canal do Purema, 2°48'44" S, 58°8'24" W, 10. X. 1998, M. N. F. DA SILVA; 2 ♀♀ (INPA 293), lago Amanã, rio Japurá, 27. VIII. 1979, R. BEST; 1 ♂ (ICN-MHN 2088), rio Japurá, Reserva de Mamirauá, VIII. 1988, A. FACHIN; 3 ♂♂, 1 ♀ (USNM 20581), 1 ♀ (MCZ 4926), Vila Bela, rio Amazonas at Parintins and environs. THAYER Exp.: 9 ♂♂, 1 ♀ (MCZ 4919), idem, 27. VIII. 1865, L. AGASSIZ; 5 ♂♂ (MNRJ MD-1216), Parintins, 14. X. 1984, M. MATOS & M. FERNANDA; 5 ♂♂, 3 ♀♀ (MZUSP 1791), rio Solimões, ilha do Baixio, em frente a Iranduba, X. 1963, J. DELOME; 1 ♂ (IRSNB), rio Solimões, Iranduba, 22. III. 1964, G. MARLIER; 1 ♂ (SMF 29872), município de Iranduba, ponta do Catalão, lago do Pirapora, 3°11' S, 59°55' W, 11. V. 2000, L. RAPP PY-DANIEL et al.; 1 ♂ (INPA 296), rio Negro, ponta do Macaco, 2. X. 1982; 1 ♂ (USNM 168640), rio Solimões, near confluence with rio Negro; 1 ♀, PT of *D. pagei cristatus* BOTT

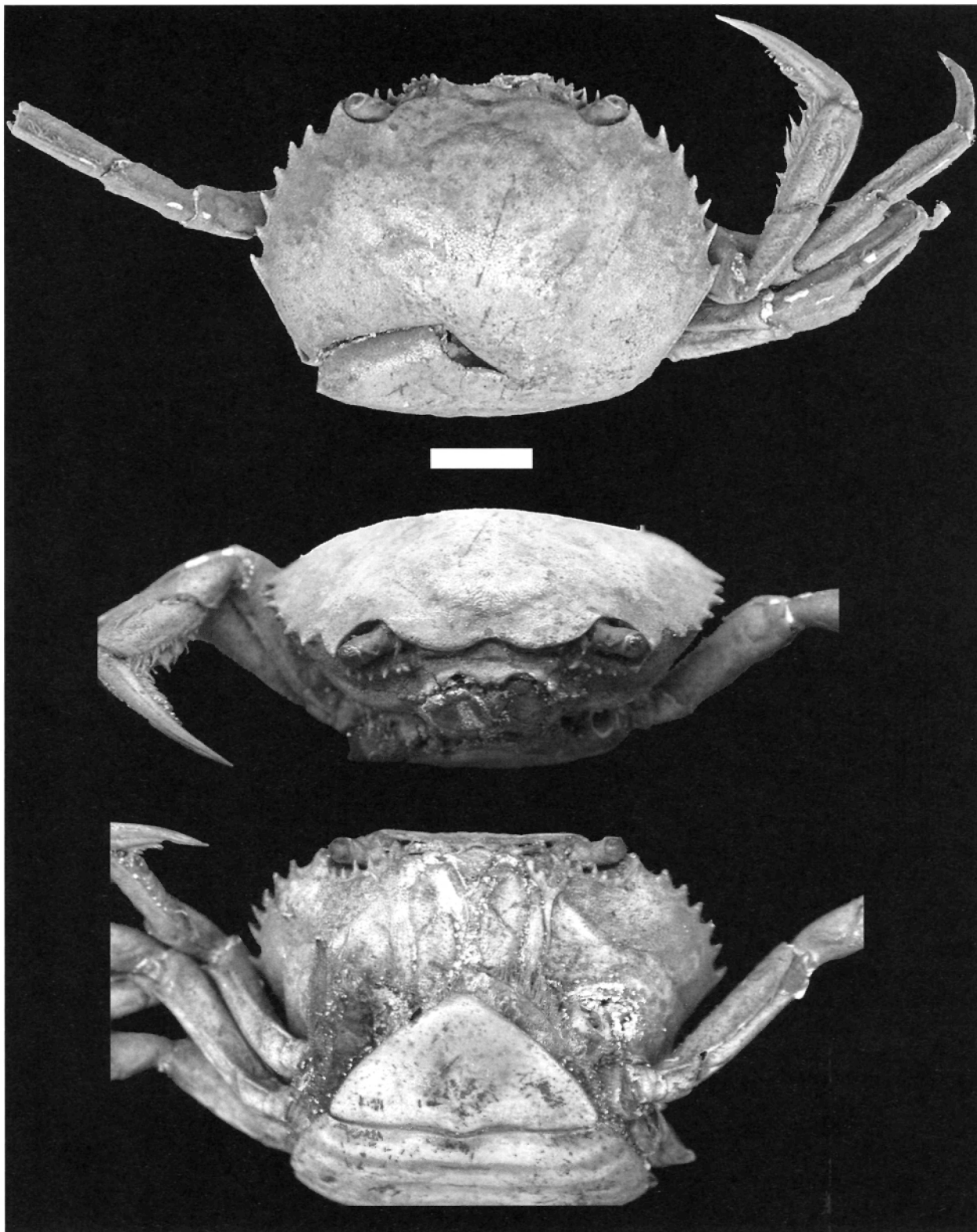


Fig. 8a. *Dilocarcinus pagei*: ♀ HT, dry, USNM 2463. — Scale 1 cm. — Photos: R. GULLEDGE.

(SMF 4313), mouth of rio Negro, 9. ix. 1955, A. BUTTNER; 4 ♂♂, 7 ♀♀ (INPA 292), rio Solimões, costa do Catalão, near Manaus, vi. 1984, A. G. SANTOS; 1 ♂ (40.9:31.0), HT of *D. pagei cristatus* BOTT (SMF 2717), rio Solimões, Careiro, E.-J.

FITTKAU; 1 ♀ (SMF 22251), rio Amazonas bei Manaus, 18. iii. 1993, collector unknown; 1 ♀ (MZUSP 1790), rio Amazonas, ilha do Careiro, Cambixe, 25. x. 1963, J. DELOME; 1 ♂ (MZUSP 3593) rio Amazonas, ilha do Careiro, 1961, E. FITTKAU; 1 ♂,



Fig. 8b. *Dilocarcinus pagei*: ♂ HT of *Dilocarcinus (Dilocarcinus) pagei cristatus* BOTT 1969, SMF 2717. — Scale 1 cm. — Photos: Senckenberg-Museum, S. TRÄNKNER.

1 ♀ (MZUSP 4764), rio Amazonas, ilha do Careiro, lago do Rei, 12. iv. 1967, H. REICHARDT; 1 ♂, 1 ♀ (IRSNB), rio Amazonas, paraná do Careiro, 7. iv. 1964, G. MARLIER; 1 ♀ (BMNH 1977:470), rio Solimões, 40 mi. from Manaus, xii. 1976, R.V. "Alpha Helix", Dr. WILSON; 3 ♂♂, 3 ♀♀ (INPA 456), rio Solimões, ilha da Marchantaria, v. 1986, J. ADIS; 4 ♂♂ (SMF 22252), rio Solimões, ilha da Marchantaria, 17. iii. 1993, P. PETRY; 20 ♂♂, 19 ♀♀ (INPA 801), Tefé, Reserva de Desenvolvimento Sustentável de Mamirauá, zona de Jaraná, date and leg. unknow; 8 ♂♂, 4 ♀♀ (INPA 803), Tefé, Reserva de Desenvolvimento Sustentável de Mamirauá, lago Volta, 23. iii. 1995, P. HENDERSON; 3 ♂♂ (MZUSP 4765), lago de Tefé, 12. vii.

1976, P. VANZOLINI; 2 ♂♂, 4 ♀♀ (INPA 139), lago Janauacá, rio Solimões, 25. viii. 1978, J. DONATH; 1 ♂ (USNM 231206), idem, 4. xii. 1978, P. BAYLEY; 11 ♂♂ (IVIC 738), sistema Janauacá, al Sur de Manaus, iv.–vii. 1978, collector unknown; 2 juvs. (MZUSP 2735), lago Capitari, rio Madeira, 19. iii. 1967, H. BRITSKI; 1 ♂ (MZUSP 6317), lago Jupia, em frente a Codajás, 24. x. 1968, Expedição Permanente da Amazônia; 1 ♀ (ZMB 8937), rio Amazonas, Paricatuba, A. SCHULZ; 4 ♂♂, 1 ♀ (MZUSP 6351), lago Jacaré, rio Solimões, 29. iii. 1967, R. REICHARDT; 2 ♂♂ (INPA 1306), rio Purus, paraná Itapuru, 4°17'1" S, 61°54'9" W, 11. vi. 2001, L. RAPP PY-DANIEL; 1 ♂, 1 ♀ (INPA 1302), rio Purus, lago Campina, município de Beruri, 4°53'7" S,

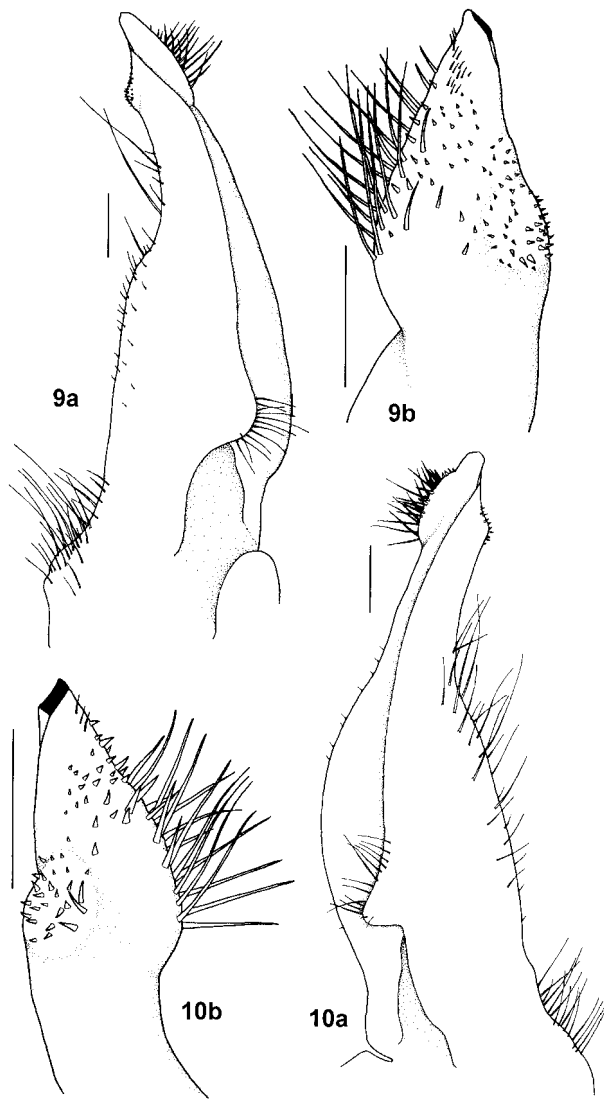




Fig. 8c. *Dilocarcinus pagei*: ♂ HT of *Dilocarcinus (Dilocarcinus) pagei enriquei* PRETZMANN 1978, NHMW 4173. — Scale 1 cm. — Photos: Senckenberg-Museum, S. TRÄNKNER.

62°54'51" W, 5. vi. 2001, L. RAPP PY-DANIEL; 9 ♂♂, 9 ♀♀ (INPA 1454), rio Madeira, lago Xadá, paran proximo Comunidade So Carlos, 19. iv. 2005, Equipe PROBIO/Ictio; 1 ♀, PT of *D. (D.) pagei cristatus* BOTT (SMF 4314), igarap das 3 casas, (natural channel linking right bank of rio Madeira with

small lake, between Humait and Borba, ca. 7° S, 62°30' W, according RODRGUEZ 1992: 158), H. SIOLI; 3 ♂♂, 1 ♀ (MZUSP 4761), Humait, 11. vii. 1975, F. R. GALVANI; 3 ♀♀ (MNRJ MD-1189), Humait, 9. vi. 1975, A. MONTAVAN; 5 ♂♂ (MNRJ MD-1200), Humait, 9. vii. 1975, F. R. GALVANI et al.; 1 ♂



Figs. 9–10. *Dilocarcinus pagei*, ♂ plp I. Fig. 9. INPA 292, right limb (a: total, ventro-mesial aspect; b: tip, dorsal aspect). Fig. 10. HT of *Dilocarcinus (D.) pagei enriquei* PRETZMANN, NHMW 4173, left limb (a: total, ventro-mesial aspect; b: tip, dorsal aspect). — Scales 1 mm.

(MNRJ MD-1210), igarapé Joari, Humaitá, 22. vi. 1983, J. ARANHA; 1 ♂ (RMNH D 31568), igarapé Xicanga, ca. 5 km W Humaitá, 24. viii. 1976, H. R. AXELROD & J. GERY; 3 ♂♂ (MNRJ MD-1226), rio Madeira, Humaitá, vii. 1975, U. CARAMASCHI et al.; 1 ♀ (MZUSP 6358), rio Madeira, Restauração [7°3' S, 62°52' W], 13. xi. 1975, P. VANZOLINI. — Estado do Pará: 1 ♀ (BMNH 1845-56); 2 ♀ (MPEG 396), ilha do Marajó, igarapé da cachoeira do Arari, bacia do Alecrim, ii. 1966, MOREIRA; 2 ♂♂, 2 ♀♀ (MPEG 388), ilha do Marajó, rio Goiapi, cachoeira do Arari, 8. iv. 1990, I. ASSUNÇÃO; 1 ♂ (MPEG 595), ilha do Marajó, lago do Arari, Santa Cruz do Arari, v. 1998, D. EMBERT & L. DIRKSEN; 7 ♂♂, 2 ♀♀ (MZUSP 2412), ilha do Marajó, cachoeira do Arari, vii. 1966, N. MENEZES & H. BRITSKI; 7 ♂♂ (MZUSP 2413), idem; 6 ♂♂, 3 ♀♀ (MZUSP 2414), idem; 5 ♂♂, 2 ♀♀ (MZUSP 2288), ilha de Marajó, rio Arari, vii. 1965, N. MENEZES; 1 ♂, 1 ♀ (SMF 29873), idem; 1 ♀ (USNM 20319), rio Arari, M. JOBERT; 1 ♂, 1 ♀ (MNHN BP

260), idem; 6 ♂♂ (MPEG 579), ilha do Marajó, ilha Mexicana, 1. ix. 1998, D. C. OREN; 2 ♂♂ (MCZ 4924), ilha de Marajó, furo Tajapurú, at Tajapurú, 20. viii. 1865, L. AGASSIZ; 1 ♂ (MZUSP 1799), ilha do Marajó, vi. 1958, P. VANZOLINI; 1 ♀ (INPA 294), rio Guarapi, cachoeira do Arari, 14. i. 1982, M. GOULDING; 1 ♂, 1 ♀ (MPEG 187), rio Maniva, ilha do Pará, município de Afuá, 18.–20. vi. 1990, O. M. COSTA et al.; 2 ♀♀ (MCZ 4921), Belém and environs, 10. viii. 1865, L. AGASSIZ; 2 ♂♂ (MCZ 4920), rio Amazonas delta at Gurupá, 22. viii. 1865, L. AGASSIZ et al.; 1 ♂ (USNM 20580), idem, 28. viii. 1865, L. AGASSIZ et al.; 1 ♂, 1 ♀ (MPEG 667), Comunidade N. Sra. da Conceição, município de Oriximiná, 22. v. 1999, M. E. DEZINCOURT; 3 ♂♂ (MPEG 677), idem, 17. x. 1999, A. MAIA & M. ERIK; 1 ♀ (MZUSP 4767), lago Urariá, Oriximiná, 7. ii. 1967, H. BRITSKI; 1 ♀ (MZUSP 4773), idem, 14. i. 1968, P. VANZOLINI; 1 ♂ (MCZ 4925), rio Amazonas at Óbidos, 1865, THEYER Exp.; 1 ♀ (MZUSP 6343), lago Grande, near Alenquer, 21. ix. 1969, Expedição Permanente da Amazônia; 1 ♀ (MCZ 4923), rio Parietuba at Monte Alegre, 25. viii. 1865, L. AGASSIZ et al.; 1 ♂ (MZUSP 4772), paraná Jacaré, Faro, 13. xii. 1967, H. BRITSKI; 1 ♂, 1 ♀ (MPEG 672), Santarém, Comunidade do Carariacá, 28. iii. 1999, Equipe do Lab. de Pesquisas em Herpetologia da Amazônia; 1 ♀ (MPEG 681), Santarém, Comunidade de São Jorge de Nricurituba, 29. xii. 1999, M. R. DOS REIS; 5 ♂♂ (MPEG 680), Santarém, Comunidade Santa Maria do Tapará, 21. xi. 1999, Equipe do Lab. de Pesquisas em Herpetologia da Amazônia; 1 ♀ and juvs. (BMNH 1898.5.28.4), Santarém; 1 ♂, dry (BMNH), idem; 1 ♂, dry (BMNH 1853-60), idem; 1 ♀ (MCZ 4918), idem, C. LINDEN; 1 ♂, 1 ♀ (MCZ 4922), idem, 1865, D. BOURGET; 4 ♂♂, 4 ♀♀ (MZUSP 6308), idem; xi. 1970, Expedição Permanente da Amazônia; 4 ♂♂, 1 ♀ (MZUSP 6311), idem, xi. 1979, Expedição Permanente da Amazônia; 2 ♀♀ (MZUSP 1654), idem, 1921, E. GARBE; 1 ♂ (MZUSP 6300), idem, xi. 1969, Expedição Permanente da Amazônia; 4 ♂♂, 1 juv. (NHMW 6641), idem, 1.–4. vi. 1913, J. D. HASEMAN; 1 ♂, exuvia (SMF 4315), idem, H. SIOLI; 1 ♂ (MPEG 663), idem, iv. 1999, collector unknown; 2 ♀♀ (MZUSP 4766), Taperinha [2°31' S, 54°17' W], 1.–11. ii. 1968; 2 ♂♂, 1 ♀ (INPA 320), rio Curuá-Una. — Estado de Rondônia: 2 ♂♂, 2 ♀♀ (INPA 291), mouth of rio Guaporé, 16. vi. 1984, J. C. MALTA; 2 ♂♂, 1 ♀ (UFPB 3092), idem, 20. ix. 1985, J. C. MALTA; 4 ♂♂ (ZMH K-32108), Vila Bela, rio Guaporé, 26. vii. 1970, J. VÖLKER; 1 ♀, dry (NHMW 6686), S. Luis, Guaporé, 1829; 1 ♂, 1 ♀ (NHMW 6668), rio Guaporé; 1 ♀ (NHMW 6683), Fluss Anaporé [probably rio Guaporé], NATIERER; 1 ♀ and juvs. (NHMW 1398), idem; 2 ♂♂ (INPA 1305), rio Madeira, cachoeira abaixo de Guajará-Mirim, 10°46'47" S, 65°20'37" W, 4. v. 1998, Eq. Galça. — Estado do Acre: 1 ♂ (INPA 134), rio Tarauacá, Tarauacá, 1. viii. 1984, M. GOULDING. — Estado do Mato Grosso: 1 juv. (MNRJ MD-1241), córrego Boca Rica, Quatro Marcos, 29. xi. 1984, W. ZWINK; 5 juvs. (MNRJ MD-1018), córrego do Ribeirão, Barra dos Bugres, 4. xi. 1984, W. ZWINK; 3 ♀♀ (MZUSP 6335), Mato Grosso, 14. xii. 1976; 2 ♂♂, 1 ♀ (SMF 9422), Vila Bela [= município de Mato Grosso], rio Guaporé, viii. 1980, J. VÖLKER; 1 ♂ (INPA 137), rio Cuiabá, Cuiabá, 6. v. 1984, U. BARBOSA; 1 ♂ (IVIC 739), rio Cuiabá, município de Várzea Grande, 15. vii. 1982, M. CATARINO; 1 ♂ (USNM 181647), Pantanal, 15. vii. 1979, G. SCHALLER; 1 ♂ (FMNH 3655), rio Paraguay, município de Conceição [15°0' S, 58°1' W], 10. viii. 1926, K. P. SCHMIDT; 1 ♂, 1 ♀ and juvs. (MNRJ MD-1019), rio Aguapeí, afluente rio Jaurú, Porto Espiridião, 24. xi. 1984, W. ZWINK; 10 juvs. (MNRJ MD-1022), rio Jaurú, Porto Espiridião, 25. xi. 1984, W. ZWINK;

- 1 ♀ and juvs. (MNRJ MD-1024), idem; 1 ♀ (MNRJ MD-1028), idem; 1 ♀ and juvs. (MNRJ MD-1029), idem; 2 ♀♀ (MNRJ MD-1030), idem, 26. xi. 1984, W. ZWINK & L. ALVARENGA; 1 ♂, 1 ♀ (MNRJ MD-1032), córrego do Caramujo, BR-174, km 33, Porto Espiridião, 1. xii. 1984, W. ZWINK; 1 ♀ (MZUSP 9516), Porto Espiridião, 25. xii. 1976, P. VANZOLINI; 1 ♂ (SMF 29874), rio Jaurú, 40 km W Cáceres, 6. ix. 1980, J. VÖLKER; 8 ♂♂, 1 ♀ (MNRJ MD-1021), rio Cabaçal, Cáceres, 29. xi. 1984, W. ZWINK; 1 ♀ (MNRJ MD-1031), córrego Sangradourozinho, Cáceres, 2. xii. 1984, W. ZWINK; 2 ♂♂ (SMF 9417), 20 km W Cáceres, 4. ix. 1980, J. VÖLKER; 2 ♀♀ (MNRJ MD-1247), Cáceres, 20. x. 1908, A. M. RIBEIRO, Comissão RONDON; 2 ♀♀ (MNRJ MD-1248), Cáceres, 1. 1914, A. BLAKE; 1 ♀ (MZUSP 1652), Cáceres; 3 ♂♂ (ZMH K-32107), rio Paraguay, Cáceres, 4. ix. 1980, J. VÖLKER; 5 specim., dry and broken (MNRJ MD-1109), rod. Transpantaneira, Poconé, 22. vii. 1979; 1 ♀ (MNRJ MD-1143), idem, 12. v. 1983, E. CARAMASCHI et al.; 3 ♀♀ (MZUSP 4771), idem, 13. xii. 1973, J. VAZ; 1 ♀ (MZUSP 7049), idem, 16.–22. iv. 1981, Eq. Ictiologia DCB/UFSCar; 1 ♂ (MZUSP 6354), idem, iv. 1972, K. SOLIMON; 2 ♂♂, 1 ♀ (MZUSP 9502), idem, 6. vii. 1985, V. A. ARAÚJO; 7 ♂♂, 1 ♀ (INPA 366), idem, 7. vi.–8. viii. 1985, V. A. ARAÚJO; 1 ♂, 1 ♀ (UNAM EM-9911), idem; 1 ♂, 2 ♀♀ (SMF 9421), Poconé, 11. ix. 1980, J. VÖLKER; 1 ♂ (MZUSP 9687), rio Aricá, afluente do rio Cuiabá, 6.–13. xi. 1982, Eq. Ictiologia DCB/UFSCar; 1 ♂, 1 ♀ (MZUSP 7050), idem; 1 ♀, dry (BMNH 1955.2.21.24), Carandazinho, 1893, BORELLI; 2 ♂♂, 4 ♀♀ (MZUT Cr 291), idem; 1 ♂ (MCSNM 1007), idem; 1 ♂, 1 ♀ (UFRGS 449), rio Bento Gomes, afluente do rio Paraguay, 21. ii. 1980, L. FLAMARION. — Estado do Mato Grosso do Sul: 1 ♂ (MZUSP 8012), rio Taquari, Paiaguás, 19. vii. 1986, R. ANTONELLI FILHO; 1 ♂ (INPA 1307), Aquidauana, braço do rio Taboco, Fazenda Taboco, 20°3.3' S, 55°38.8' W, 31. viii. 1998, C. MAGALHÃES; 3 ♂♂ (INPA 141), Corumbá, Nhecolândia, vii. 1984; 1 ♂, 1 ♀ (IVIC 740), Corumbá, Nhecolândia, Fazenda Nhumirim, 24. vi. 1984, R. F. LOURIVAL; 1 ♂, 2 ♀♀ (INPA 1309), rio Negro, onde cruza com a rodovia Nhecolândia-BR 262, município de Corumbá, 19°17.1' S, 57°3.3' W, 8. ix. 1998, C. MAGALHÃES et al.; 3 ♂♂, 1 ♀ (IVIC 741), São Luiz de Cáceres, 27. vi. 1947, J. JANSEN; 3 ♂♂, 3 ♀♀ (MZUSP 9889), rio Miranda, base de pesquisas do Pantanal da UFMS, 4. viii. 1989, A. C. MARINI; 4 ♂♂, 3 ♀♀ (INPA 1308), rio Vermelho, afluente do rio Miranda, próximo ao Paço do Lontra; município de Corumbá, 6. ix. 1998, C. MAGALHÃES et al.; 1 ♀ (MZUSP 4774), rio Miranda, Miranda, ix. 1979, J. GARAVELLO; 1 ♂ (UFPB 3091), Miranda, 20. vii. 1982, A. LANGGUTH; 1 juv. (MNRJ MD-1101), rio Miranda, near Miranda, 22. i. 1955, L. TRAVASSOS et al. — Estado do São Paulo: 3 ♂♂ (MZUSP 13915), Rio Grande Basin, Colômbia, 20°10'8.7" S, 48°36'83.5" W, 24. vii. 2000, W. AVELAR; 6 ♂♂, 2 ♀♀ (MZUSP 13100), Rio Grande Basin, São José do Rio Preto, açude municipal, 20°48' S, 49°22' W, 12. x. 1999, M. A. A. PINHEIRO & G. Y. HOTTORI; 2 ♂♂, 1 ♀ (INPA 774), idem; 1 ♂ (MZUSP 12128), São José do Rio Preto, represa Rio Preto, 1. viii. 1994, F. G. TADDEI; 2 ♂♂ (INPA 872), Rio Mogi Guaçu Basin, Viradouro, Fazenda Três Barras, 20°54'48.9" S, 48°10'29.6" W, 11. viii. 2000, W. AVELAR; 2 ♀♀ (MZUSP 13099), Barrinha, 21°11' S, 48°9' W, rio Mogi-Guaçu, 12. x. 1999, M. A. A. PINHEIRO & G. Y. HATTORI; 1 ♀ (INPA 773), idem. — Estado do Paraná: 1 ♂, 1 ♀ (INPA 894), rio Paranapanema Basin, Londrina, Fazenda Doralice, em lagos, 22. vi. 2002, E. M. AMADO.
- Colômbia: Dept. Amazonas: 1 ♀ (ICN-MHN 1760), Puerto Nariño [3°46' S, 70°20' W], Lago Tarapoto, 3. xii. 1998, I. STEPHEN; 2 ♀♀ (ICN-MHN 2072), idem, 22. iv. 2001, J. D. LYNCH; 1 ♀ (ICN-MHN 959), Parque Nacional Natural Amacayacu, isla Mocagua, 4. iv. 1989, H. CASTILLO.
- Peru: Dept. de Loreto, Provincia de Ucayali: 1 ♀ (MUSM CM-63), Rio Ucayali, quebrada Aguas Calientes, Contamana, 3. vi. 1996, H. ORTEGA; 4 ♀♀ (INPA 799), rio Ucayali, Contamana, 31. v. 1996, H. ORTEGA. — Dept. Ucayali, Provincia Coronel Portillo: 1 ♂ (40.6:31.2), HT of *Dilocarcinus pagei enriquei* PRETZMANN (NHMW 4173), rio Ucayali, Pucallpa, vi. 1970, E. M. DEL SOLAR; 1 ♀ (FMNH 3628), rio Calleria, 15 km from rio Ucayali, near Pucallpa, 20.–27. ix. 1961, B. MALKIN; 2 ♀♀ (INPA 797), Yarinacocha, 15. xi. 1996, H. ORTEGA. — Dept. de Madre de Dios, Provincia de Tambopata: 1 ♂ (BMNH 1985.329), rain forest of the Tambopata Reserve, Puerto Maldonado, W. SHUTHERLAND; 1 ♀ (MUSM CM-60), Zona Reservada Tambopata-Candamo, 15. v. 1996, collector unknown; 1 ♀ (INPA 1303), Zona Reservada Tambopata-Candamo, 15. vi. 1996, F. CHANG; 2 ♂♂ (INPA 798), Tambopata, lago Valencia, 27. vii. 1995, F. CHANG.
- Bolivia: Dept. de Beni: 1 ♂ (RMNH D D-11126), rio Yacuma, near Espiritu, 13.–28. iv. 1954, W. FORSTER & O. SCHINDLER; 2 ♂♂, PTs of *D. (D.) pagei cristatus* BOTT (ZSM 1089-2), rio Yacuma, Espiritu [14°11' S, 66°37' W], iv. 1954, W. FORSTER & O. SCHINDLER; 1 ♂, PT of *D. (D.) pagei cristatus* BOTT (ZSM 1089-3), rio Yacuma, viii. 1950, W. FORSTER; 4 ♂♂ (MNHNB), Provincia Yacuma, arroyo Capiguara, afluente do rio Yacuma, Espiritu, 25. iv. 1987, J. SARMIENTO & W. HANAGARTH; 1 ♂ (SMF 12252), Ballivan, i. 1983, W. HANAGARTH; 4 ♂♂, 3 ♀♀ (MNHNB), San Borja, Provincia Ballivan, rio Yacuma drainage, 12. i. 1986, J. SARMIENTO & W. HANAGARTH; 1 ♀ and juvs. (MNHNB), Estancia El Porvenir, Prov. Ballivan, 14. xi. 1985, J. SARMIENTO; 1 ♀ (MNHNB B-19119), Trinidad, v. 1984, G. LOUBENS; 1 ♀ (MNHNB B-19120), idem; 4 ♂♂ (MNHNB B-12813), idem, vii. 1984–v. 1985, G. LOUBENS; 4 ♂♂, 1 ♀ (MNHNB B-12814), idem; 4 ♂♂, 6 ♀♀ (MNHNB B-12816), idem; 6 ♂♂, 4 ♀♀ (MNHNB B-12817), idem. — Dept. de Cochabamba: 1 ♀, PT of *D. (D.) pagei cristatus* BOTT (ZSM 1089-1), rio Chipiriri, rio Chaparé drainage, x. 1953, W. FORSTER & O. SCHINDLER; 1 ♂ (ZMB 12400), Provincia Sara, 600 m alt., 1907, J. STEINBACH. — 1 ♂, 1 ♀ (RMNH D-38348), Dept. de Santa Cruz: Perseverancia [17°40' S, 63°47' W], 275 m alt., 8. ix. 1990, M. S. HOOGMED.
- Paraguay: Without precise locality: 3 ♂♂, 2 ♀♀ (ZMB 15427), FIEBRIG; 5 ♂♂ (ZMB 8772), RHODE; 4 ♂♂ (BMNH 1985.249), 1929; 1 ♀ (BMNH 1955.11.4.6), 1953/4; 1 ♂ (SMF 4407), rio Paraguay; 2 ♂♂ (ZSM 1092-1), rio Paraguay; 2 ♂♂, 1 ♀ (ZMUC), riacho Corumba near La Zanja, W. SORESENSEN; 1 ♂ (USNM 20322), idem; 2 ♂♂ (USNM 234438), Estancia Salada, Chaco, 150 km from Concepción, 18. vi. 1956, J. GREEN. — Prov. Alto Paraguay: 1 ♀ (MNHNP), rio Negro, na desembocadura com o rio Paraguay, 20°9' S, 58°10' W, 4. ix. 1997, C. MAGALHÃES & B. GARCETE; 1 ♂ (MNHNP), braço do rio Paraguay, Estancia Miranda, 20°40' S, 57°59' W, 5. ix. 1997, G. SEGOVIA; 1 ♂ (MNHNP), idem, 6. ix. 1997, C. MAGALHÃES & B. GARCETE; 1 ♀ (MNHNP), idem; 4 ♂♂ (INPA 1311), rio Paraguay, Puerto Voluntad, 6. ix. 1997, C. MAGALHÃES; 2 ♂♂, 4 ♀♀ (MNHNP), rio Paraguay, Puerto Boquerón, 20°47' S, 57°57' W, 9. ix. 1997, C. MAGALHÃES & G. SEGOVIA; 3 ♂♂ (MNHNP), rio Paraguay, Puerto Lidia, 20°54' S, 57°55' W, 7. ix. 1997, J. THONSEN & G. SEGOVIA; 3 ♂♂, 4 ♀♀ (INPA 1312), idem, 7. ix. 1997, C. MAGALHÃES et al.; 1 ♂, 4 ♀♀ (MNHNP), rio Paraguay, Fuerte Olimpo, 21°2' S, 57°52' W, 8. ix. 1997, C. MAGALHÃES et al.; 1 ♂, 1 ♀ (MNHNP), rio Paraguay, Estancia Cerrito, 21°27' S, 57°55' W, 9. ix. 1997, C. MAGALHÃES & G.

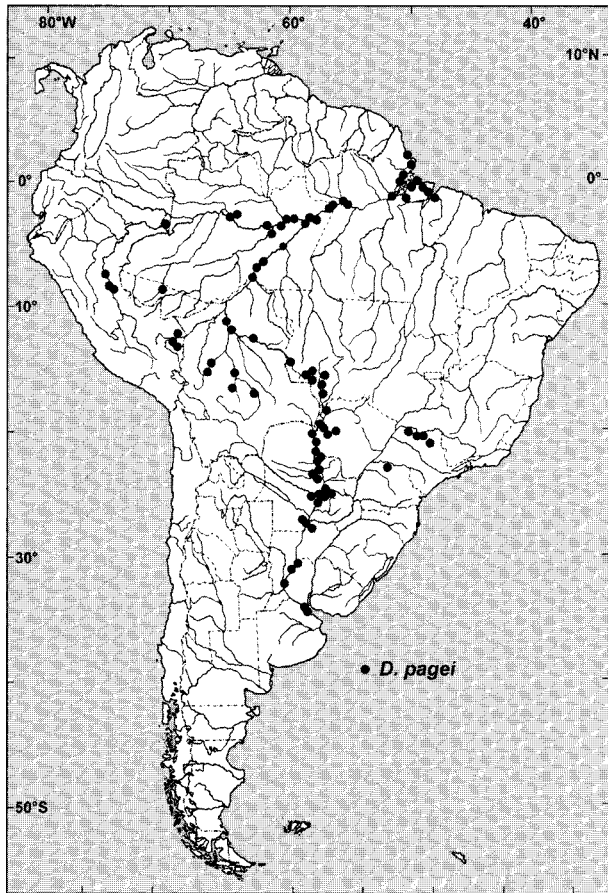


Fig. 11. Distribution map of *Dilocarcinus pagei*.

SEGOVIA; 1 ♂, 1 ♀ (MNHNP), rio Paraguay, ilha do cerro Pan de Azucar, cerca Estancia Cerrito, 21°27' S, 57°55' W, 10. ix. 1997, C. MAGALHÃES et al. — Prov. de Concepción: 3 ♂♂, 3 ♀♀ (MNHNP), rio Paraguay, laguna inundada, ca. 1 km de la casa de la Estancia Ybytupora, 22°7' S, 58°0' W, 14. ix. 1997, D. MANDELBURGER et al.; 2 ♂♂ (INPA 1313), rio Paraguay, cerca de la desembocadura del rio Aquidabán, 23°7' S, 57°38' W, 17. ix. 1997, C. MAGALHÃES; 1 ♂, dry, 16 ♂♂, 5 ♀♀ and 2 juvs. (NHMB 554a), rio Paraguay, Apa-lue, presd 1895, TERNETZ; 2 ♀♀ (MACN 6505), rio Paraguay, Puerto Casado, 22°20' S, 57°55' W, x. 1944, J. CRANWELL & A. J. GIAI; 2 ♂♂, 2 ♀♀ (MZUT Cr 293), Colonia Rizzo, 22°21' S, 57°50' W, 1893, A. BORELLI; 3 ♂♂, 1 ♀ (ZMH K-3632), rio Paraguay, near Puerto Max, 22°41' S, 57°44' W, 9. iii. 1905, L. DES ARTS jr. — Prov. Presidente Heyes: 2 ♀♀ (BMNH 1955.11.4.4-5), Primavera, 24°10' S, 58°1' W, iv. 1955; 3 ♂♂ (BMNH 1955.11.4.1-3), idem, E. J. PHILLIPS; 13 ♂♂, 4 ♀♀ (BMNH 1956.6.10.1-4), rio Tapiracuay, Primavera, E. J. PHILLIPS; 1 ♂ (IRSNB), Presd. Heyes, Transchaco, km 320, 16. v. 1984, J. FAIRON; 1 specim., broken (SMF 6940), Misión San Leonardo, Escalante, rio Pilcomayo, 29. iii. 1974, H. SIOLI; 1 ♂ (USNM 244097), large lagoon above dam, 25°4' S, 57°36' W, 8. viii. 1979, G. R. SMITH & J. N. TAYLOR; 1 ♂ (USNM 244113), idem; 1 ♂ (USNM 244100), rio Pilcomayo, 25°15' S, 57°42' W, J. N. TAYLOR et al. — Prov. Canendiyu: 1 ♀ (USNM 244123), San Pedro, rio Corrientes and flood pool, 32.4 km W of turn off to Curuguaty, 21. vi. 1979, collector unknown. — Prov. Caaguazú: 2 ♀♀ (USNM 244119), arroyo Tobatiry at bridge, near Coronel Ovie-

do, 29. vii. 1979, R. BAYLEY et al. — Prov. Cordillera: 8 ♂♂, 8 ♀♀ (ZMB 15426), rio Salado, tributary of laguna Ipacaray, 18. vii. 1903, FRIEBRIG; 4 ♂♂, 5 ♀♀ (ZMB 15427), laguna Ipacaray, 16. vii. 1903, FRIEBRIG. — Prov. Asunción: 2 ♀♀ (MACN 16515), rio Paraguay, Asunción, vi. 1926, G. FRANCESCINI; 1 ♀ (USNM 119880), rio Paraguay, Asunción Bay, near Asunción, 8. i. 1957, C. J. D. BROWN; 1 ♂ (USNM 234437), idem, 2. i. 1957, C. J. D. BROWN. — Prov. Central: 1 ♀ (USNM 244117), rio Paraguay, 1 km S of Puente Remanso, 25°12' S, 57°33' W, 21. v. 1979, J. N. TAYLOR et al.; 1 ♀ (USNM 244099), rio Paraguay, 1 km S of Puente Remanso, 25°12' S, 57°33' W, 6. xi. 1979, R. BAYLEY & J. N. TAYLOR; 3 ♀♀ (USNM 244124), stream at bridge 70 km E of Luque on dirty road to Aregua, 17. v. 1979, J. N. TAYLOR et al.; 1 ♀ (USNM 244118), idem; 5 ♂♂, 3 ♀♀ (MACN 29237), arroyo Abay, entre Villeta y Puerto San Antonio, 13. i. 1976, M. QUINTANA.

Argentina: Prov. Formosa: 2 ♂♂, 4 ♀♀, 3 juvs. (MACN 6794), iii. 1941, H. HEPPER; 1 ♂ (INPA 1304), Parque Nacional Pilcomayo, xi. 1990, collector unknown; 2 ♂♂ (MACN 18607), rio Paraguay, x. 1929, F. J. MIGOYA. — Prov. Chaco: 1 ♂ (MCSNM 1008); 3 ♂♂ (ZMH K-3680), 9. vi. 1894, BOHLS; 1 ♂ (MACN 31115) Colonia Benitez [27°19' S, 58°55' W], vi. 1969, H. A. GARCIA; 1 ♀ (BMNH 1985.265), Resistencia; 1 ♂ (USNM 19531), idem; 5 ♂♂, 8 ♀♀ (MZUT Cr 289), Resistencia, 1893, A. BORELLI; 1 ♀ (FCEyN), idem, 11. x. 1969, L. B. PRENSKI; 1 ♀ (MZUSP 1793), Barranqueras, 27. x. 1961, P. VANZOLINI. — Prov. Corrientes: 1 ♂, 1 ♀ (MLP ex-12154), Manantiales [27°55' S, 58°6' W], M. BIRABEN; 1 ♂ (MACN 26512), Estancia "Rincón de Luna", Concepción, 1.-10. xi. 1961, W. H. PARTRIDGE. — Prov. Santa Fé: 1 ♂ (MACN 19184), laguna Guadalupe [31°33' S, 60°35' W], viii. 1930, A. CARCELLES & A. ZOTTA; 4 ♂♂, 1 ♀ (MACN 24424), idem, vii. 1940, A. BERT; 1 ♂ (MLP ex-12307), Guadalupe y Alto Verde, A. BERT; 3 ♂♂ (MLP ex-201), Colastiné, ix. 1947, A. BERT; 3 ♂♂ (MLP), Santa Fé, A. BERT; 11 ♂♂, 2 ♀♀ (MACN 6788), rio Paraná, alrededores de Rosario, viii. 1948, A. BACMANN-NANI. — Prov. Entre-Ríos: 5 ♂♂, 1 ♀ (MACN 29268), arroyo Cabayú-Cutiá, La Paz, 1975, R. L. PEZ. — Prov. de Buenos Aires: 1 ♀ (MACN 6797), arroyo Correa, San Fernando, ix. 1948, M. D.-JURADO & J. B. DAGUERRE; 1 ♀ (MACN 6793), arroyo Correa, Tigre, xi. 1933, M. DOELLO-JURADO; 1 ♂ (ZMH K-5249), ?Buenos Aires, ded. 9. iv. 1920, P. FRANK.

**Diagnosis:** Carapace smooth, strongly convex longitudinally. Frontal margin unarmed, bilobed; anterolateral margins with 6 (usually) or 7 acute teeth behind the external orbital tooth. Abdominal somites III-VI fused; somite III with a distinct transversal carina along the anterior margin. Male plp 1 with its distal portion slightly bent in lateral direction. Lateral border gently sinuous, bearing long and short setae medially. Lateroventral side with a rounded subdistal lobe. Marginal suture running along the mesial side of the stem, slightly twisted towards the lateral side near apex after having passed the subdistal lobe. Subterminal spine fields continuous, denser on the lateroventral side, extending distally to the dorsal side, where it is less dense. Dorsal side bearing a dense tuft of short and long setae subdistally. Apex short and flat, somewhat twisted towards the lateral direction; distal opening very narrow.

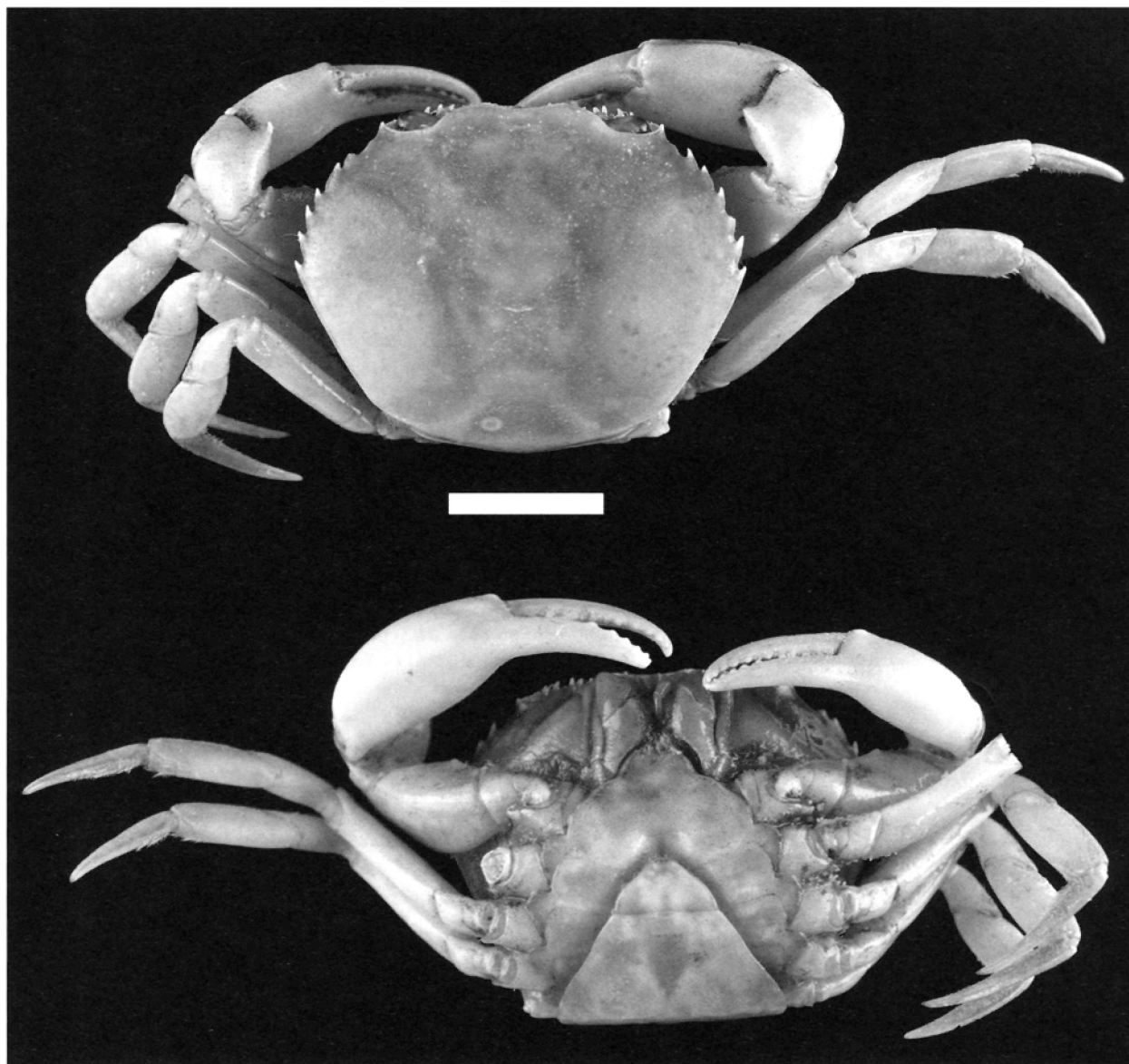


Fig. 12. *Dilocarcinus truncatus*: ♂ HT, ZMH K-3682. — Scale 1 cm.

Measurements: 47.9:39.5 (♀, HT); 63.8:50.9 (largest specimen, ♂, ZMB 12400).

Distribution: Lowlands of the Amazon and the Paraguay-Paraná River Basins, in Brazil, Colombia, Peru, Bolivia, Paraguay and Argentina (Fig. 11).

Remarks: Both ♂ and ♀ of *D. pagei* are readily recognised by the transversal carina along the anterior margin of the third abdominal somite. This species is distributed throughout the lowland habitats of the Amazon and Paraguay/lower Parana River Basins. Its occurrence in the upper Río Parana Basin (states of São Paulo and Paraná) is most probably due to anthropogenic dispersal (MAGALHÃES et al. 2005).

LOPRETTO (1981) synonymised the subspecies, *D. pagei cristatus*, erected by BOTT (1969a), after verifying that homo- and heterochely is present within the same population. The present study, based on material from the whole distributional area, corroborates this decision.

*D. pagei enriquei* was erected by PRETZMANN (1978) based on a single ♂ specimen from the western Amazon region of Peru. The examination of the HT showed that the plp 1 morphology (Fig. 10a, b) is similar to that of the nominotypical form, in spite of some distinctive characters in the carapace and pereopods. The carapace is dorsally uneven, and the dactyls of the walking legs are longer and more slender than in the nominotypical form (the relation length of dactyl/length of propodus is greater than 1.8 in the HT of *D. pagei enriquei*, but it does not exceed 1.7 in the nominotypical form). Such differences in the outer morphology led MAGALHÃES & TÜRKAY (1996a: 78) to keep the subspecific differentiation, as no further specimens from western Amazon were available at that moment. However, the examination of recent collections from Peru (rio Ucayali and surrounding areas of the *D. pagei enriquei* type-locality) showed that those characters are not present in any other speci-

men from that region. Due to this, we suspect that the HT of *D. pagei enriquei* is an abnormal specimen and propose now to consider this taxon as a synonym of *D. pagei*. If more specimens with such characters show up in the future, the problem has to be reconsidered.

***Dilocarcinus truncatus* RODRIGUEZ 1992**

(Figs. 7, 12–13)

*Poppiana argentinianus* — BOTT (1969: 52 [part., 1 ♂ MHa 3672 (= 3682)]).

*Dilocarcinus truncatus*: RODRIGUEZ (1992: 111, figs. 3K, 8G, 13I, 14C, 39A–E). — Type locality: Bolivia, Prov. Beni, rio Beni, Riberalta [10°59' S, 66°6' W]. — Holotype: ♂ (ZMH K-3682), Bolivia, Prov. Beni, rio Beni, Riberalta, 27. VIII. 1909, leg. WINKELMANN.

*Dilocarcinus truncatus* — MAGALHÃES & TÜRKAY (1996: 67, 69, 78); MORRONE & LOPRETTO (1996: 71); MAGALHÃES (2002: 1100); NG et al. (2008: 187).

No additional material available for study.

**Diagnosis:** Carapace smooth, moderately convex longitudinally. Frontal margin unarmed, slightly bilobed;

anterolateral margin with a small, rounded accessory tooth and 6 acute teeth behind external orbital tooth. Abdominal somites III–VI fused; somite III smooth, not crested. Male plp 1 with lateral border slightly concave, with a few scattered setae medially; mesial border slightly convex. Distal portion nearly straight, with a conspicuous rounded subdistal lobe on the lateral side, grooved on the dorsal side; terminal extension of the mesial border twisted towards the ventral side, forming a longitudinal ridge slightly produced beyond the distal border. Marginal suture running along the mesial side of the stem, slightly twisted towards the lateral side at the apex. Subterminal spine fields mostly discontinuous, with a denser patch on the lateroventral side, along the subdistal lobe; a longitudinal patch on the mesiodorsal side; some scattered small spines on the excavated dorsal side; and a single, transversal row of small spines on the mesial side. Subapical setae absent. Apex very short, distal border nearly straight; distal opening small and narrow, directed apically.

**Measurements:** 28.0:22.8:14.8:9.0 (♂, HT).

**Distribution:** Currently only known from the type locality in Bolivia (Fig. 16).

**Remarks:** This species can easily be distinguished from *D. pagei* by the anterior border of the 3rd abdominal somite lacking the transversal carina, and from *D. septemdentatus* by the peculiar morphology of the apex of the plp 1. In *D. truncatus*, the apex is straight and very short, not extending apically beyond the midline of the subdistal lobe, while in *D. septemdentatus* the apex is relatively long, extending apically at least to the end of the subdistal lobe, and presents various degrees of lateral bending.

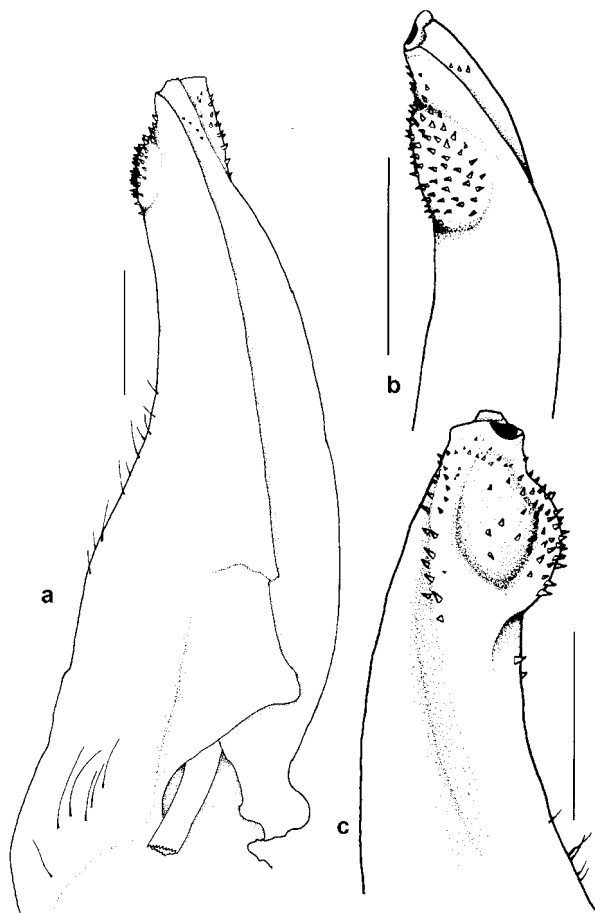


Fig. 13. *Dilocarcinus truncatus* (HT, ZMH K-3682), right ♂ plp 1. a. total, ventro-mesial aspect; b. tip, lateral aspect; c. tip, dorso-lateral aspect. — Scales 1 mm.

***Poppiana* BOTT 1969**

*Poppiana*: BOTT (1969: 49 [part.]). — Type-species: *Orthostoma dentata* RANDALL 1840 [by original designation].

*Poppiana* — MAGALHÃES & TÜRKAY (1996: 82); MAGALHÃES (2003: 224); CAMPOS (2005: 79); NG et al. (2008: 187).

**Key to the species**

- |    |  |                        |
|----|--|------------------------|
| 1  | Frontal margin unarmed, smooth .....   | 2                      |
| 1* | Frontal margin armed with several acute spines .....   | <i>P. dentata</i>      |
| 2  | Plp 1 with ventral margin following a regular curve, without a distinct subdistal lobe ..... | <i>P. argentiniana</i> |
| 2* | Plp 1 with ventral margin bearing a strong subdistal bulbiform lobe .....                    | <i>P. bulbifer</i>     |

***Poppiana dentata* (RANDALL 1840)**

(Figs. 14–16)

*Orthostoma dentata*: RANDALL (1840: 122, pl. 5, figs. 1–3).

— Type locality: HOLTHUIS (1959) restricted the type-

locality to Paramaribo in Suriname. — Lectotype [designated herewith]: ♂ (carapace breadth: 59.2 mm), dry [ANSP (I)37349], locality unknown, T. B. WILSON. — Paralectotypes: 2 ♂♂, 1 ♀, dry [ANSP (I)37349], data as in LT.

*Dilocarcinus multidentatus*: VON MARTENS (1869: 5, pl. 1, fig. 2).

*Dilocarcinus dentatus* — PRETZMANN (1968b: 75); SMALLEY & RODRÍGUEZ (1972: 52, figs. 17–18); DÍAZ & RODRÍGUEZ (1977: 486); RODRÍGUEZ (1980: 344, fig. 100; 1981: 48; 1992: 118, figs. 1H, 2D, 4Y, 5N, 8J, 10L, 13J, 14B, 15H, 42A–I); CAMPOS (1985: 271); VON PRAHL (1988: 34); HOLTHUIS (1993: 9); LÓPEZ & PEREIRA (1994: 69, figs. 12, 14); MORRONE & LOPRETTO (1996: 71); LÓPEZ & PEREIRA (1996: 60, fig. 15; 1998: 77, fig. 3); RODRÍGUEZ & LÓPEZ (2003: 2600); PEREIRA & GARCÍA (2006: 109).

*Dilocarcinus dentatus cayennensis*: PRETZMANN (1968b: 75).

*Dilocarcinus dentatus trinidadensis*: PRETZMANN (1968b: 76).

*Trichodactylus (Dilocarcinus) dentatus* — CHACE & HOBBS (1969: 152, figs. 44, 46a).

*Orthostoma dentata* — SPAMER & BOGAN (1992: 151).

*Poppiana dentata* — BOTT (1969: 50, pl. 11, figs. 19a–b; pl. 20, fig. 50; text-fig. 2); MAGALHÃES & TÜRKAY (1996: 67, 69, 82, figs. 21, 31, 32); MAGALHÃES & PEREIRA (2003: 57, 153; 2007: 9); MAGALHÃES (2003: 225, 230, figs. 124–125); CAMPOS (2005: 79, figs. 18A–I); NG et al. (2008: 187).

**Material studied:** Nicaragua: Prov. Atlántico Sur: 1 ♀ (FMNH 3659), Cukra (12°13'60" N, 83°45'0" W), 25. v. 1948, L. E. LONG.

Trinidad: 1 ♂ (44.0:35.1), HT of *Dilocarcinus dentatus trinidadensis* PRETZMANN (NHMB 1023), 1923, H. G. KUGLER; 2 ♂♂, 1 ♀ (NHMB 763d), Mahuat river, Mayaco, 1935, H. G. KUGLER; 1 ♀, 4 juvs. (RMNH D 7625), South Siparia, 25. vii. 1929, D. C. GEUKES; 2 ♂♂, 9 ♀♀ (RMNH D 10678), Fisheries Exper. Station, 29. i. 1955, P. W. HUMMELINCK; 1 juv. (RMNH D 14968), Mahaut rv., 4. viii. 1954, J. L. PRICE; 1 ♂, 1 ♀ (RMNH D 21186), Tamaua road, 12. ix. 1964, M. BOESEMAN; 2 ♀♀ (RMNH D 17741), near Valencia, 16. vi. 1961, I. KRISTENSEN; 2 ♂♂, 1 ♀ (RMNH D 23391), St. Augustine, 3. ii. 1966, O. H. VON HAGEN; 1 ♀ (RMNH D 21204), Southern Main Road, mile 60 of 69, 1964, M. BOESEMAN; 1 ♂, 1 ♀ (RMNH D 21187), Churchill-Roosevelt Road, near Piarco, 10. ix. 1964, M. BOESEMAN; 2 ♂♂ (RMNH D 21166), Tamaua road, 12. ix. 1964, M. BOESEMAN; 5 ♂♂, 1 ♀ (BMNH 1950.12.13.1-5), Stratham Lodge, rice plot, 28. viii. 1950, Comm. Inst. Entom.; 1 ♂ (BMNH 1949.7.12.1), Barataria Cress, 9. iii. 1949, Comm. Inst. Entom.; 1 ♂ (BMNH 1905.8.24.1), Tabaquite; 2 ♂♂, 3 ♀♀ (FMNH 3663), Brickfield, 5 min. S of Tabaquite, 4. iv. 1947, Trinidad Zool. Exped.; 1 ♀ (FMNH 3634) San Rafael, 3. ii. 1947, Trinidad Zool. Exped.; 1 ♂, 1 ♀ (FMNH 12128), idem; 3 ♂♂, 2 ♀♀ (FMNH 3653), Magoro Plaisance, 23. iii. 1947, F. WONDER; 28 ♂♂, 1 ♀ (IVIC 734), Mitán, 27. iii. 1980, collector unknown; 1 ♂, poor condition (MCZ 8274), Galeota Point, 23. xii. 1934, N. WEBER; 1 ♂, 1 ♀ (MCZ 10256), Sangre Grande, iv. 1913, R. THAXTER; 4 ♂♂, 1 ♀, poor conditions (USNM 137738), Narina swamp, 14. vii. 1970, J. STANLEY.

Venezuela: Without precise locality: 1 ♀ and juvs. (MHNH BP 331), llanos de Venezuela, F. GEAY; 3 ♂♂ (ANSP), Canoquita, 1911, J. E. BIND & S. BROWN. — Estado Falcón: 1 ♂, 1 ♀ (MB-UCV XI-4620), embalse de Tacarigua, sur de Curari, distrito Camora, ca. 11°15' N, 69°0' W, v. 1987, collector un-

known; 1 ♂ (MHNLS 1408), rio Tocuyo, cienaga de Tacarigua, v. 1964, E. VALLADARES; 1 ♂, 4 ♀♀ (NHMB 763c), El Mene, 1929, H. G. KUGLER. — Estado Yaracuy: 2 ♀♀ (MB-UCV XI-2938), rio Yaracuy (Golfo Triste, Mar do Caribe, 10°35' N, 68°15' W), 6. ii. 1987, R. MARTINEZ; 3 ♂♂, 2 ♀♀ (MHNLS 1044), rio Yaracuy, lower basin of rio Marcana, 10°30'30" N, 68°30'30" W], 20. v. 2005, O. CHACON; 2 ♂♂, 3 ♀♀ (MHNLS 1037), idem, 25. ix. 1967, B. R. HERMANO. — Estado Sucre: 1 ♀ (RMNH D), El Pilar, ix. 1940, G. MARCUZZI; 2 ♂♂, 2 ♀♀ (MB-UCV XI-4509, caño 7 km al S de El Pilar, 29. viii. 1984, L. NICO; 4 ♂♂, 3 ♀♀ (IVIC 732), rio proveniente de la laguna Campona, date and collector unknown; 1 ♂, 2 ♀♀ (MB-UCV XI-1350), caño Saramal, sistema Turuepano, distrito Benitez, 6. xii. 1980, F. MAGO; 5 ♀♀ (MHNLS 1346), caño Guariquén, rio Bautista en carretera nacional via Güiria; península de Paria, 11. ix. 1992, O. LASSO & G. COLONNELLO; 10 ♂♂ (MHNLS 1343), idem, v. 1964, O. LASSO & G. COLONNELLO; 1 ♂, 1 ♀ (MHNLS 1288), idem, 10°37'58" N, 62°23'47" W, 19. v. 2006, B. LÓPEZ et al.; 3 ♀♀, 2 juv. (MHNLS 1296), idem, 20. ix. 2004, B. LÓPEZ et al.; 4 ♂♂ (MHNLS 1297), idem, v. 1964, B. LÓPEZ et al.; 1 ♀ (MHNLS 1298), idem; 4. v. 2004, B. LÓPEZ et al.; 3 ♂♂, 3 ♀♀ (MHNLS 1302), idem, 22. v. 2005, B. LÓPEZ et al. — Distrito Federal: 4 specim. (MB-UCV XI-0857), Cota 1000, sitio Las 3 Lochas, valle de Caracas, 26. xi. 1966, R. C.V.; 1 specim. (MB-UCV XI-0858), rio Macarao, trib. rio Guaire, valle de Caracas, 5. xii. 1966, R.C.V. — Estado Miranda: 1 specim. (MHNLS 958), caño Basura, tributary of rio Tuy, near poblado Panaquire, 10°12'22" N, 66°6'19" W, 18. vii. 1956, C. LASSO & J. DAMACEDO; 1 specim. (MHNLS 959), idem; 1 ♂, 3 ♀♀ (MHNLS 1090), idem, 20. v. 2006, C. LASSO et al.; 1 ♂, 2 ♀♀ (MB-UCV XI-2550), Estación de Piscicultura, altos de Pipe, date and collector unknown. — Estado Aragua: 1 ♂ (FMNH 3643), Maracay (10°14' N, 67°35' W), date unknown, Dr. V. BARNES; 1 ♀ (ZSM 1090-2), Maracay, P. VOGL; 4 ♂♂, 4 ♀♀ (ZSM 1090-1), idem; 1 ♂, 1 ♀ (SMF 4296), idem; 1 ♀ (IVIC 725), El Pardillal (9°56' N, 67°1' W), 1. x. 1952, collector unknown; 1 ♀ (IVIC 726), quebrada Barbacoas, municipio Barbacoas, 12. xi. 1967, J. PULIDO. — Estado Carabobo: 1 ♂ (IVIC 729), Naguanagua, Valencia, 7. xi. 1965, F. RUMBOS. — Estado Cojedes: 2 ♀♀ (IVIC 730), 2 km al N de Apartaderos, 22. x. 1949, C. CIFERI; 1 ♂ (USNM 91237), Quebrada Caramacate, 2 km N of Apartaderos, 2. x. 1949, A. F. YEPES & C. CIFERI; 3 ♂♂, 3 ♀♀ (MHNLS 1801), Hato Los Caballos, km 60 carretera Tinaco–El Baul, 9°17'36" N, 68°25'50" W, 18. v. 2005, M. LENTINO; 1 ♀ (IVIC 731), Hato Pinero, 11. v. 1995, F. GARCÍA & A. MATA. — Estado Zulia: 1 ♂ (MB-UCV XI-4500), caño Dora, 9. xii. 1982, D. C. TAPHORN; 1 ♂, 1 ♀ (USNM 53392), rio Tuy, El Concejo, 1. viii. 1918, A. S. PEARSE. — Estado Anzoátegui: 3 ♂♂, 2 ♀♀ (MB-UCV XI-4508), rio Unare, 9 km al W de Barcelona, 27. viii. 1984, L. NICO; 1 ♀ (MB-UCV XI-1644), carretera Barcelona–El Tigre, 23. v. 1981, G. PEREIRA; 1 ♀ (FMNH 3629), rio Guanipa, morichal, 12. vii. 1995, B. CHERNOFF & A. MACHADO; 5 ♂♂ (USNM 71250), near Carapa (8°48' N, 63°58' W), 20. xi. 1929, E. G. HOLT. — Estado Monagas: 2 ♀♀ (MHNLS 1835), embalse El Guamo, via Maturín–Cumana, 9°51' N, 63°41' W, 15. xi. 2004, A. BERMUDEZ; 1 ♀ (USNM 119879), Guarapiche river, Caicara, v. 1952, F. D. SMITH; 3 ♂♂, 2 ♀♀ (MB-UCV XI-1253), rio Amana, en el puente, ca. 5 km al S de Maturín, en la carretera Maturín–Temblador, 13. xii. 1980, F. MAGO; 2 ♂♂, 3 ♀♀, 3 juv. (MHNLS 1062), morichal Largo, laguna San José, Coloradito, 9°11'56" N, 63°25'14" W, 20. v. 2005, R. FEO; 3 ♂♂, 7 ♀♀ (MB-UCV XI-3774), confluencia entre los rios Guanipa y Amana, xi. 1993, L.

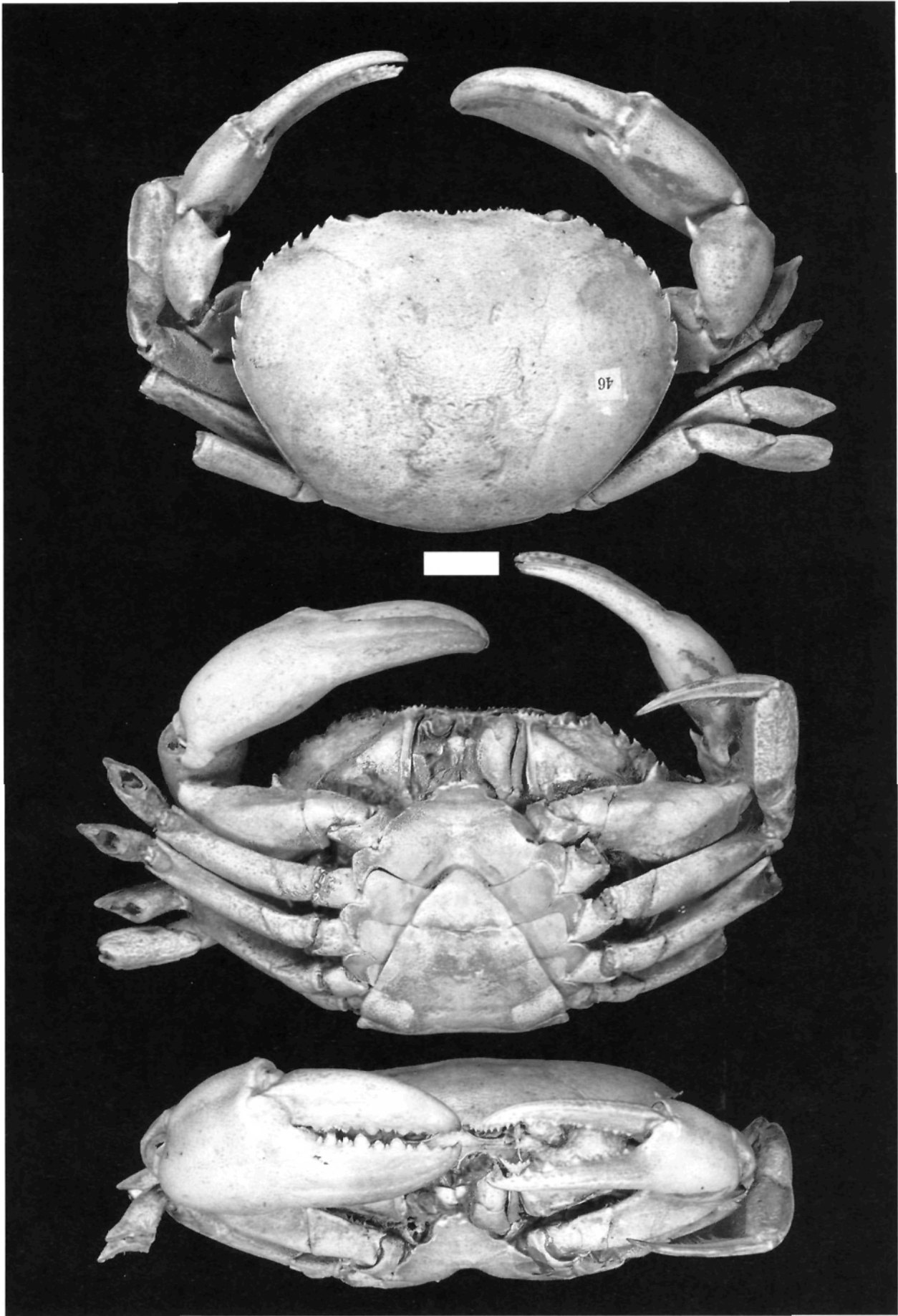






Fig. 14b. *Poppiana dentata*: ♀ HT of *Dilocarcinus multidentatus* VON MARTENS 1869, ZMB 3341. — Scale 1 cm. — Photo: Senckenberg-Museum, S. TRÄNKNER.

TRÍAS; 2 ♂♂ (MB-UCV XI-1623), laguna El Guatero, Barrancas, 12. xi. 1979, J.G.L. — Estado Guárico: 2 ♂♂, 2 ♀♀ (USNM 91236), río afluente del río Guárico, 6 km S del Sombrero, 21. x. 1949, A. & A. F. YEPES; 2 ♂♂, 5 ♀♀ (IVIC 726), idem, A. F. YEPES; 1 ♂ (MB-UCV XI-1081), El Sombrero, 10. v. 1965, F. TAMOYO; 1 ♂, 4 ♀♀ (MB-UCV XI-1836), quebrada Juveal, carretera Sombrero–Calabozo, 30. vi. 1968, A. MACHADO et al.; 1 ♂ (MHNLS 1655), Hato La Merrereña, Las Mercedes del Llano, [9°9'24" N, 66°23'16" W], 27. viii. 1974, D. LOUREIRO; 1 ♂, 2 ♀♀ (MB-UCV XI-1082), caño en el bosque de chaparral, Pica-Pica, entre calle de la Pascua y Chaguaramas (9°21' N, 66°15' W), 10. v. 1965, F. TAMOYO; 1 ♂, 1 ♀ (IVIC 728), Espino (8°34' N, 66°1' W), 17. vii. 1951, F. A. YEPEZ; 1 ♂ (MB-UCV XI-1262), Calabozo, 9. i. 1981, D.

RADA; 1 ♀ (MB-UCV XI-1838), Hato El Recreo, Calabozo, 1. x. 1968, A. MACHADO et al.; 2 ♂♂, 1 ♀ (MB-UCV XI-724), Calabozo, Hato Piritu, 2. i. 1963, F. TAMOYO; 3 ♂♂ (MB-UCV XI-2982), canal de riego, entre Est. Exp. MAC y Calabozo, 12. xii. 1964, R. MARTÍNEZ; 1 ♀ (MB-UCV XI-1838), Calabozo, caño del Hato El Recreo, cerca de la Estación Biol. Llanos, 1. x. 1968, F. MAGO et al.; 7 ♂♂, 2 ♀♀ (MB-UCV XI-1492), carretera Camaguán–Calabozo, 13. x. 1979, F. PROVEZANO et al.; 2 ♀♀ (MB-UCV XI1837), Cabruta, sabana, distrito Monagas, 1. xi. 1982, F. SUSACH; 1 ♀ (MB-UCV XI-1462), Cabruta, xi. 1981, F. SUSACH. — Territ. Delta Amacuro: 1 ♂, 2 ♀♀ (IVIC 733), without precise locality, 1981, E. ALVAREZ; 1 ♂ (MHNLS 2447), delta del Orinoco costero, entre Punta Bombeador y boca del caño Mariusa, [9°59'16.6" N, 61°39'58.6" W], 19. v.

Fig. 14a. *Poppiana dentata*: a. ♂ LT of *Orthostoma dentata* RANDALL 1840, ANSP (I)3734. — Scale 1 cm. — Photo: P. CALLOMON, ANSP.

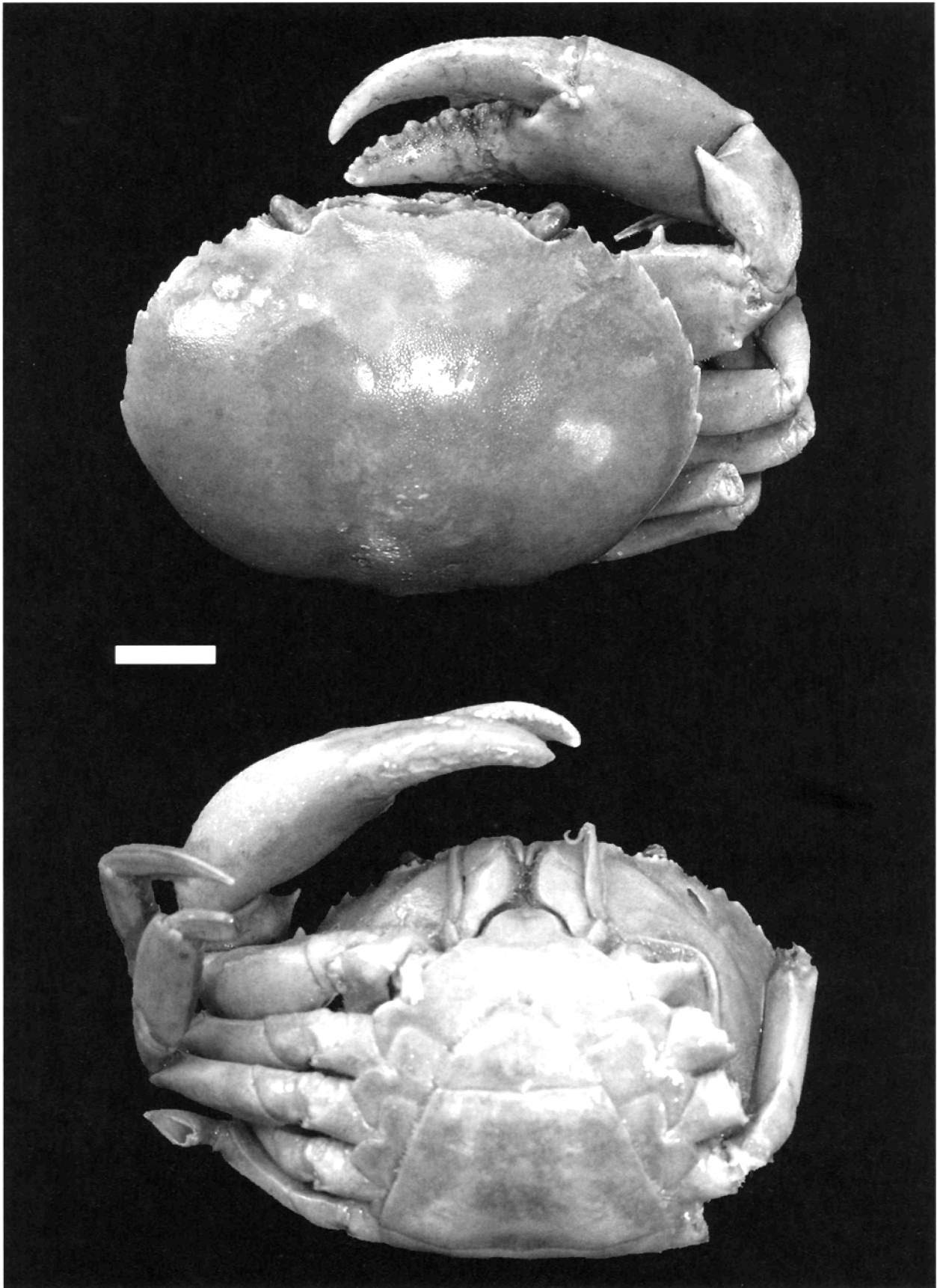


Fig. 14c. *Poppiana dentata*: ♂ HT of *Dilocarcinus dentatus cayennensis* PRETZMANN 1968, ZMUC 6000. — Scale 1 cm. — Photo. C. BECKER.

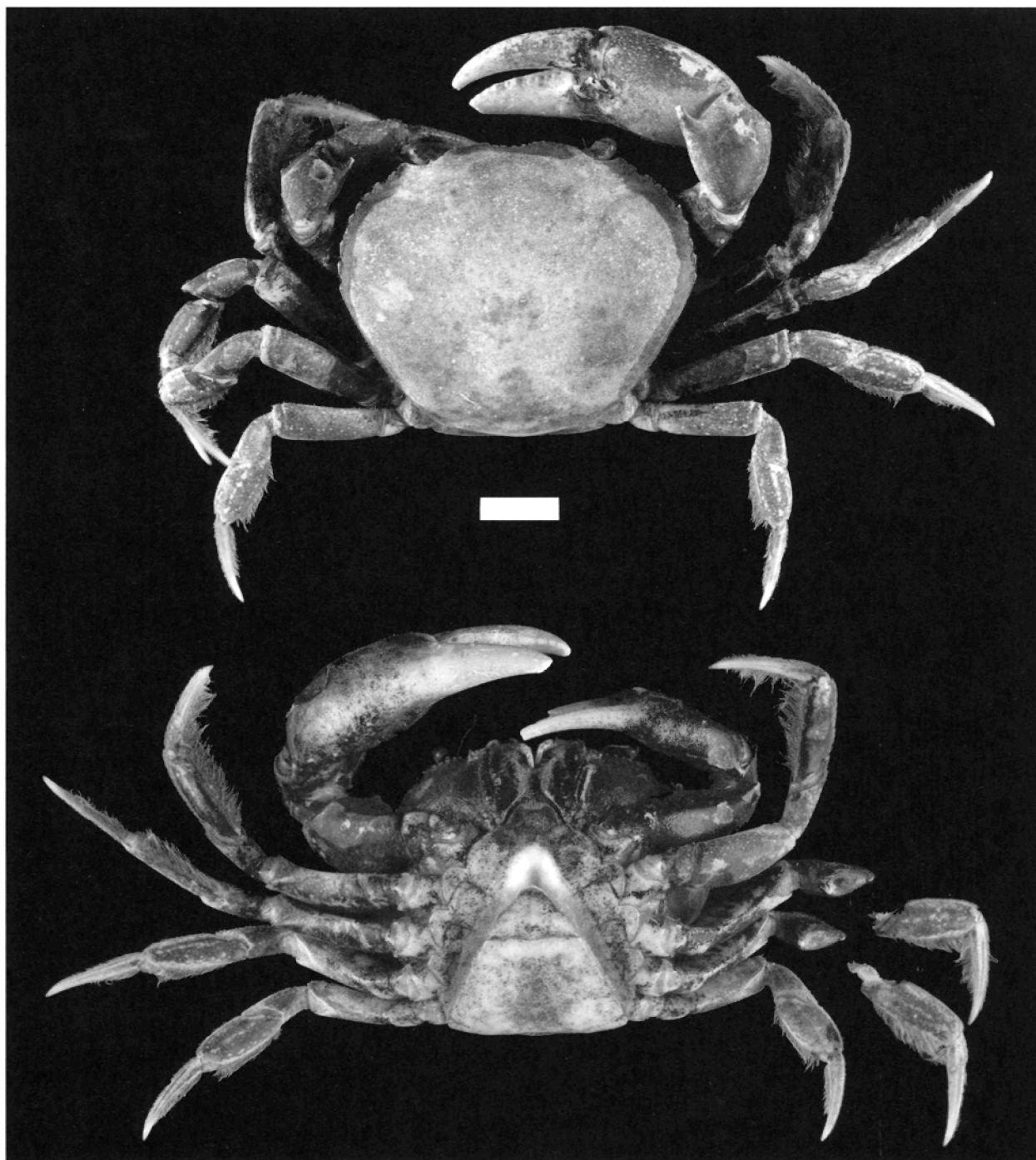


Fig. 14d. *Poppiana dentata*: ♂ HT of *Dilocarcinus dentatus trinidadensis* PRETZMANN 1968, NHMB 1023. — Scale 1 cm. — Photo: Senckenberg Museum, S. TRÄNKNER

2006, J. MORA; 1 ♂, 1 ♀ (MHNLS 1770), delta del Orinoco, caño Cocuina, sector La Calentura, canal de desagüe de morichal, 9°24'59" N, 61°53'49" W, 18. v. 2006, collector unknown; 1 ♀ (MHNLS 1152), río Orinoco, laguna Las Barrancas, 6 km N Ciudad Guayana, 8°32'36" N, 62°16'19" W, 7. XII. 2002, C. LASSO & L. PEREZ; 1 ♂, 1 ♀ (MHNLS 1671), caño Guaramo, tributary of río Ibaruma, SE from Curiapo, 8°24'25" N, 60°57'10" W, 23. v. 2006, B. LÓPEZ et al.; 2 ♂♂ (MHNLS 1684), caño Tumere, tributary of río Ibaruma, SE from Curiapo, 10°28'39" N, 60°55'34" W, v. 1964, B. LÓPEZ &

V. PONTE. — Estado Portuguesa: 7 specim. (MHNLS 469), hacienda La Herrereña, cuenca alta río Are, La Aparición, 9°23'30" N, 69°22'47" W, 6. IX. 1950; C. ALEMÁN & F. MARTIN; 1 specim. (MHNLS 477), idem, 9. IX. 1950, F. MARTIN; 2 ♂♂, 3 ♀♀ (MB-UCV XI-1844), Villa Coromoto, S de Guanare (9°3' N, 69°65' W), 27. VII. 1981, F. MAGO; 1 ♀ (MB-UCV XI-1269), carretera 2 Caminos–El Baul, 1980, O. CASTILLO; 1 ♂ (MB-UCV XI-4498), caño Maraca, vía Guanarito, 8°49'0" N, 69°23'5" W, 25. VII. 1980, D. C. TAPHORN. — Estado Táchira: 1 juv. (ZMA), Agua Caliente, P. HUMMELINCK. — Estado Barinas:

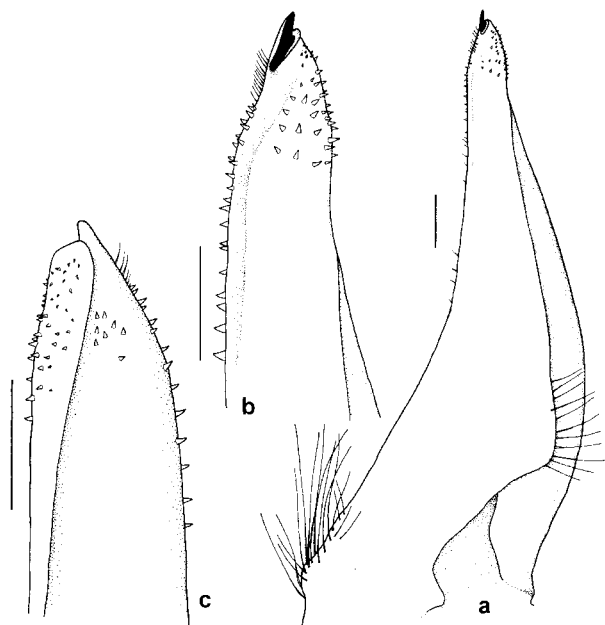


Fig. 15. *Poppiana dentata*, right ♂ plp 1, SMF 22245. a. total, ventro-mesial aspect; b. tip, ventro-mesial aspect; c. tip, dorsal aspect. — Scales 1 mm.

2 ♀♀ (MB-UCV XI-4617), Res. For. de Tipocorno (8°10' N, 70°49' W), 19. vi. 1985, collector unknown; 2 ♂♂, 1 ♀ (MB-UCV XI-4517), caño entre Santa Rosa (8°26' N, 69°32' W) e Libertad (8°20' N, 69°38' W), cuenca del río Apure, 1. vii. 1980, collector unknown; 2 ♂♂ (MB-UCV XI-4518), cerca a Puerto de Nutrias (8°4' N, 69°9' W), 26. vi. 1981, collector unknown. — Estado Bolívar: 1 ♂ (NHMW 21825), road Ciudad Bolívar–Ciudad Guayana, near “El Almacén”, on a little affluent of Río Orinoco, viii. 2000, A. M. CAPOLONGO; 1 ♂ (IVIC 723), Río Caroni, Puerto Ordaz, Parque Cachamay, 4. iii. 1978, J. CLINE; 1 ♀ (SMF 4295), Ciudad Bolívar, 1897, T. LÜNING; 1 ♂ (INPA 646), idem; 1 ♀ (IVIC 721), 12 km al SSE del puente sobre la quebrada Sanare, cerca de 70 km de El Manteco (7°39' N, 62°49' W), date and collector unknown; 1 ♂, 2 ♀♀ (IVIC 720), Hato Terecay, 16 km al N de El Manteco, 7. vi. 1977, S. BORZULA; 1 ♂, 1 ♀ (MB-UCV XI-4512), caño el la pista Parapopo–El Manteco, 26. xi. 1992, L. NICO; 1 ♀ (MB-UCV XI-1839), morichal de Tur, sabana El Purgatorio, por detrás del Cerro Altamira (7°28' N, 63°13' W), cerca de Col. Pire, date unknown, F. MAGO & A. MACHADO; 1 ♀ (MB-UCV XI-856), río Caroni, Guasipati (7°28' N, 61°54' W), 8. xi. 1966, PULIDO; 1 ♂, 1 ♀ (IVIC 722), El Callao (7°19' N, 61°49' W), caño Onoto, date and collector unknown; 1 ♀ (MB-UCV XI-853), idem, 24. x. 1966, PULIDO; 1 ♀ (MB-UCV XI-854), idem; 2 ♂♂ (MB-UCV XI-4504), cañito 8 km al N de Jabillal, 7°3' N, 64°55' W, 3. iii. 1989, D. C. TAPHORN; 5 ♂♂, 3 ♀♀ (MHNLS – field number 980211.C), Río Caura, laguna Cejal, unkown data and collector; 2 ♂♂, 2 ♀♀ (INPA 829), quebrada Carrizal, trib. Río Caura, al S. del raudal Cinco Mil, 6°58' N, 64°52' W, 10. xii. 2000, C. MAGALHÃES et al.; 4 ♂♂ (MB-UCV XI-0848), La Paragua, 5. x. 1966, J. MOSCÓ; 3 ♂♂, 3 ♀♀ (MB-UCV XI-849), La Paragua, distrito Heres, río Paragua, 6. x. 1966, L. DUQUE; 1 ♂ (MB-UCV XI-847), La Paragua, 4. x. 1966, R. CAMPOS; 1 ♂ (MB-UCV XI-851), La Paragua, caño Surama, trib. del río Paragua, 8. x. 1966, J. MOSCÓ et al.; 2 ♂♂ (MB-

UCV XI-4511), río Cuyuni, caño 2.2 km al W de Alcababi, isla Anacoco (6°43' N, 61°7' W), 27. vii. 1988, L. NICO; 2 specim. (MHNLS 872), río Botanamo, between Tumeremo and Bochínche, 7°19'37" N, 61°25'26" W, G. FEO et al.; 1 specim. (MHNLS 875), carretera El Dorado–Tumeremo, Prestamo, 19. xi. 1955, D. TAPHORN et al.; 2 specim. (MHNLS 862), río Venamo, desembocadura de quebrada Apanao, isla Anacoco, viii. 1955, E. SALAS; 6 specim. (MHNLS 869), idem, 12. ii. 1954, E. SALAS; 2 specim. (MHNLS 876), río Cuyuni, isla Anacoco, San Martín de Turumban, 6°42'52" N, 61°5'18" W, 19. xi. 1955, D. TAPHORN et al.; 12 specim. (MHNLS 863), cuenca río Cuyuni, Alcabala Anacoco–Tumeremo, km 7, 7°18'57" N, 61°27'21" W, viii. 1955; R. FEO & M. LENTINO; 2 ♀♀ (MHNLS 870), río Cuyuni, caño Negro; km 50; carretera Tumeremo–Bochínche, [7°28'50" N, 61°5'37" W], 20. ii. 1980, R. FEO & D. TAPHORN; 1 ♂ (MHNLS 874), río Cuyuni, isla de Anacoco, San Martín de Turumban, [6°42'52" N, 61°5'18" W], 23. viii. 1979, J. MARTINEZ J. & I. AGUDO; 1 ♂, 1 ♀ (MHNLS 881), río Cuyuni; isla de Anacoco; San Martín de Turumban, 26. ii. 1980, R. FEO; 1 ♀ (MHNLS 877), Anacoco, Estacion Hidrologica MARNR, 15. ii. 1980, G. FEO & D. TAPHORN; 1 ♀ (MHNLS 885), Río Corumo (afluente del río Cuyuni), carretera Tumeremo–Bochínche, [7°10'2" N, 61°16'30" W], 21. ii. 1980, R. FEO et al.; 2 specim. (MB-UCV XI-0797), caño Sumanaro, trib. del río Cuyuni, km 33, El Dorado [6°34' N, 61°35' W], 22. vii. 1966, R. CAMPOS; 3 ♂♂, 2 ♀♀ (MZUSP 4566), afluyente del río Cuyuni, km 33 carretera Eldorado–Santa Helena de Uairen, 22. vii. 1966, R. CAMPOS; 1 ♂ (MB-UCV XI-798), km 67, carretera El Dorado–Santa Helena de Uairen, trib. del río Caroni, 27. vii. 1966, R. CAMPOS & J. MOSCÓ; 1 specim. (MB-UCV XI-0798), afluyente del río Cuyuni, carretera El Dorado–Santa Helena, 27. vii. 1966, R. CAMPOS & J. MOSCÓ; 6 specim. (MHNLS 2279), quebrada Aymara, 6°8'54" N, 61°25'52" W, 28. viii. 1993, A. GIRALDO; 7 specim. (MHNLS 871), carretera El Dorado–Santa Helena de Uairén, km 88, Las Claritas, 6°9'37" N, 61°25'43" W, 23. ii. 1956, M. LENTINO; 3 specim. (MHNLS 878), idem, 19. xi. 1955, R. & G. FEO; 5 ♂♂, 3 ♀♀ (MHNLS 1768), caño Mato, tributary of río Caura, 7°10'58" N, 65°9'51" W, 27. viii. 2006, collector unknown; 7 ♂♂, 5 ♀♀ (INPA 828), caño Madulaima, afluyente del río Cácaro, trib. del río Erebató, cuenca del río Caura, 5°29' N, 64°35' W, 26. xi. 2000, C. MAGALHÃES et al.; 6 specim. (MHNLS 2237), streams at left bank of río Paragua, río Caroni basin, 5°19'5" N, 63°24'41" W, 19. vii. 1993, J. MORA & C. LASSO; 5 specim. (MHNLS 2278), cuenca río Caroni, caño Parabateburen, tributary right bank of río Paragua, 5°16'49" N, 63°22'13" W, 29. viii. 1993, C. LASSO. — Estado Apure: 1 ♀ (MHNLS 334), San Fernando de Apure, 7°53'59" N, 67°28'34" W, 3. xii. 2002, L. RIVAS; 1 ♀ (MB-UCV XI-1207), carretera San Fernando de Apure, a nivel del caño Falcón, 23. i. 1979, A. LUENGO; 1 ♀ (MZUSP 2404), Hato los Matapalos, 15 km W of Achaguas, 17. vii. 1966, J. OJASTI; 1 ♂, 1 ♀ (MB-UCV XI-4510), río Apure, río arriba de Apurito, 2. ix. 1984, L. NICO; 1 ♂ (MB-UCV XI-3785), Mantecal (7°32' N, 69°9' W), carretera Bruzual-Mantecal, 24. x. 1981, O. CASTILLO & LEON; 2 ♂♂, 2 ♀♀ (MB-UCV XI-1547), El Yagual, 7°29' N, 68°25' W, date and collector unknown; 1 ♂ (MB-UCV XI-2937), Hato El Cedral, viii. 1988, F. ROYAS; 3 ♂♂ (MB-UCV XI-4629), Hato El Frio, 22. xii. 1978, F. BISBAL; 1 ♂ (MHNLS 1225), estero Manirito, Hato El Frio, 7°43'56" N, 68°48'38" W, 19. x. 2006, C. LASSO; 6 ♂♂, 3 ♀♀, 1 juv. (MHNLS 1228), idem, 27. viii. 2006, C. LASSO; 1 ♂ (MHNLS 1230), laguna Las Ventanas, Hato El Frio, 25. x. 2006, C. LASSO; 1 ♀ (MHNLS 1231), caño Rabo de

Iguana, Hato El Frio, 4. v. 2004, C. LASSO; 5 ♀♀ (MHNLS 1233), idem, 12. i. 1991, C. LASSO; 1 ♂ (MHNLS 1234), idem, 21. x. 2006, C. LASSO; 2 ♂♂, 1 ♀ (MHNLS 1235), idem, 4. xii. 2005, C. LASSO; 1 ♀ (MHNLS 1232), carretera Mucuritas, Hato El Frio, 4. v. 2004, C. LASSO; 1 ♂, 3 ♀♀ (MHNLS 1226), caño La Carmera, Hato El Frio, 17. v. 2006, C. LASSO; 7 ♂♂, 2 ♀♀ (MB-UCV XI-855), La Trinidad de Arauca (rio Arauca), 28. x. 1966, J. OJASTI; 1 ♂ (MNHN BP 95), plaine dans un affluent de l'Apure, 1894, F. GEAY.

Guyana: 1 ♀ (AMNH 4640), Baburif[?] swamp, 24. vi. 1919; 1 ♂, dry (USNM 23091), probably Berbice, C. G. YOUNG; 1 ♂, 2 ♀♀ (BMNH 1960.10.5.2-4), lower Pomeroon river, 20. vii. 1957, R. H. L. McCONNEL.

Suriname: 1 ♀, poor cond. (RMNH D 1281), 1883, C. J. HERING; 1 ♀ (RMNH D 12186), 16 km E Coronie, xii. 1948, Surin. Exped. 1948-49; 2 ♀♀, dry (RMNH D), near Coronie, iii. 1954, J. C. LINDEMAN; 1 ♂, 2 ♀♀ (RMNH D 7623), Paramaribo, vii. 1911, W. C. v. HEURN; 10 juvs. (RMNH D 5427), idem, 5. ii. 1941, D. C. GEIJKES; 5 juvs. (RMNH D 5428), idem, 18. iv. 1940; 1 ♂ (RMNH D 25660), idem, 17. viii. 1969, M. S. HOOGMOED; 1 ♀ (RMNH D 12120), idem, 1911, W. C. v. HEURN; 2 ♂♂ (RMNH D 21082), Brokopondo lake, Suriname river, 9. vii. 1964, P. LEENTVAAR & M. BOESEMAN; 1 ♂ (RMNH D 21078), Suriname rv., near Aroesoebanja, Afobaka, 23. vi. 1964, M. BOESEMAN; 1 ♂ (RMNH D 22694), Kwanbado creek, Suriname rv., 27. x. 1955, M. BOESEMAN; 1 ♂ (USNM 231567), Nickerie, Datibere creek at Camp Clemmen, 6. iv. 1980, R. P. VARI et al.; 1 ♂ (USNM 231571), Nickerie, Corantijn rv., 19. x. 1980, R. P. VARI et al.; 1 ♀, dry (RMNH D 27198), Wagennigen, NW Suriname, 10. iii. 1971, M. BOESEMAN; 2 ♂♂ (RMNH D 18685), Wagennigen near Nickerie, NW Suriname, 9. vi. 1963, A. M. HUSSEN & P. STAFFELEN; 1 ♂, 3 juvs. (RMNH D 27772), Corantijn rv., near Matapi, 13.-15. iv. 1971, D. C. GEIJKES; 1 ♀ (RMNH D 33224), Baruba creek, Kabalebo basin, Nickerie, 21. ix. 1980, M. S. HOOGMOED; 1 ♂ (USNM 231569), Nickerie, Dalbaria creek trib., 3 km upstream from Amobopo road cross., 15. ix. 1980, R. VARI; 1 ♂ (INPA 352), Avanavero-val, Kabalebo rv., xi.-xii. 1964, A. KABELAFONDO; 7 ♂♂, 3 ♀♀ (RMNH D 33207), Baruba creek, ca 60 km SW of Avanavero-val, Kabalebo rv. basin, Nickerie distr., 17.-30. ix. 1980, M. S. HOOGMOED; 1 ♀ (RMNH D 33208), idem, 17. ix. 1980, J. J. P. PAATS & M. S. HOOGMOED; 2 ♂♂ (RMNH D 27199), Kabalebo rv., Avanavero-val, 7. iv. 1971, D. C. GEIJKES; 2 ♂♂ (RMNH D 33209), Kabalebo rv., near Devis vallen, Nickerie distr., 31. viii. 1980, M. S. HOOGMOED; 1 ♀ (RMNH D 7626), Lucie rv., 1. xii. 1910, J. F. HULK; 4 ♂♂, 3 ♀♀ (RMNH D 34686), road Avanavero-Amotopo, mouth of Lucie rv., 212 km from Avanavero, Nickerie distr., 22. v. 1981, M. S. HOOGMOED & D. G. REEDER; 3 ♂♂, 1 ♀ (RMNH D 34687), idem, 8. v. 1981, D. G. REEDER & A. BABOZAM; 1 ♀ (RMNH D 34688), Baruba, mouth of Lucie rv., 113 km from Avanavero, Nickerie distr., 9. v. 1981, M. S. HOOGMOED; 3 ♂♂, 1 ♀ (RMNH D 12119), near Lucie rv., vii.-viii. 1926, D. L. FERNANDES; 1 ♂ (RMNH D 25942), 3 km O v. vliegveld, Kaysergebirg, 11. viii. 1968, M. S. HOOGMOED; 1 ♂ (RMNH D 29281), Sinaliurini, SW Suriname, v.-vi. 1972, G. F. MEES.

French Guiana: 1 ♂ (58.1:44.1), HT of *Dilocarcinus dentatus cayennensis* PRETZMANN (ZMUC 6000), 1 ♀, juvs. (ZMUC), Cayenne, ISRAEL.

Brazil: Without precise locality: 1 ♀ (42.1:33.5), HT of *Dilocarcinus multidentatus* VON MARTENS (ZMB 3341), Brasilien, "wahrscheinlich" Bahia[?], KERKARTZ. — Estado de Roraima: 4 ♂♂ juv., 2 ♀♀ juv. (INPA 1251), rio Uraricoera,

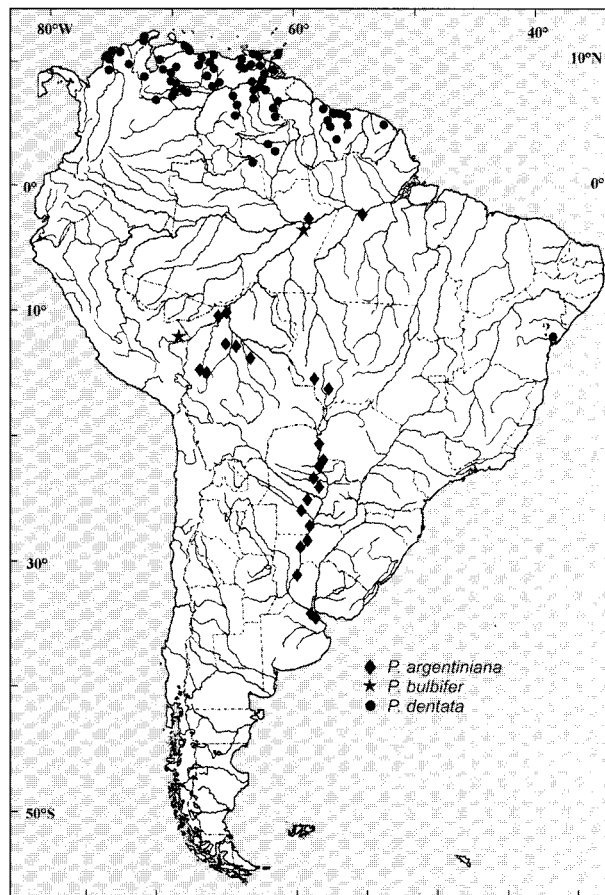


Fig. 16. Distribution map of *Poppiana argentiniana*, *P. bulbifer* and *P. dentata*.

igarapé na ilha de Maracá, 5. vii. 1995, V. KOWALCZUK; 1 ♂ (MNRJ 8711), rio Mucajá, 19.-21. ix. 1986, C. F. S. MENEZES. — Estado do Amazonas: 4 ♂♂, 4 ♀♀ (INPA 1250), upper Rio Demini Basin, igarapé unnamed, Polo Sanitário de Toototobi, 1°45'57" N, 63°37'2" W, 13. viii. 1994, V. PY-DANIEL et al.

Colombia: Without precise locality: 1 ♀ (SMF 22246), 5. iii. 1979, L. PEREZ. — Dept. La Guajira: 1 ♂ (ICN-MHN 2228), Riohacha, río Rancheria, 40 m, 10. x. 2004, P. SÁNCHEZ; 2 ♂♂ (ICN-MHN 1223), San Juan del Cesar, río Cesar, 210 m, 28. i. 1990, M. ESTRADA. — Dept. César: 1 ♂, 4 ♀♀ (ICN-MHN 2391), Chimichagua, caño Guaraguao, vía El Cerro, 34 m, 9°17' N, 73°47' W, 18. ix. 2006, M. R. CAMPOS. — Dept. Bolívar: 2 ♂♂, 3 ♀♀ (ICN-MHN 1824), Santa Catalina, Hacienda El Ceibal, en laguna, 50 m altitude, 4. x. 1999, M. FIERRO; 1 ♂, 1 ♀ (ICN-MHN 50), Cartagena, carretera Cartagena-Bayunca, 1. xi. 1972, P. CALA; 1 ♂ (ICN-MHN 2172), San Juan de Nepomuceno, 150 m, 30. xii. 1972, J. PALACIO; 1 ♂, 1 ♀ (SMF 29880), San Juan Nepomuceno [9°56' N, 75°5' W], 30. xii. 1988, collector unknown; 2 ♂♂, 1 ♀ (SMF 22245), arroyo Naranjal, 30. xii. 1978, H. VON PRAHL. — Dept. Santander: 1 ♀ (ICN-MHN 2441), Sabana de Torres, Vereda Campo Tigre, Finca Nuevo Sol, 34 m, 7°24' N, 73°43' W, 25. iii. 2007, J. D. LYNCH. — Dept. Arauca: 1 ♂, 4 ♀♀ (ICN-MHN 628), Puerto Rondón, Estación de Biología Experimental El Guafal, 125 m altitude, 19. ix. 1985, A. ARIAS. — Dept. Córdoba: 1 ♂ (ICN-MHN 2100), Montería, Ciénaga de Betancí, Caño Betancí, en

Loma de Pepo, Maracayo, 80 m altitude, 8°24' N, 75°53' W, 29. XI. 2003, G. CÁRDENAS.

No locality indicated: 1 ♂ (NHMW 6662); 1 ♀ (USNM 234440); 2 ♂♂ (ZSM 1090-3).

**Diagnosis:** Carapace smooth, strongly convex longitudinally; frontal margin spined, bilobed; antero-lateral margins with 7–9 small, acute teeth, and a small accessory tooth just behind the external orbital tooth. Abdominal somites III–VI fused. ♂ plp 1 with distal portion slightly bent in lateral direction. Marginal suture running on the mesial side, totally displaced to the dorsal side near the apex. Distal opening narrow and terminal; its borders rolled up, lateral border forming a small apical projection, mesio-dorsal border rolled up towards the dorsal side. Subterminal spine fields poorly developed, discontinuous, with a reduced patch on the dorsal surface, and 2 larger patches on the mesial and lateral surfaces.

**Measurements:** 3 ♂♂ (41,5:32,9; 51,2:38,5; 58,8:43,3 — largest specimen), 1 ♀ (46,8:32,9) (STs).

**Distribution:** Trinidad, coastal river basins of northwestern and northern South America (Colombia, Venezuela, Guyana, Suriname and French Guyana), Orinoco drainage (Venezuela and Colombia) and Rio Negro drainage (Brazil) (Fig. 16). VON MARTENS' (1869) record to the state of Bahia in Brazil ("perhaps Bahia") is highly doubtful, as the distributional area of this species seems to be clearly delimited along the northern part of South America, with its southern and eastern limits reaching, respectively, the northern tributaries of the Rio Negro Basin, in Brazil, and the coastal river basins of French Guiana.

An additional records from Colombia was published by PEARSE (1921: río Fundación, Dept. Magdalena).

The present species is now recorded for the first time from Nicaragua and the collection data seem to be trustworthy. This is the second record of a trichodactylid crab from Central America south of Mexico, besides the one made by RATHBUN (1893) for the type locality of *Trichodactylus quinqueidentatus*, and extends significantly the distributional area of *P. dentata* mentioned above. However, the occurrence of this species, as well as other trichodactylids in Central America, still has to be clearly confirmed by further and comprehensive collections.

**Remarks:** The examination of the HTs of *Dilocarcinus dentatus cayennensis* and *D. dentatus trinidadensis* made clear that the differences in the carapace, chelipeds and abdomen pointed out by PRETZMANN (1968b) can be due to intraspecific variability. Therefore, we consider here both of these species as junior synonyms of *P. dentata*.

### *Poppiana argentiniana* (RATHBUN 1905)

(Figs. 16–23)

*Trichodactylus (Dilocarcinus) argentinianus* RATHBUN (1904: 242 [nomem nudum]).

*Trichodactylus (Dilocarcinus) argentinianus*: RATHBUN (1905: pl. 18, figs. 5–6). — Type locality: Argentina, Prov.

de Santa Fé, Las Garzas. The original description of this species was based on 2 ♂ STs from different localities in Argentina; BOTT (1969) restricted the type locality to Las Garzas, therefore the specimen from the MNHN should be considered as the LT. — Lectotype [designated herewith]: ♂ (MNHN BP-40), Argentina, Prov. de Santa Fé, Las Garzas [28°50' S, 59°29' W], 25 km from d'Ocampo, 1904, R. WAGNER. — Paralecotypes: 1 ♂ (31.2:24.0) (USNM 32012), Argentina, Prov. Chaco, Resistencia, 1893, A. BORELLI; 3 ♂♂ (? , ?, 28.5:23.5) (MZUT Cr 289), idem.

*Trichodactylus (Dilocarcinus) argentinianus* — RATHBUN (1906a: 60, text-fig. 129; 1906b: 504); COIFMANN (1939: 112).

*Trichodactylus argentinianus* — FREIRE & REBELLO NETO (1921: 134).

*Dilocarcinus argentinianus* — PRETZMANN (1968: 75); RODRIGUEZ (1992: 108, figs. 14D, 38A–F).

*Dilocarcinus (Poppiana) argentinianus* — LOPRETTO (1976: 68, 88, figs. 1, 30–33).

*Poppiana argentinianus* — BOTT (1969: 52, pl. 12, figs. 21a–b; pl. 21, fig. 52); PILLERI (1972: 104, pl. 1); RODRIGUEZ (1981: 48); MORRONE & LOPRETTO (1994: 100, fig. 20).

*Poppiana argentiniana* — MANNING & HOBBS (1977: 159); PRETZMANN (1979: pl. 3, figs. 6–10); MORRONE & LOPRETTO (1995: 4); MAGALHÃES & TÜRKAY (1996a: 67, 69, 82);

*Poppiana argentiniana* — MAGALHÃES (2001: 70, 133, 138; 2002: 1100; 2003: 225, 226, figs. 120–121); NG et al. (2008: 187).

*Dilocarcinus argentinianus apaluensis*: PRETZMANN (1968b: 75).

*Trichodactylus (Dilocarcinus) orbicularis?* — RATHBUN (1906a: 58 [part., "?Bolivia (NOBILI)"]; 1910: 580 [part., "Bolivia?"]); COLOSI (1920: 15 [part., 3 ♂♂ from "Resistencia, Chaco Argentino (NOBILI)"]); COIFMANN (1939: 113 [part., cf. RATHBUN 1906b]).

*Trichodactylus (Valdivia) boliviensis*: PARISI (1923: 29, 2 figs.).

*Trichodactylus (Valdivia) boliviensis* — COIFMANN (1939: 111); FROGLIA & GRIPPA (1986: 278).

*Trichodactylus (Dilocarcinus) bachmayeri*: PRETZMANN (1968a: 4).

*Dilocarcinus bachmayeri* — PRETZMANN (1968b: 75).

*Poppiana bachmayeri* — PRETZMANN (1979: 591, pl. 1, figs. 1–2; pl. 2, figs. 3–5).

**Material studied:** Brazil: Estado do Amazonas: 5 ♂♂ (USNM 234439), Itacoatiara, 1911, F. BAKER, Stanford Exped. — Estado do Pará: 1 ♂ (INPA 879), Santarém, Comunidade Santa Maria do Tapará, 21. XI. 1999, Equipe do Lab. de Pesquisas em Herpetologia da Amazônia; 1 ♂ (MPEG 738), idem. — Estado do Mato Grosso: 1 ♂ (INPA 562), córrego Brigadeiro [tributary of rio Jaurú], próximo a Figueirópolis [15°30' S, 58°43' W], 29. IX. 1984, V. PY-DANIEL & U. BARBOSA; 1 ♀, juvs. (MNRJ MD-1020), rio Aguapeí, afl. rio Jaurú, Porto Espiridião, 24. XI. 1984, W. ZWINK; 2 ♂♂ (MNRJ MD-1025), idem; 1 ♂, dry (MNRJ MD-1110), rod. Transpantaneira, km 125, Poconé, 22. VII. 1979; 3 ♂♂, 2 ♀♀ (INPA 360), rod. Transpantaneira, baía do Pio, Poconé, 17. VII. 1985, V. A. ARAÚJO; 1 ♂, 1 ♀ (SMF 22247), idem; 5 ♂♂ (INPA 358), idem, 27. IV. 1985, V. A. ARAÚJO; 1 ♂ (INPA 359), idem, 8. VIII. 1985, V. A. ARAÚJO; 2 ♂♂, 2 ♀♀ (MZUSP 9502), idem, 6. VII. 1985, V. A. ARAÚJO.

Bolivia: Without precise locality: 1 ♂, HT of *Trichodactylus (Valdivia) boliviensis* PARISI (MCSNG), Misiones Mosenes, 1892, L. BALZAN; 2 ♂♂, 3 ♀♀, PTs of *Trichodactylus (Valdi-*



Fig. 17a. *Poppiana argentiniana*: ♂ HT of *Trichodactylus (Valdivia) boliviensis* PARISI 1923, MCSNG. — Scale 1 cm. — Photo: Senckenberg-Museum, S. TRÄNKNER.

*via boliviensis* (MCSNG), idem; 1 ♂, PT of *Trichodactylus (Valdivia) boliviensis* PARISI (MCSNM 41), idem. — Prov. Pando: 1 ♂ (45.0:32.1:20.6:13.9), HT of *Trichodactylus (Dilocarcinus) bachmayeri* PRETZMANN (NHMW 6680; not 3787 as in PRETZMANN 1968a; not 3781, as in PRETZMANN 1979), Ingavi, i. 1936, W. HANKE. — Prov. Beni: 1 ♀ (NHMB 816a), rio Beni, cachoeira Esperanza, 1932, H. MEHLIN; 2 ♂♂, 2 ♀♀ (SMF 32610), Los Lagos, 12°46,965' S, 65°49,403' W, 168 m, 13. i. 2007, M. JANSSEN; 1 ♂ (USNM 110452), San Joaquin, 18. vi. 1963, C. E. YUNKER & M. KUNS; 3 ♂♂, 1 ♀ (USNM 78502), Huachi, W. M. MANN; 1 ♂, 1 ♀ (USNM 76777), Rurrenabaque, W. M. MANN; 1 ♂, 1 ♀ (USNM 76776), idem. — Prov. La Paz: 2 ♂♂, 1 ♀ (MNHNB), Prov. Iturrealde, arroyo La Piscina, San Buenaventura, rio Beni drainage, 14. i. 1982, E. FORNO.

Paraguay: Without precise locality: 1 ♀ (BMNH 1954.7.26.2), rio Paraguay, E. J. PHILLIPS; 1 ♂ (ZSM 1091-1), rio Paraguay;

1 ♂ (SMF 4292), rio Paraguay; 1 ♂, dry (USNM 62362), Chaco paraguayo, F. FILIPPONE; 1 ♂, dry (USNM 61372), idem. — Prov. Alto Paraguay: 1 ♀ (MNHNP), rio Paraguay, Puerto Boquerón, 9. ix. 1997, C. MAGALHÃES & G. SEGOVIA. — Prov. Concepción: 1 ♂ (24.0:19.9), HT of *Dilocarcinus argentinianus apaluensis* PRETZMANN (NHMW 6669), rio Paraguay, Apalúe, NATTERER; 1 ♂, 6 ♀♀ (ZMH K-3697), rio Paraguay, Estancia Postillon, Puerto Max, 22°41' S, 57°44' W, ded. 9. iii. 1905, L. DES ARTS jr; 1 ♂, 2 ♀♀ (SMF 4888), idem. — Prov. Presidente Hayes: 1 ♀, juvs. (BMNH 1954.7.26.1), Primavera, 24°10' S, 58°1' W, E. J. PHILLIPS; 1 ♂ (BMNH 1955.11.4.8), idem, 16. x. 1954; 1 ♀ (BMNH 1955.11.4.7), idem, 18. x. 1954, E. J. PHILLIPS; 1 ♂ (MZUSP 4768), ruta Transchaco, km 222, Pozo Colorado, 22°38' S, 60°30' W, 24. xi. 1976, J. JIM et al.

Argentina: Prov. Formosa: 1 ♀ (MACN 32128), Los Inmigrantes, ca. Comand. Fontana, xi. 1981, E. MAURY. — Prov.

