

# Taxonomy of the Neotropical freshwater crab family Trichodactylidae II. The genera *Forsteria*, *Melocarcinus*, *Sylviocarcinus*, and *Zilchiopsis* (Crustacea: Decapoda: Brachyura)

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With 57 figures

### Abstract

Four genera of the Trichodactylidae-Valdiviini are revised. While *Forsteria* and *Melocarcinus* contain only one species each, *Sylviocarcinus* has five (one new) and *Zilchiopsis* three valid species. The synonymies of the more common species are discussed in detail.

### Introduction

The present paper deals with a revision of most of the genera of the tribe Valdiviini. Only *Valdivia* and *Rotundovaldivia* were excluded and will be dealt with in a separate publication. It was especially the rediscovery of *Sylviocarcinus devillei* H. MILNE-EDWARDS 1853, that provided the impetus for the revision of that genus. Early on this study it became apparent that the morphology of *Sylviocarcinus* and *Zilchiopsis* was very similar and this had resulted in a great number of specimens being misidentified. To clear up the current confusion both genera are revised. Comments are made about the two other genera in the tribe together with listings of the species currently recognized including synonyms. To assist other colleagues working in the field of South American freshwater crabs a key to the species is provided for each genus.

The measurements given in the descriptions of the individual species refer to (in mm): Carapace-breadth: Carapace-length: Body height: Frontal breadth. Plp 1 and plp 2 were used for referring to the first and second male pleopods, respectively.

The following abbreviations have been used throughout the paper for repositories of specimens:

AMNH = American Museum of Natural History, New York; ANSP = Museum of the Academy of Natural Sciences of Philadelphia; EPA = Expedição Permanente na Amazônia; FCEyN =

Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Buenos Aires; FMNH = Field Museum of Natural History, Chicago; FZB = Museu de Ciências Naturais da Fundação Zoológica do Rio Grande do Sul, Porto Alegre; INPA-CR = Coleção Sistemática de Invertebrados, Seção Crustacea, Instituto Nacional de Pesquisas da Amazônia; IRSNB = Institut Royal des Sciences Naturelles de Belgique, Bruxelles; MACN = Museo Argentino de Ciencias Naturales "BERNARDINO RIVADAVIA", Buenos Aires; MCSNG = Museo Civico di Storia Naturale "GIACCOMO DORIA", Genova; MCSNM = Museo Civico di Storia Naturale di Milano; MCZ = Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts; MLP = Museo de La Plata, La Plata; MNHN = Museum National d'Histoire Naturelle, Paris; MNRJ = Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro; MPEG = Museu Paraense EMILIO GOELDI, Belém; MZUSP = Museu de Zoologia da Universidade de São Paulo, São Paulo; MZUT = Museo ed Istituto di Zoologia Sistemática dell'Università di Torino; MZVS = Musée Zoologique de l'Université LOUIS PASTEUR et de la Ville de Strasbourg, Strasbourg; NHMB = Naturhistorisches Museum Basel, Basel; NHML = The Natural History Museum, London; NHMW = Naturhistorisches Museum Wien, Wien; NNHM = Nationaal Natuurhistorisch Museum, Leiden; NRMSt = Naturhistoriska Riksmuseet, Stockholm; SMF = Senckenberg Museum, Frankfurt a. M.; 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

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Alegre; UNAM = Colección de Carcinología del Instituto de Biología, Universidad Nacional Autónoma de México, México, D. F.; USNM = National Museum of Natural History, Smithsonian Institution, Washington, D. C.; UZM = Universitetets Zoologiske

Museum, København; ZMB = Zoologisches Museum der Humboldt-Universität, Berlin; ZMH = Zoologisches Institut und Museum, Hamburg; ZSM = Zoologische Staatssammlung, München.

## Systematic account

### *Forsteria* BOTT 1969

1969 *Valdivia* (*Forsteria*) BOTT, Abh. senckenb. naturf. Ges., 518: 37.

Type-species: *Valdivia* (*Forsteria*) *venezuelensis edentata* BOTT 1969 [by original designation].

### *Forsteria venezuelensis* (RATHBUN 1905)

(Figs. 1–6, 49)

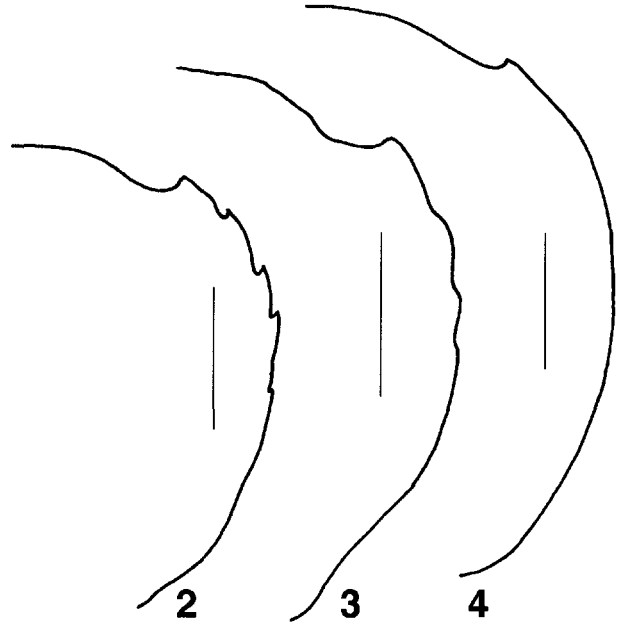
1904 *Trichodactylus* (*Valdivia*) *venezuelensis* RATHBUN, Nouv. Arch. Mus. Hist. nat., (4)6: 242 [Nomem nudum].

1905 *Trichodactylus* (*Valdivia*) *venezuelensis* RATHBUN, Nouv. Arch. Mus. Hist. nat., (4)7: pl. 17, fig. 10.

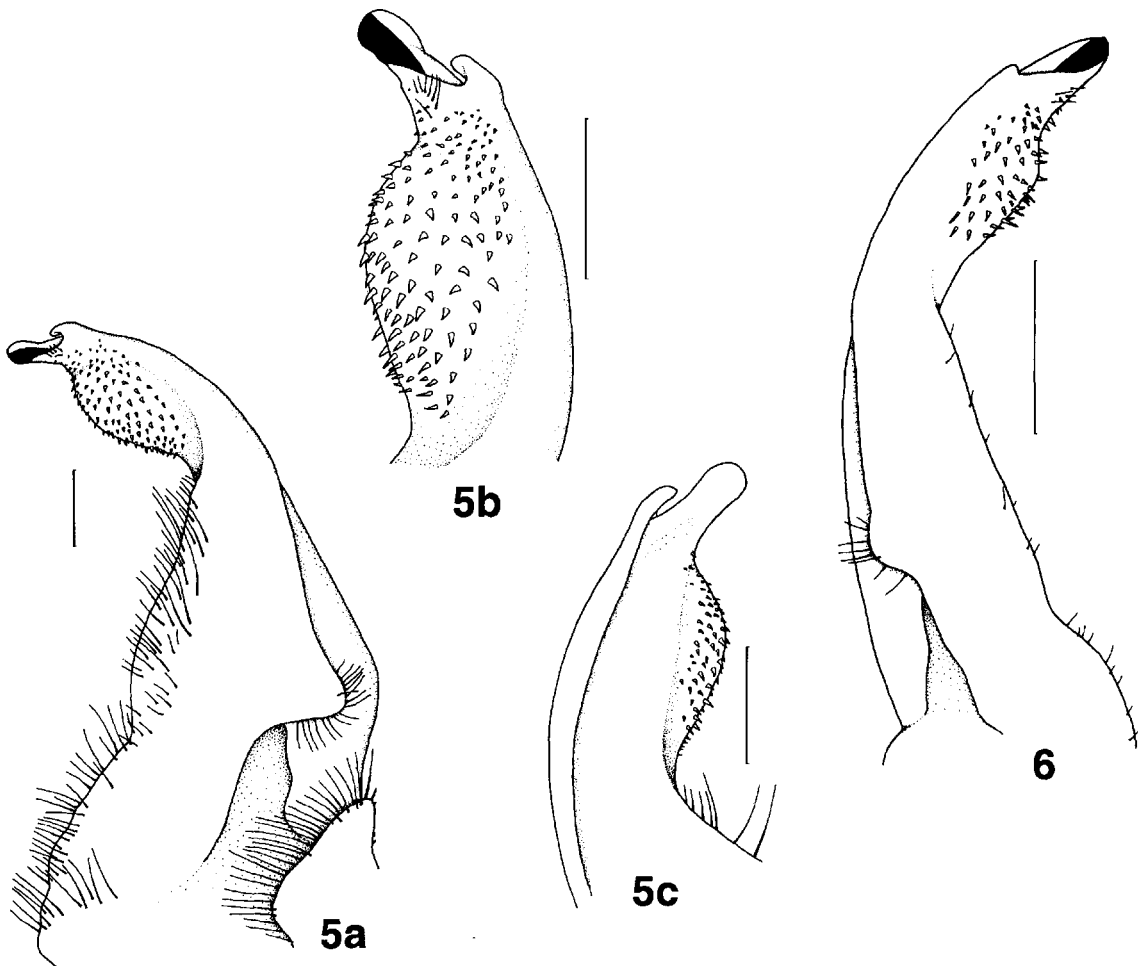


Fig. 1. *Forsteria venezuelensis* (holotype of *F. venezuelensis edentata*, ZSM 1102/1), dorsal and ventral aspect. — Scale 20 mm.

Figs. 2-4. *Forsteria venezuelensis*, carapace contours. — 2) Paralectotype, USNM 30029; 3) USNM 234450; 4) USNM 184333. — Scales 1 mm.



- 1906 *Trichodactylus (Valdivia) venezuelensis*, — RATHBUN, Nouv. Arch. Mus. Hist. nat., (4)8: 47.  
 1968 *Trichodactylus (Valdivia) ornatifrons* PRETZMANN, Entom. Nachrbl., 15(2): 3  
 1969 *Valdivia (Forsteria) venezuelensis venezuelensis*, — BOTT, Abh. senckenb. naturf. Ges., 518: 37, pl. 5, fig. 9a-b.  
 1969 *Valdivia (Forsteria) venezuelensis edentata* BOTT, Abh. senckenb. naturf. Ges., 518: 38, pl. 6, fig. 10a-b, pl. 19, fig. 40.  
 1972 *Valdivia venezuelensis*, — SMALLEY & RODRIGUEZ, Tulane Stud. Zool. Bot., 17(3/4): 50, figs. 13-14.  
 1977 *Valdivia venezuelensis*, — DIAZ & RODRIGUEZ, Biol. Bull., 153: 486.



Figs. 5-6. *Forsteria venezuelensis*, male plp 1. — 5) USNM 234450, right limb (a: total, ventro-mesial aspect; b: tip, ventro-mesial aspect; c: tip, dorso-lateral aspect); 6) Holotype of *Trichodactylus (Valdivia) ornatifrons* PRETZMANN 1968. — Scales 1 mm.

- 1980 *Valdivia venezuelensis*, — RODRIGUEZ, Los Crustaceos Decapodos de Venezuela: 343, fig. 99.  
 1981 *Valdivia venezuelensis*, — RODRIGUEZ, Aquat. Biota trop. South America, 1: 48.  
 1983 *Valdivia (Forsteria) meekei*, — PRETZMANN, Ann. naturhist. Mus. Wien, 84B: 325 [part., pl. 7, at least fig. 17].  
 1992 *Forsteria venezuelensis*, — RODRIGUEZ, Faune tropicale, 31: 98, figs. 1G, 4S, 5G, 8A, 9H, 13D, 15I, 34A–H.

Lectotype: ♀ (MNHN BP 333), Venezuela, Orinoco, CHAFFANJON.

Paralectotype: 1 ♀ (USNM 30029), data as lectotype.  
 Material: Venezuela: 1 ♀ (ZMB 5671), SACHS; 1 ♀ (MNHN B-17674), llanos de Venezuela, F. GEAY. — Estado Aragua: 1 ♂ (USNM 234450), Rio Guarico, between San Sebastian and San Casimiro, 1942, L. P. SCHULZ. — Estado Cojedes: 1 ♂ (USNM 91234), Quebrada Caramacate, 2 km N de Apartadero, 2.X.1949, A. F. GEPEZY & C. CIFERNI. — Estado Monagas: 1 ♂ [partially broken], holotype of *Trichodactylus (Valdivia) ornatifrons* PRETZMANN (USNM 119883), Guarapichi river, Caicara, V.1952, F. D. SMITH; 1 ♂ (USNM 184333), idem, 8.IX.1968, ESTEVES. — Estado Bolívar: 1 ♀ (ZSM 1101-1), Ciudad Bolívar, WEHRENDT; 1 ♂ (37.2: 34.8), holotype of *Valdivia (Forsteria) venezuelensis edentata* BOTT (ZSM 1102-1), Boliven [probably a misspelling for Bolívar], LENZ. — Estado Apure: 1 ♂ 1 ♀ (MNHN B-17675), plaine jusqu'aux pieds des Andes, dans un affluent de l'Apure, F. GEAY.

Colombia: Depto Meta: 2 ♂ (SMF 22226), afluente del Rio Meta, mun. de Meta/caño Danielero, finca El Cairo, mun. Restrepo, 16 km de Villavicencio; 1 ♂ (SMF 22227), Rio Meta, Puerto Lopez, 17.III.1979, V. PRAHL; 2 ♂ 1 ♀ (SMF22228), 1 ♂ 1 ♀ (INPA-CR 647), idem.

Diagnosis: Carapace with 3–4 anterolateral teeth, fading away in large specimens. Abdominal segments III–V fused. Thoracic sternum and endophragmal system as in *Valdivia*. Male plp 1 with a distinctly bulged subdistal lobe on its latero-ventral side; spine field well developed, confined to subdistal lobe; basal lobe inconspicuous. Suture displaced to the dorsal side in the distal third of the limb, returning to the ventral side at the extreme tip where it meets the terminally situated distal opening. Plp 2 longer than plp 1.

Measurements: 38.0 : 34.3 : ? : ? (lectotype ♀)  
 Type locality: “Venezuela, Orénoque”.

Distribution: Orinoco drainage of Venezuela and Colombia.

Remarks: The present species is quite variable with respect to carapacial characters. Large specimens show a tendency towards swelling of the carapace and fading away of the anterolateral teeth. In fact, different age classes have been considered as separate species. PRETZMANN (1968a) described a juvenile specimen with visible granula on the frontal margin under the specific name *T. (V.) ornatifrons*. BOTT (1969), in contrast based the genus *Forsteria* on an adult male without any trace of anterolateral teeth, which he described as a new subspecies under the name *Forsteria venezuelensis edentata*. After having examined the material at our disposition, it becomes clear that only one species is involved and that both PRETZMANN's and BOTT's taxa cannot be separated from *F. venezuelensis*.

***Melocarcinus* MAGALHÃES & TÜRKAY 1996**

- 1996 *Melocarcinus* MAGALHÃES & TÜRKAY, Senckenbergiana biol., 75 (1/2): 87.

***Melocarcinus meekei* (PRETZMANN 1968)**

(Figs. 7, 8, 49)

- 1968 *Trichodactylus (Valdivia) meekei* PRETZMANN, Entom. Nachrbl., 15(2): 2.  
 1968 *Valdivia (Valdivia) meekei*, — PRETZMANN, Entom. Nachrbl., 15 (7/8): 71.  
 1969 *Trichodactylus (Valdivia) meekei*, — BOTT, Abh. senckenb. naturf. Ges., 518: 40.  
 1983 *Valdivia (Forsteria) meekei*, — PRETZMANN, Ann. naturhist. Mus. Wien, 84(B): 325, pl. 6, figs. 14–15, ? pl. 7, fig. 16 [part., nec pl. 7, fig. 17 = *Forsteria venezuelensis*].  
 1992 *Trichodactylus (Valdivia) meekei*, — RODRIGUEZ, Faune tropicale, 31: 100.

Holotype: ♂ (USNM 59345), Panama: Prov. Darién, Rio Yape, 6.III.1912, MEEK & HILDEBRAND, Smithsonian Biological Survey.

Paratype: 1 ♂ (USNM 59345), data as holotype.

Material: Panama: Prov. Darién: 1 ♀ (AMNH 11431), Rio Chucunaque, 4.IV.1924, MARSH-Darién Exped.

Diagnosis: Carapace with 4 anterolateral teeth. Abdominal segments III–V fused. Sternal plate and endophragmal system (judged by external view) as in *Sylviocarcinus*. Male plp 1 with a subdistal lobe, subterminal spine field well developed, arranged in one longitudinal area, which is split proximally on the dorsolateral face; stem with a prominent basal lobe on its ventral border; suture begins at the ventro-mesial side, in the distal half it is more or less displaced towards the dorsal side, where it meets the similarly directed distal opening. Plp 2 longer than plp 1.

Measurements: 56.7 : 51.3 : ? : ? (holotype ♂)

Type locality: Panama, Prov. Darién, Rio Yape, 08°07'N 77°35'W.

Distribution: Known only from near the type-locality.

Remarks: PRETZMANN (1968, 1983) cited the type locality of the present species as “Colombia”. In fact, there is more specific information on the locality label of the type series deposited in the collection of the USNM: “Rio Yappi, MEEK & HILDEBRAND, Smithsonian Biological Survey, 6. III. 1912”. The lapsus is explained by the fact, that Panama was a province of Colombia until 1903. Only one specimen has been recorded since its description.

***Sylviocarcinus* H. MILNE-EDWARDS 1853**

- 1853 *Sylviocarcinus* H. MILNE-EDWARDS, Ann. Sci. nat., (3)20: 215.

**Key to the species**

1. Abdomen with segments III–V fused, VIth segment free 2
- Abdomen with segments III–VI fused ..... 4
2. Frontal margin usually beset with pearl-shaped granules or spines, not distinct in very large specimens. Sub-distal lobe of male plp 1 strong ..... *S. devillei*
- Frontal margin unarmed. Subdistal lobe of male plp 1 absent or very weak ..... 3
3. Male plp 1 without a trace of a subdistal lobe, subterminal spine fields confluent, forming a well developed spiny area covering nearly the whole distal half of the limb ..... *S. maldonadoensis*

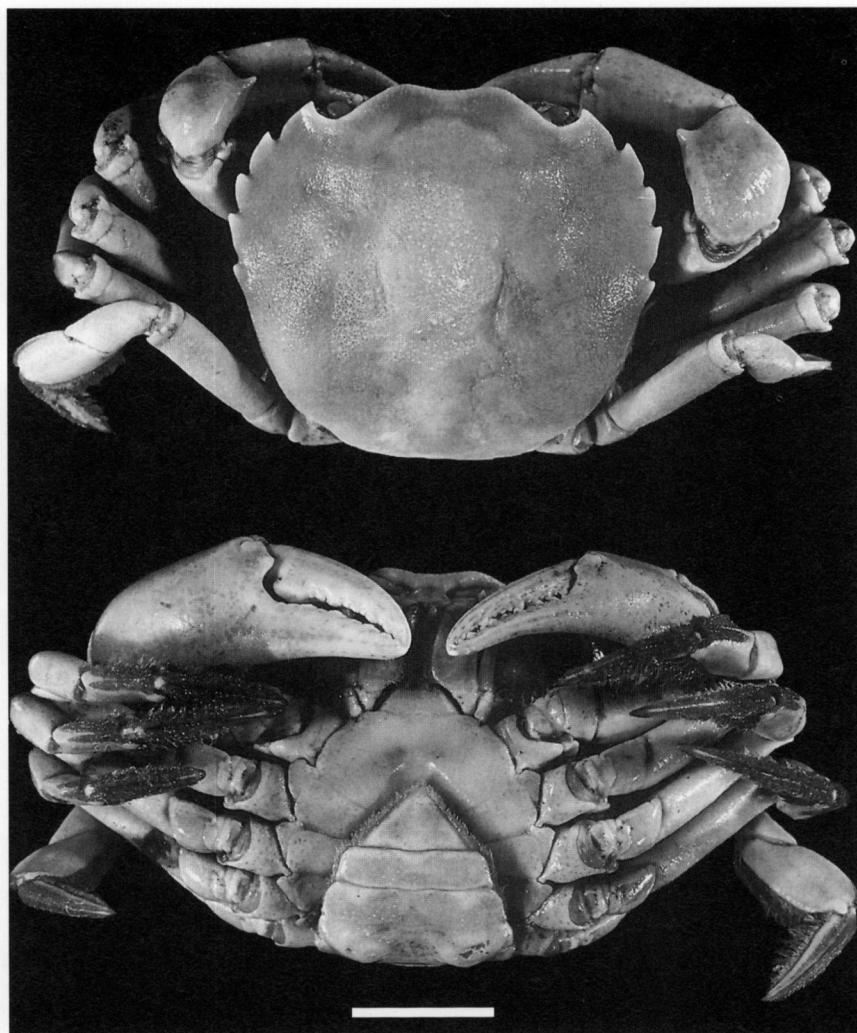
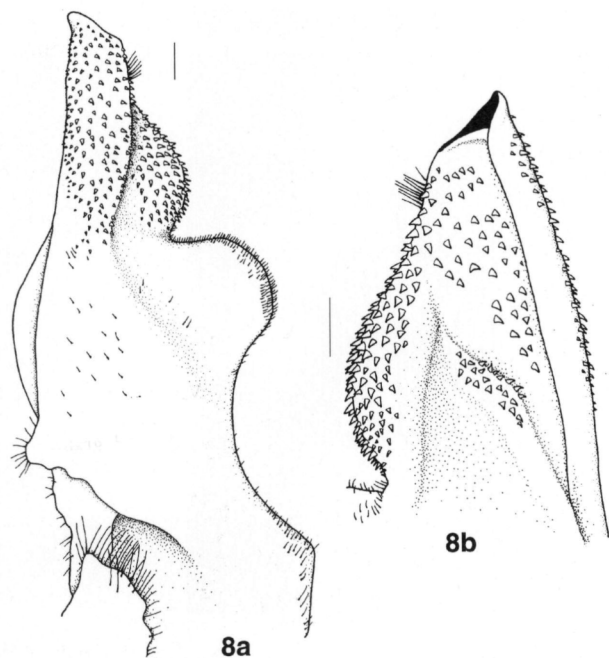


Fig. 7. *Melocarcinus meekei* (holotype, USNM 59345), dorsal and ventral aspect. — Scale 20 mm.



- Male plp 1 with a very faint subdistal lobe, subterminal spine fields well separated in a distoproximal direction, only occupying distal third of the appendage ..... *S. piriformis*
- 4. Subdistal lobe evident, median patch of the subterminal spine field rather strong ..... *S. pictus*
- Subdistal lobe poorly developed, as is the median patch of the subterminal spine-field ..... *S. australis* n. sp.

*Sylviocarcinus devillei* H. MILNE-EDWARDS 1853

(Figs. 9-26)

1853 *Sylviocarcinus devillei* H. MILNE-EDWARDS, Ann. Sci. nat., (3)20: 215.

1869 *Sylviocarcinus peruvianus* A. MILNE-EDWARDS, Ann. Soc. entom. France, (4)9: 174.

Fig. 8. *Melocarcinus meekei* (holotype, USNM 59345), left male plp 1. — a) Whole limb, ventro-mesial aspect; b) tip, dorso-lateral aspect. — Scales 1 mm.