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Two new species of terrestrial Isopoda from southern Brazil

(Crustacea, Isopoda, Oniscidea)

By Paula Beatriz de Araujo and Ludwig Buckup

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In samples of terrestrial isopods from southern Brazil, two species were recognized as new: *Benthana taeniata*, spec. nov. (Philosciidae) and *Phallonicus meridionalis*, spec. nov. (Oniscidae). The species are described and illustrated, and a map with the geographical distribution is given.

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Introduction

Most of the studies on the Oniscidean fauna from southern Brazil come from the publications of Verhoeff (1941), Lemos de Castro (1958, 1976, 1985) and Andersson (1960). However, despite some records, new species were seldom described.

In 1991, as part of a general plan to study southern Brazilian terrestrial isopods (Araujo 1992), field surveys were carried out in Rio Grande do Sul and Santa Catarina States (between 26° S and 34° S), Brazil. From the identified species (Araujo & Buckup, in preparation), two were considered as new and are described in this paper: *Benthana taeniata* (Philosciidae) and *Phallonicus meridionalis* (Oniscidae).

The types are deposited at the Universidade Federal do Rio Grande do Sul (UFRGS), Instituto de Biociências, Departamento de Zoologia, Porto Alegre, RS, Brasil (see full address above). P. B. Araujo collected all material.

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Benthana taeniata, spec. nov.

(Figs 1–13, 28)

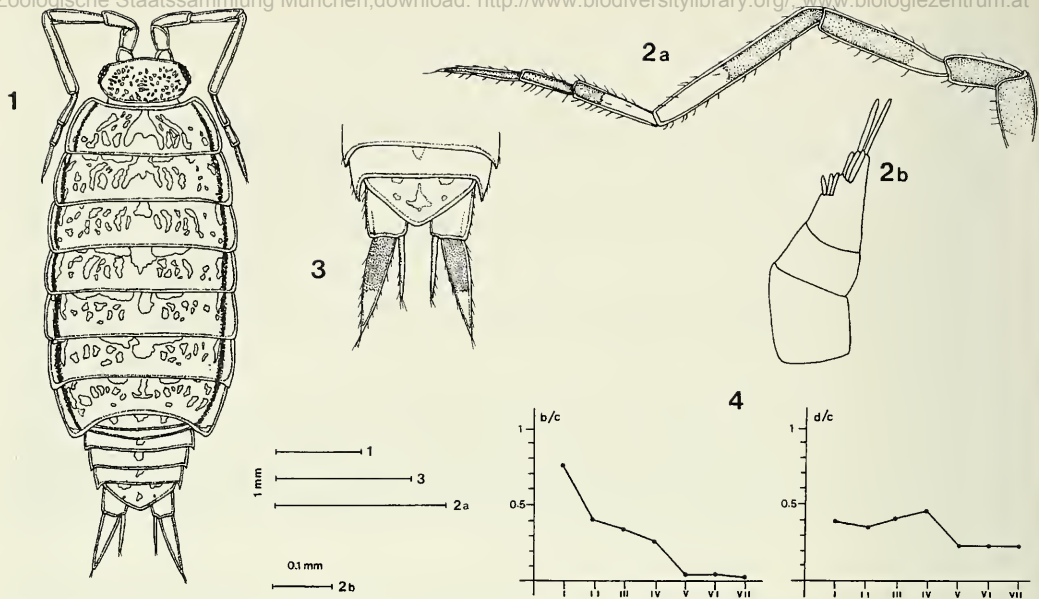
Types. Holotype. ♂, Brazil, Estado do Rio Grande do Sul, Estrela (29°29'S, 51°58'W), under leaves and wood, 26.XII.1991 (UFRGS 01510H). – Paratypes. 6♂♂, 2♀♀, 1 ovigerous ♀, same data (UFRGS 01510P).

Additional material. 4♂♂, 2♀♀, 4 ovigerous ♀♀, Estado de Santa Catarina, Papanduva, under wood, 17.V.1991 (UFRGS 01507). – 7♂♂, 8♀♀, 1 ovigerous ♀, Estado do Rio Grande do Sul, Estrela, under leaves and wood, 1.II.1991 (UFRGS 01508); 8♂♂, 9♀♀, 2 ovigerous ♀♀, Estrela, under leaves and wood, 18.XII.1991 (UFRGS 01509).

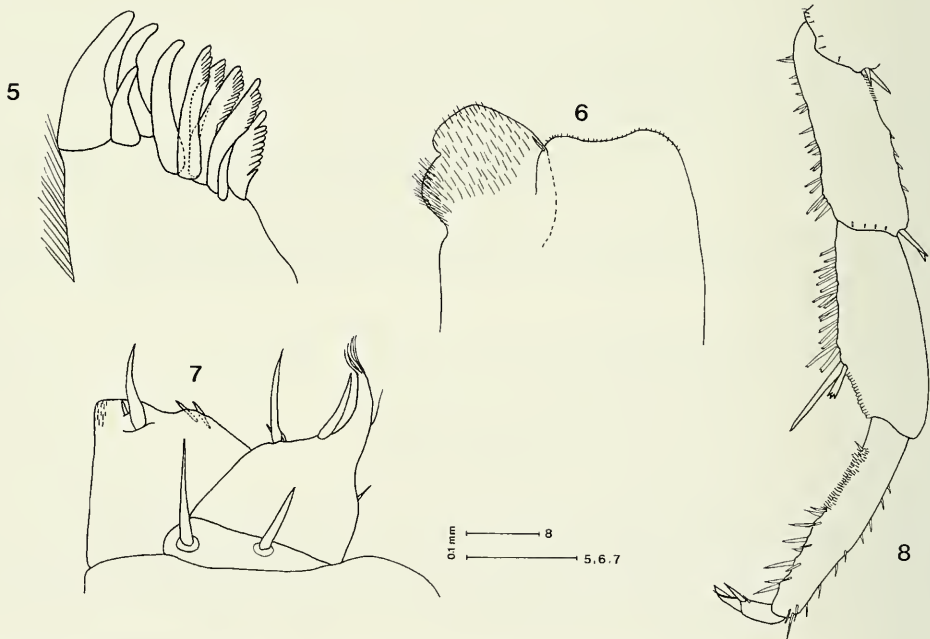
Description

Maximum dimensions. ♂: 8.26 × 2.69 mm; ♀: 10.56 × 3.75 mm.

Body outline as in Fig. 1. Dorsal surface light or dark-brown with yellow spots; dark stripes at the sub-lateral margins of pereonites. Proximal part of fourth and distal half of fifth joint of antennal peduncle whitish, as well as the proximal half of first flagellar segment (Fig. 2a); distal part of uropodal exopod whitish. Tegument smooth and brilliant with sparse tricornes. Co-ordinates of noduli laterales

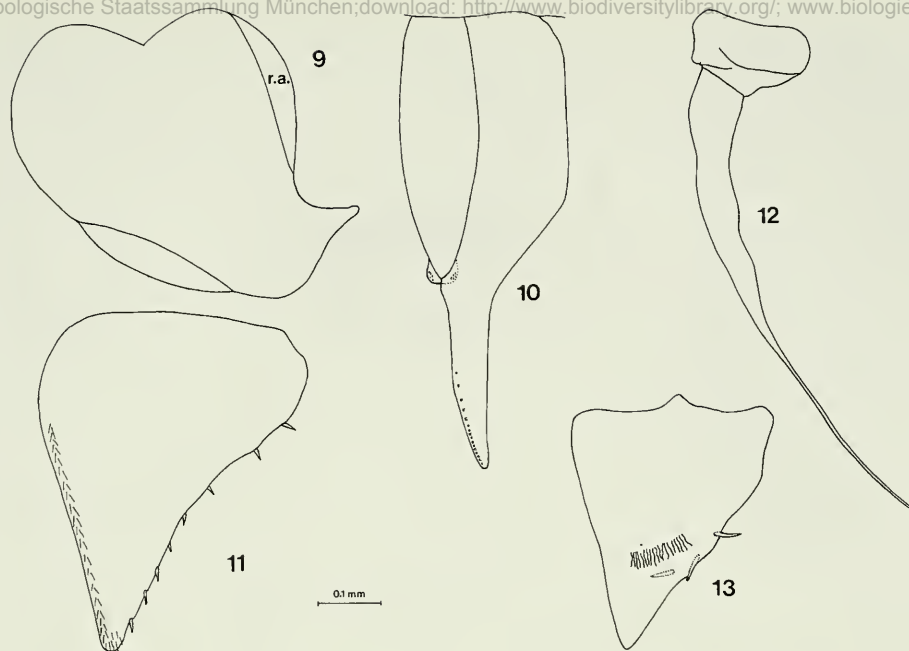


Figs 1-4. *Benthana taeniata*, spec. nov. 1. Adult ♂; 2a. antenna; 2b. antennula; 3. telson and uropods; 4. noduli laterales.



Figs 5-8. *Benthana taeniata*, spec. nov. 5. Maxillule; 6. maxilla; 7. maxilliped; 8. ♂ pereopod 1.

as in Fig. 4. Eyes with 17-19 ommatidia. Epimera of pleonites 3-5 visible in dorsal view. Telson with straight margins and obtuse apex. Distal article of antennule with eight grouped aesthetascs inserted in three different levels (Fig. 2b). Antenna when extended back reaching pereonite 6; second flagellar joint smallest. Maxillule (Fig. 5) with outer branch bearing 4 + 6 (5 pectinated) teeth. Margin of maxillar inner lobe (Fig. 6) with a shallow breach, defining a bilobated contour. Endit of maxilliped (Fig. 7) with



Figs 9-13. *Benthana taeniata*, spec. nov., ♂. 9. Pleopod 1 exopod, r.a. = respiratory area; 10. pleopod 1 endopod; 11. pleopod 2 exopod; 12. pleopod 2 endopod; 13. pleopod 5 exopod.

two medial teeth. Uropodal exopod and endopod inserted almost at the same level; endopod exceed the middle of the exopod (Fig. 3).

♂. Pereopod 1 (Fig. 8) with carpus and merus with short bristles. Pereopod 7 without any apparent modification. Pleopod 1 exopod (Fig. 9) cordiform with the inner lateral margin presenting a lobe; endopod (Fig. 10) with small granulations at the apical internal margin. Pleopod 2 exopod and endopod as in Figs. 11 and 12. Pleopod 5 exopod (Fig. 13) subtriangular with fine setae on the dorsal surface.

Distribution. Recorded at the localities of Papanduva (SC) and Estrela (RS) (Fig. 28).

Etymology. The name refers to the presence of a bilateral submarginal dark stripe.

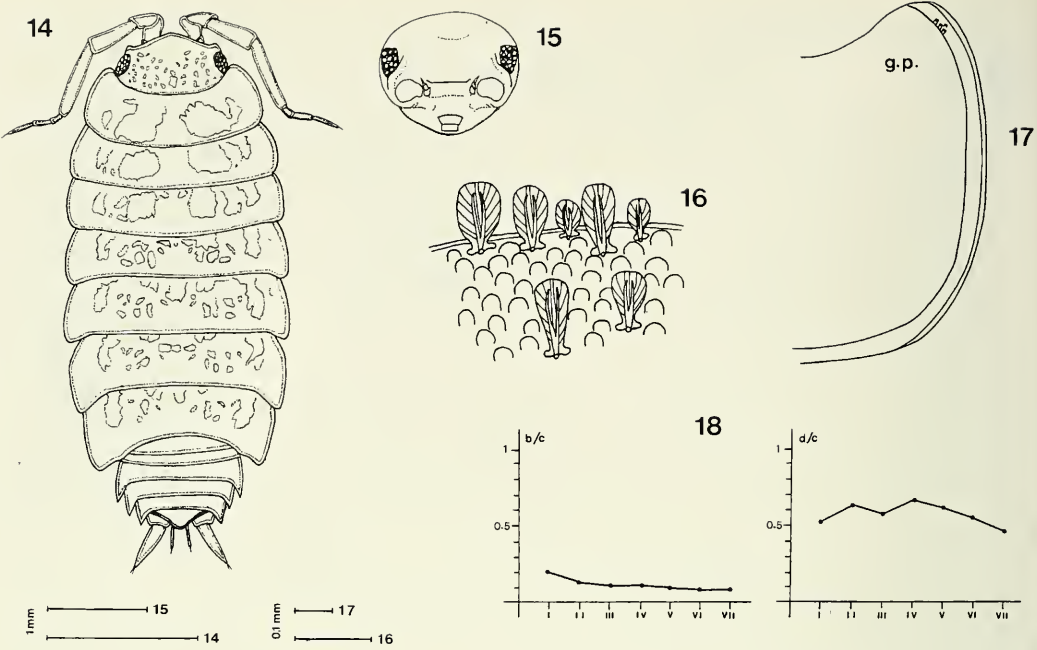
Remarks. The main distinguishing characteristics of *Benthana taeniata* are the coloration pattern of antenna and uropod, the bilateral submarginal dark stripes and the shape of ♂ pleopod 1 exopod. It is close to *B. olfersii* (Brandt, 1833) by the internal lobe of ♂ pleopod 1 exopod, but it is different in size (*B. olfersii*: 21 mm) and number of ommatidia (*B. olfersii*: 24). *B. taeniata* differs from *B. olfersii* also by the contour of its maxilla and the absence of a marginal lobe on the merus of pereopod 7.

Phallioniscus meridionalis, spec. nov.

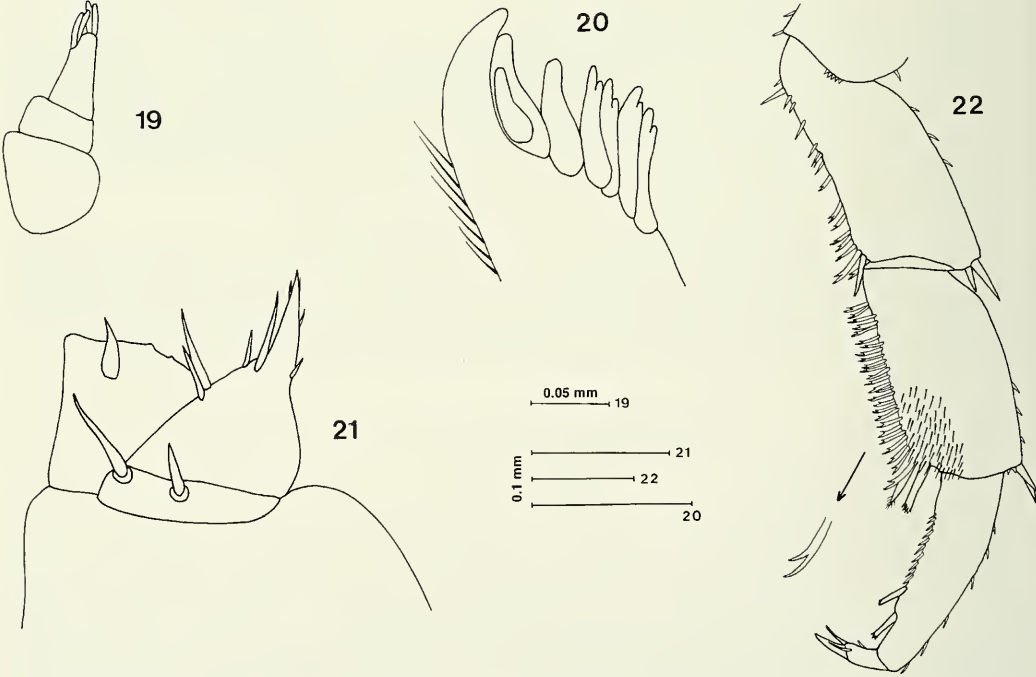
(Figs 14-27, 28)

Types. Holotype: ♂, Brazil, Estado do Rio Grande do Sul, São Borja (28°39'S; 56°00'W), under leaves, 4.II.1991 (UFRGS 01763H). - Paratypes: 6♂♂, 15♀♀, same data (UFRGS 01763P).

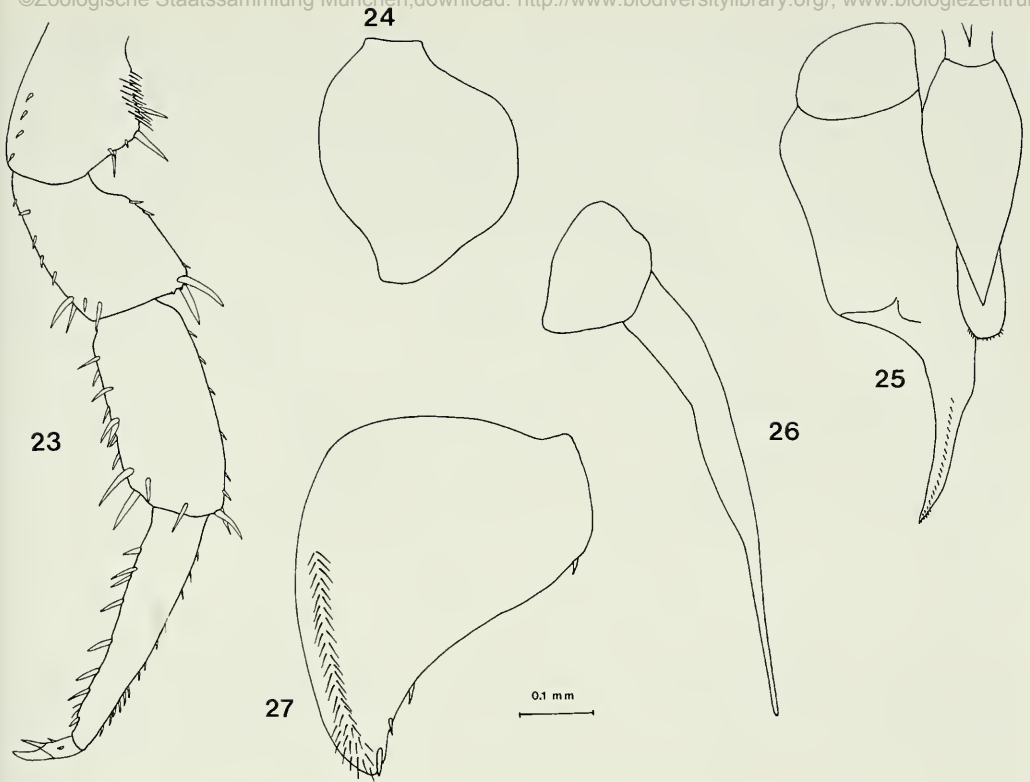
Additional material. Estado de Santa Catarina: 1♀, 1 ovigerous ♀, São Lourenço do Oeste, under leaves, stones and bricks, 20.I.1991 (UFRGS 01769); 1♂, 6♀♀ 1 ovigerous ♀ Mondai, under leaves of avocado tree, 21.I.1991 (UFRGS 01767); 1♂, 1♀, 1 ovigerous ♀, Nova Teutônia, forest near Museu Fritz Plaumann, under leaves, 23.I.1991 (UFRGS 01766); 12♂♂, 16♀♀, 5 youngs, 18.V.1991 (UFRGS 01768). - Estado do Rio Grande do Sul: 1♂, 3 ovigerous ♀♀, Derrubadas, Parque Estadual do Turvo, under leaves and wood, 22.II.1991 (UFRGS 01764); 2♂♂, 3♀♀, 1 ovigerous ♀, Iraí, forest near Balneário Municipal, 22.I.1991 (UFRGS 01762); 2♀♀, São Luiz Gonzaga, forest near the road, under leaves and wood, 4.II.1991 (UFRGS 01765); 3♂♂, 5♀♀, 2 ovigerous ♀♀, Estrela, under leaves and wood, 1.II.1991 (UFRGS 01761).



Figs 14-18. *Phallonicus meridionalis*, spec. nov. 14. Adult ♂; 15. head (frontal view); 16. scale-spines; 17. pereonite 1, g.p. = glandular pores; 18. noduli laterales.



Figs 19-22. *Phallonicus meridionalis*, spec. nov. 19. Antennule; 20. maxillule; 21. maxilliped; 22. ♂ pereopod 1.



Figs 23-27. *Phallonicus meridionalis*, spec. nov., ♂. 23. Pereopod 7; 24. pleopod 1 exopod; 25. pleopod 1 endopod; 26. pleopod 2 exopod; 27. pleopod 2 endopod.

Description

Maximum dimensions. ♂: 3.70 × 1.56 mm; ♀: 5.01 × 1.87 mm.

Body outline as in Fig. 14. Light or dark-brown pigment with five longitudinal dark bands (one median) alternated with four yellow ones. Head with the same pigment, characterized by the presence of yellow spots sometimes with a white area making up an inverted "U" interrupted at the middle; dark cephalic lobes. No frontal line; supra antennal line straight (Fig. 15). Surface smooth with semicircular plaques and covered by oblong striated scale-spines (Fig. 16). Antenna with plaques and tricornes. Four glandular pores on pereonite 1 (Fig. 17). Co-ordinates of noduli laterales in Fig. 18. Eyes with 10-12 ommatidia. Pereopods with simple and bifurcated bristles, spines and trichia. Distal article of the antennule with four aesthetascs (Fig. 19). Antenna when extended back reaching the posterior border of pereonite 2; distal flagellar article longest. Mandibles with compound molar penicil + two (right) and three (left) penicils. Maxillule (Fig. 20) with outer branch bearing 4 + 4 (4 cleft) teeth. Maxilliped (Fig. 21): endite with 2 small teeth and inner margin slightly sinuous. Pleopods with an undifferentiated respiratory area.

♂. Pereopod 1 (Fig. 22) bearing a brush of bifurcated spines on merus and carpus. Pereopod 7 without any apparent modification. Pleopod 1 exopod (Fig. 24) with two lateral expansions; endopod (Fig. 25) with the proximal half strong and the distal one bent outwards; apex with small spines. Pleopod 2 exopod and endopod as in Figs. 26 and 27.

Distribution. Estado de Santa Catarina and Estado do Rio Grande do Sul, Brazil (Fig. 28).

Etymology. The name refers to the meridional area, where the specimens were collected.

Remarks. This species appears close to *Phallonicus marcuzzi* Vandel, 1952 because of the absence of frontal line, similar scale-spines and pereopod 1 bearing a brush of bifurcated spines. However, it is

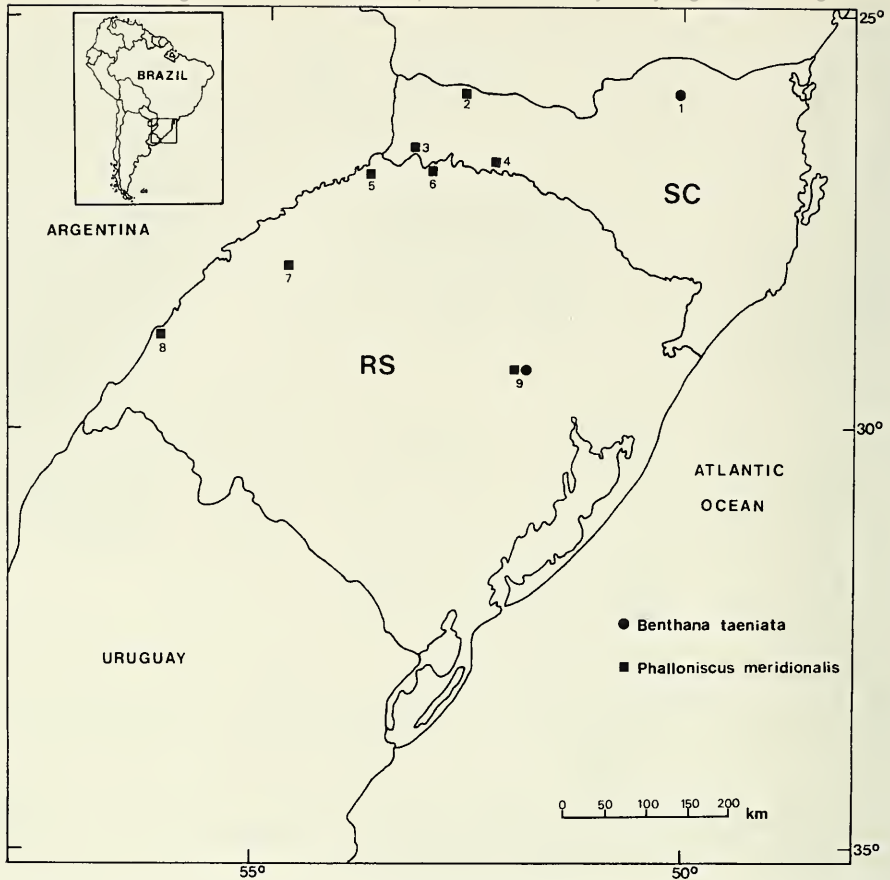


Fig. 28. Records of *Benthana taeniata*, spec. nov. and *Phallonicus meridionalis*, spec. nov. in Southern Brazil. Estado de Santa Catarina (SC): 1. Papanduva; 2. São Lourenço do Oeste; 3. Mondai; 4. Nova Teutônia. - Estado do Rio Grande do Sul (RS): 5. Derrubadas; 6. Iraí; 7. São Luiz Gonzaga; 8. São Borja; 9. Estrela.

distinguished by the semicircular shape of the plaques (elliptic in *P. marcuzzi*), maxilla with 4 cleft teeth (3 in *P. marcuzzi*), absence of an obtuse tooth on the maxilliped endite, and the shape of ♂ pleopod 1 exopod. It differs from *P. vandeli* Lemos de Castro, 1960, by its 10-12 ommatidia (8 in *P. vandeli*), its telson without strong concave margins, its maxillula with 4 cleft teeth (2 in *P. vandeli*), its sexual dimorphism of pereopods and by the shape of ♂ pleopod 1 exopod.

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