

Papéis Avulsos de Zoologia

MUSEU DE ZOOLOGIA DA UNIVERSIDADE DE SÃO PAULO

ISSN 0031-1049

PAPÉIS AVULSOS DE ZOOL., S. PAULO 40(5): 105 - 112

12.XII.1997

REDESCRIPTION OF *RHYSOTUS ALBIDEMACULATUS* BUDDÉ-LUND, 1908 (CRUSTACEA, ISOPODA, ONISCIDEA)

LEILA APARECIDA SOUZA KURY

ABSTRACT

A second specimen of Rhyscotus albidemaculatus Budde-Lund, 1908, hitherto known from Brazil, Rio de Janeiro, is reported from a cave in Bahia state. A detailed redescription, including illustrations of several morphological structures is provided. This is the first record of the family Rhyscotidae in a cave environment.

Keywords: Crustacea, Isopoda, Oniscidae, *Rhyscotus albidemaculatus*, redescription.

INTRODUCTION

During the identification of woodlice material collected in Brazilian caves, a single specimen of Rhyscotidae was found. Members of this family are easily recognized by the cephalic protrusion, unique among Oniscidea.

The occurrence of this species in the Bahia state is noteworthy, since the single previous record of the family Rhyscotidae in Brazil was done by Budde-Lund (1908) from Rio de Janeiro. This author described the species as *Rhyscotus albidemaculatus* (cf. Budde-Lund, *op. cit.*). His original description includes information on size, number of ommatidia, tegument, overall morphology, color, and an illustration of the telson.

Departamento de Zoologia, Instituto de Biociências da Universidade de São Paulo, C.P. 11461, São Paulo, SP, 05422-970 Brasil.

Recebido para publicação em 19.V.1995 e aceito em 03.III.1997.

The specimen examined in this study agrees with the characters cited by Budde-Lund, and it is here identified as *Rhyscotus albidemaculatus*. The present paper provides a detailed redescription of this species, which includes illustrations of several morphological structures

***Rhyscotus albidemaculatus* Budde-Lund, 1908**

Rhyscotus albidemaculatus Budde-Lund, 1908: 302, fig 46; Arcangeli, 1930: 31; van Name, 1936: 272, fig 150; Arcangeli, 1950: 19.

Type material. Holotype (Oxford Museum), not examined.

Type locality. Rio de Janeiro, Brazil.

Material examined. 1 specimen (MZUSP 12.172) Brazil, Bahia state, Itaetê, Gruta do Bode (12°56'S 41°04'W), 4 September 1991, leg. Eleonora Trajano.

Diagnosis. Tegument covered by minute scale spines. Eyes with 16 ommatidia. Basal article of antennal flagellum about as long as distal article. Epistoma globular, separated from the frons by a substraight shallow groove. Pereonites I-III with posterior border strongly curved, posterior angles rounded. Pereonites IV-V with posterior border and posterior angles substraight. Pereonites VI-VII with posterior border curved in the middle and posterior angles acute. Telson short, triangular, with sides strongly concave and apex acute. General color brown, with elliptic light yellow spots near the posterior angles of pereonites.

Remarks. *R. albidemaculatus* is most similar to *R. sphaerocephalus* Budde-Lund, 1913 and *R. nasutus* Budde-Lund, 1908 in the shape of telson longer than wide, contrasting with species like *R. jacksoni* Arcangeli, 1930, *R. rotundatus* Schmalfuß & Ferrara, 1978 and *R. texensis* (Richardson, 1905), which have the telson much wider than long. It can be distinguished furthermore from all other species of *Rhyscotus* by the tegumentary cover of scale-spines, shape of telson and the lighter spots on pereonites. Mouth parts are undescribed for the majority of Rhyscotidae.

Measurements (in mm). Body 5.5 long, from anterior tip of frontal protuberance to apex of uropodal exopods in ventral view. Maximal width 2.2 at pereonite VI. Pereonites II to VI of about same width. Frontal protuberance 0.4 long from anterior part to inferior limit, in ventral view; 0.22 long in dorsal view. Vertex of head 0.44 long. Uropodal protopod 0.21, exopod 0.47, endopod 0.21 in dorsal view. Uropodal protopod 0.25, exopod 0.63 (with bristles), endopod 0.32 (with bristles), in ventral view, where insertion of endopod can be seen. Telson 0.24 long. Head 0.63 long, 1.26 wide (without protuberance). Eyes 0.32 long at longest axis.

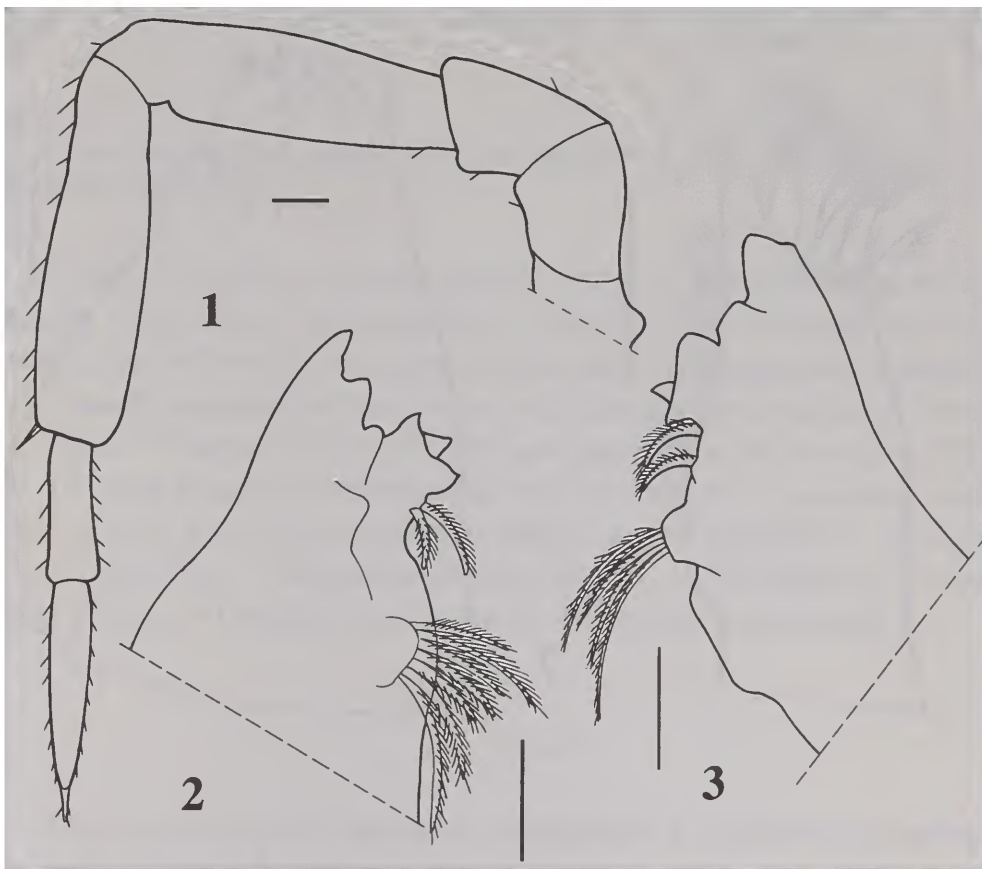
Color (in alcohol). Head, pleon, telson, 4th and 5th articles of antennal peduncle uniform dark brown. Basal article of antennal flagellum and 1st-3rd articles of peduncle unpigmented. Pereon brown, with light yellow symmetric spots on medio-lateral parts of pereonites II-VI, less evident on pereonite VII, also on middle of lateral borders of pereonites II-III and posterior borders of pereonites IV-VII. Uropods unpigmented, except for posterior part of exopods. Eyes black. Venter with lighter color. Pereopod only with vestigial pigmentation, especially on basis. Cephalic protuberance with concentric pigmented lines.

Cephalon. Head large (measurements above), with well developed eyes. Tegument thickened at inferior limit of protuberance, forming a ridge.

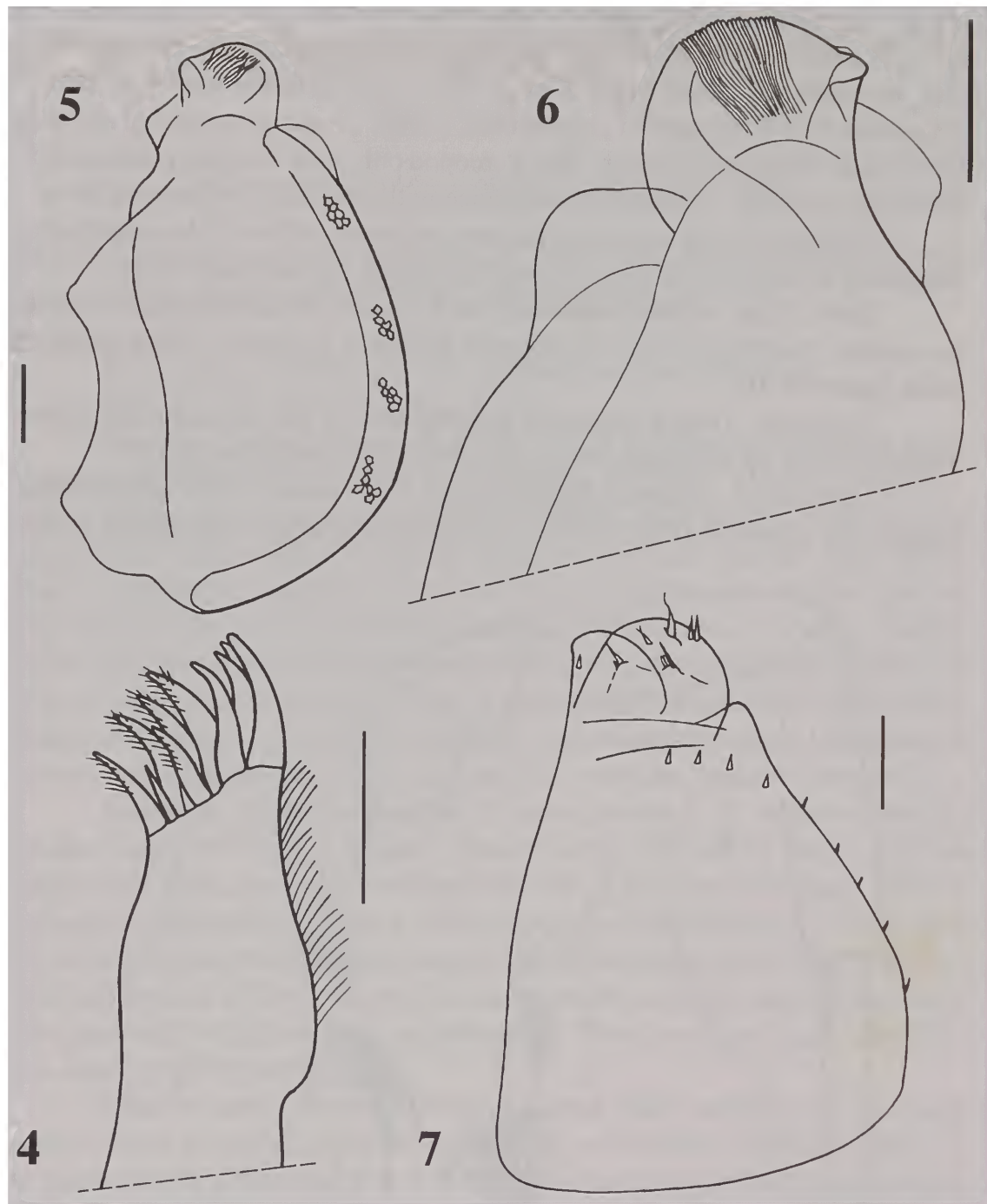
Body. Pleon outline continuous with pereon. Telson triangular, formed by a point, extending to limit of uropodal protopod. Antennae, when stretched, reach pereonite III.

Tegument. Dorsal tegument smooth, except for minute scale spines. Simple bristles on antennae. Pereopods with undivided spines only.

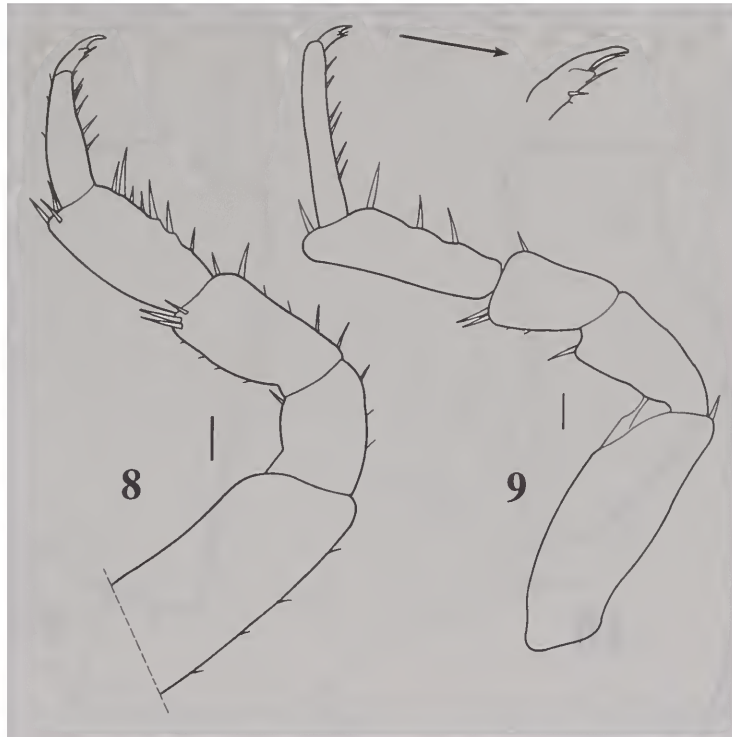
Appendages. Antennal flagellum (Fig. 1) formed by two joints, the distal longer. Left mandible (Fig. 2) with 7 penicils on molar process; right mandible



Figs. 1-3. *Rhyscotus albidemaculatus* Budde-Lund (MZUSP 12.172). 1. Antenna; 2. Left mandible; 3. Right mandible. Scale bars = 0.1 mm.



Figs. 4-7. *Rhyscotus albidemaculatus* Budde-Lund (MZUSP 12.172). 4. Exite of maxillula; 5. Maxilla; 6. Maxilla, detail of apical part; 7. Maxilliped. Scale bars = 0.1 mm.

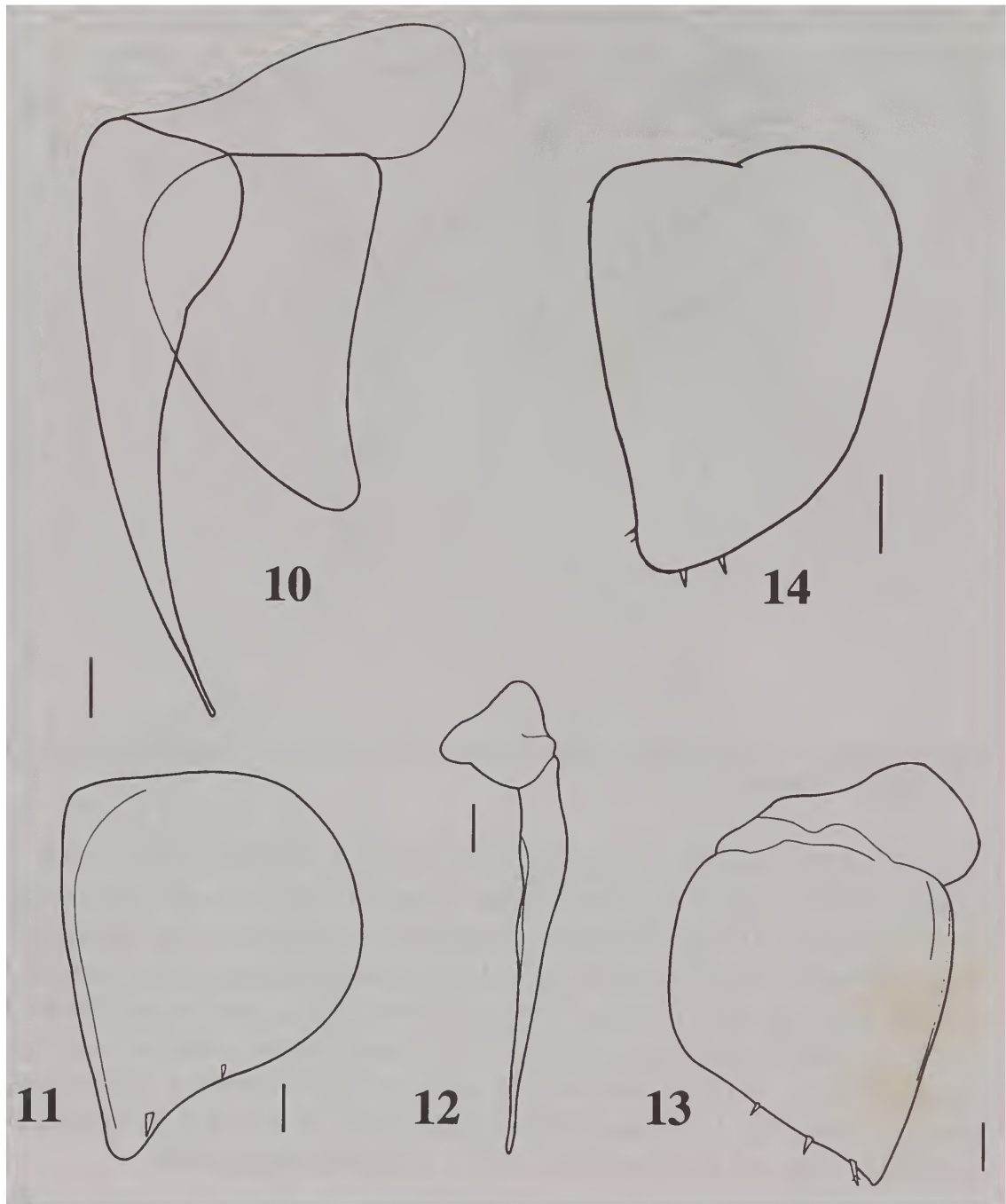


Figs. 8-9. *Rhyscotus albidemaculatus* Budde-Lund (MZUSP 12.172). 8. Pereopod I; 9. Pereopod VII. Scale bar = 1.0 mm.

(Fig. 3) with 4 penicils on molar process. Exite of maxillula (Fig. 4) with 4 (glabrous) + 6 (5 hairy + 1 glabrous) teeth. Maxilla (Figs. 5-6) with semicircular projection formed by rigid tegument, constituted of hexagonal cells. Maxilliped (Fig. 7) broadly expanded at base, palpus with discrete groups of setae. Pereopod I as in Fig 8. Pereopod VII (Fig. 9) with propodus longer than carpus. Pleopod I (Fig. 10) with exopod semitriangular, with rounded apex; endopod tapering. Pleopod II (Fig. 11) with exopod very large, exopod featureless. Endopod of pleopod II as in Fig. 12. Exopod of pleopod III (Fig. 13) similar to II. Exopod of pleopod V (Fig. 14) smaller than II and III. Pleopodal lungs absent.

DISCUSSION

The material studied has been identified as *R. albidemaculatus* mainly on the basis of the light spots on the edge of pereonites and shape of telson, although no positive striking diagnostic feature is stated in the original description. Little is known on the degree of endemism of species of *Rhyscotus*



Figs. 10-14. *Rhyscotus albidemaculatus* Budde-Lund (MZUSP 12.172). 10. Endopod and exopod of pleopod I; 11. Exopod of pleopod II; 12. Endopod of pleopod II; 13. Exopod of pleopod III; 14. Exopod of pleopod V. Scale bars = 0.1 mm.

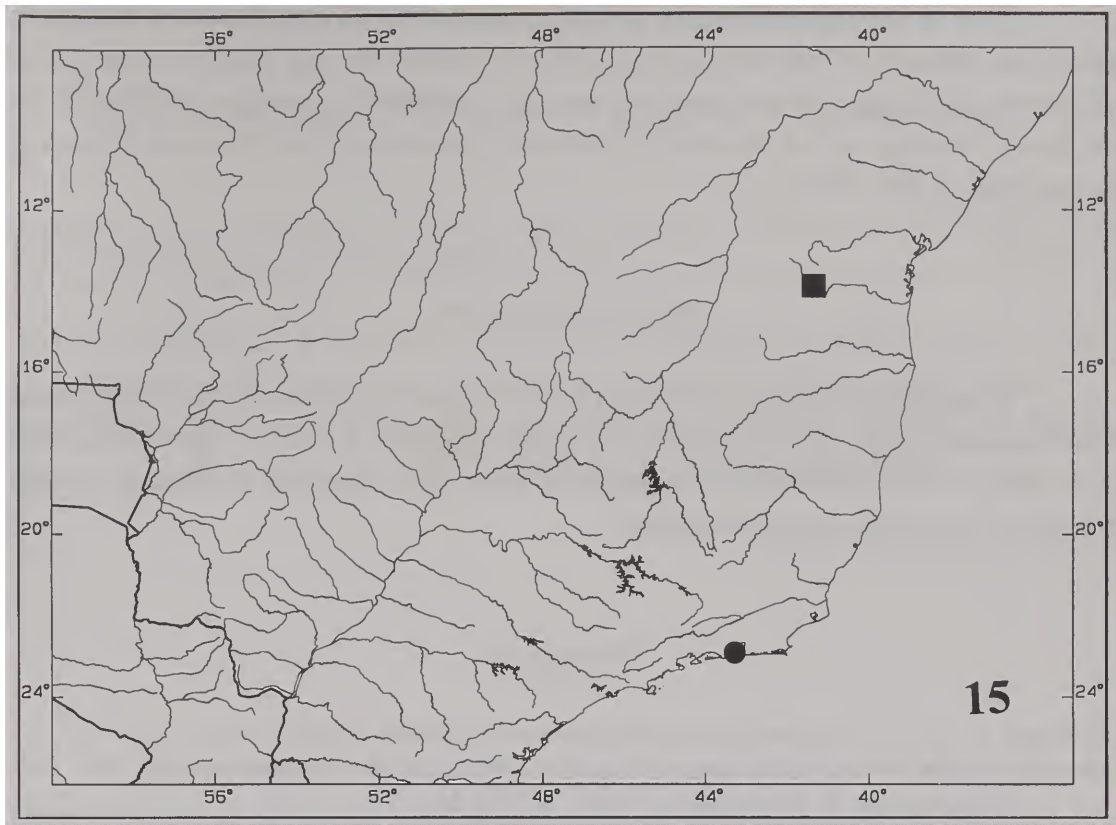


Fig. 15. Eastern Brazil, showing records of *Rhyscotus albidemaculatus*. Black circle is Budde-Lund's record, black square is present record.

in the Neotropics, but the new record considerably expanded Northwards the known range of the species (see map in Fig. 15). While Rio de Janeiro is located in the core of the Ab'Saber's (1977) Tropical Atlantic Domain, the Gruta do Bode lies in a transitional area between this and the Caatinga Domain (an open formation).

Since the description of *R. albidemaculatus* by Budde-Lund, a second genus has been recognized in the family - *Rhyscotoides* Arcangeli, 1950. Among the differences recorded in the literature that distinguish them, and using the other Crinocheta as outgroup for comparison, the vesicle in the dactylus of pereopods may be regarded as synapomorphic for the species of *Rhyscotoides*, while the complete absence of pleopodal endopods III-V may be regarded as a synapomorphy for the species of *Rhyscotus*.

The Rhyscotidae represent a peculiar group regarding biology, ecology and morphology. Their species are protandric hermaphrodites, living in bromeliad sheaths. These isopods possess a bulbous protuberance on the head in which muscles are inserted. This structure, combined with special bucal devices makes possible the suction of living vegetable matter.

This is the first record of a rhyscotid from a cave. However, it comes from the entrance of the cave, and as other members of the family occur in the above cited habitats, this occurrence may be classified as accidental. The Gruta do Bode belongs to the Bambuí Carbonatic Speleological Province (Catalog under SBE is BA-BOD).

ACKNOWLEDGMENTS

Many thanks are due to Prof. Dr. E. Trajano (Instituto de Biociências da Universidade de São Paulo) for providing the specimen for study. The scholarship # 91/4991-0 from FAPESP (Fundação de Amparo à Pesquisa do Estado de São Paulo) is gratefully acknowledged.

REFERENCES

- Ab'Saber, A. N., 1977. Os domínios morfoclimáticos na América do Sul. *Geomorf.*, 41: 1-21.
- Arcangeli, A., 1930. Due nuove specie del genere "*Rhyscotus*" B-L. Isopodi terrestri. *Boll. Lab. Zool. gen. agr. R. Scuola Agric. Portici*, 25: 330-38.
- Arcangeli, A., 1950. La famiglia Rhyscotidae. Crostacei Isopodi terrestri. *Boll. Ist. Mus. Zool. Univ. Torino* 2(1): 5-36.
- Budde-Lund, G. 1908. Isopoda von Madagaskar und Ostafrika mit Diagnosen verwandter Arten. In: A. Voeltzkow, Reise in Ostafrika in dem Jahre 1903-1905, *Wiss. Ergebn. II Syst. Arb. Stuttgart*, 2(4): 263-308, pr. 12-18.
- Name, W. G. van, 1936. The American land and fresh-water isopod Crustacea. *Bull. Amer. Mus. nat. Hist., New York*, 71: 1-535, 323 figs.



CRENCIAMENTO E APOIO FINANCEIRO DO PROGRAMA
DE APOIO AS PUBLICAÇÕES CIENTÍFICAS PERIÓDICAS DA USP
COMISSÃO DE CRENCIAMENTO