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DESCRIPTION OF SOME UNKNOWN PHYTOSEIID MITES FROM BRAZIL (MESOSTIGMATA : PHYTOSEIIDAE)*

BY

E. M. EL-BANHAWY

During the last decade, an increasing attention was given to studies on phytoseiids and particularly their taxonomy, since members of the family would be useful in the biological control of the acarine pests (HUFFAKER et al. 1970). The most interesting works from South America are those of CHANT, 1959 ; SHEALS, 1962 ; ATHIAS-HENRIOT, 1967 from Argentina ; EHARA, 1966 ; DENMARK & MUMA, 1970, 1973 ; EL-BANHAWY, 1975 ; 1976 from Brazil ; DE LEON, 1966 from British Guyana ; DOSSE, 1958 ; GONZALEZ & SCHUSTER, 1962 from Chile ; DENMARK & MUMA, 1972 from Colombia ; CHANT, 1959 from Ecuador ; DENMARK & MUMA, 1970a from Paraguay and CHANT & BAKER, 1965 from Central America.

APPENDIX 1 : Measurements of the female dorsal and sublateral setae (μ).

<table>
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<th>Species</th>
<th>L1</th>
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<th>L3</th>
<th>L4</th>
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<th>L6</th>
<th>L7</th>
<th>L8</th>
<th>M1</th>
<th>M2</th>
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</table>

a- 4 specimens ; b- 10 specimens ; n- minute setae

The present work, however, describes 3 species new to genus *Amblyseius* Berlèse (CHANT, 1965 ; personal communication). Terminology of setae, organotaxy, insemination apparatus and legs chaetotaxy are those of GARMAN (1948) & NESBITT (1951), ATHIAS-HENRIOT (1975),

* This work was conducted as part of a program of research on the predacious mites of Brazil, under support of a National Research Council grant to Dr. E. M. EL-BANHAWY, dept. of Parasitology, inst. of Bio-medical Sciences, Sao Paulo Univ., Brazil.

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Wainstein (1973) and Evans (1963) respectively. Measurements of the dorsal setae (in microns) are based on the average of the available individuals (Appendix 1). Types and paratypes will be deposited in the deposit of Parasitology department.

Amblyseius gloreus sp. n.

FEMALE: (Plate 1, Figs. A-E). Fixed digit of chelicerae multidentate and movable bidentate (Fig. C). Dorsal shield sclerotized, reticulated, oval, bears 17 pairs of setae: 9L, 2M, 6D and measures 293 long and 194 wide. At least 7 pairs of solenostomes, 13 pairs of poroides distributed on dorsal shield; muscle marks (sigillotaxy) as shown in Fig. A. \( L_9 \) longer than other laterals and about twice the length of \( L_4, L_5, M_1, D_2, D_3, D_4, D_5 \) minute; \( D_6 \) short and \( M_4 \) much longer than \( D_1 \). Sublateral setae (\( S_1 & S_2 \)) of about equal length on sclerotized lateral extension of dorsal shield. Ectal shield sclerotized, reticulated and with 3 pairs of setae; fourth pair on sclerotized oval plates. Genital shield moderately sclerotized, reticulated and with a pair of setae. Ventrianal shield wider (110) than long (96), sclerotized, reticulated, with 3 pairs of preanal setae and a pair of pores (Fig. B). On integument around ventrianal shield, 3 pairs of setae and 2 pairs of metapodal plates and between ventrianal and genital shields are inserted 2 pairs of thin elongate plates. Peritremal shields wide, fused anteriorly with dorsal shield and with posterior sharp terminal (Fig. E). Peritremes reach the anterior margin of coxa I. Insemination apparatus with visible ductus major long (26), narrow bifid atrium (6), thick elongate cervix (16) broadening near succuscul (Fig. D). Legs without macrosetae. Chaetotaxy formula of genu II and III: 2-2/0, 2/0-1 and 1-2/0, 2/0-1 respectively.

MALE: (Figs. F-G). Measures 254 long and 162 wide. Ventrianal shield wider than long, sclerotized, reticulated, with 3 pairs of preanal setae and a pair of pores (Fig. F). Movable digit of chelicerae supported by spermatodactyle (Fig. G).

Relation to other species: This species is similar to \( A. \) canadensis Chant & Hansell (1971), particularly in the chaetotaxy of dorsal shield except \( L_9 \) which is minute and the shape of the insemination apparatus. It is unlike \( A. \) canadensis in the shape of ventrianal shield, number of ventrolateral setae, number of setae on genu II and III and absence of macrosetae on legs.


ALLOTYPE: Collected with the holotype.

PARATYPES: 6 females and 2 males, July 28, 1976, collected from the same place on the same host.

Amblyseius pederosus sp. n.

FEMALE: (Plate 2, Figs. A-F). Fixed digit of chelicerae multidentate and movable tridentate (Fig. C). Dorsal shield moderately sclerotized, reticulated laterally and between \( L_6 \) and \( D_5 \), suboval with slight constriction near the middle, bears 17 pairs of setae: 9L, 2M, 6D and measures 347 long and 222 wide (Fig. A). At least 5 pairs of solenostomes and 20 pairs of poroides distributed on dorsal shield; muscle marks (sigillotaxy) as shown in Fig. A. \( L_4, L_4 \) and \( D_4 \) subequal
Plate 1: *A. gloreus* sp. n.: A) Dorsal shield; B) Ventral surface; C) Chelicerae; D) Insemination apparatus; E) Peritremal shield; F) Ventrianal shield of male; G) Spermatodactyle.
Plate 2: *A. pederosus* sp. n.: A) Dorsal shield; B) Ventral surface; C) Chelicerae; D) Insemination apparatus; E) leg IV; F) Peritremal shield; G) Ventrianal shield of male; H) Spermatodactyle.
in length; \( L_9 \) serrated and twice the length of \( M_2 \); other dorsal shield short. Sublateral setae on lateral integument short and subequal in length. Sternal shield with anterior lateral projection, moderately sclerotized, smooth and with 3 pairs of setae; fourth pair on oval plates. Genital shield normal with a pair of setae. Ventrianal shield rectangular, with lateral margin slightly constricted across the level of anus, with slight striations, 3 pairs of preanal setae and a pair of crescentic pores (Fig. B). On integument around ventrianal shield, 4 pairs of setae, 2 pairs of metapodal plates and a thin fold inserted between ventrianal and genital shields. Peritremal shields fused anteriorly with dorsal shield, curved around coxa IV and with posterior terminal broad (Fig. F). Peritremes reach the level of \( D_1 \). Insemination apparatus with ductus major long, short atrium, thick cervix, narrow near atrium and very broad near succulus (Fig. D). Macrostomata present on genu I-IV and tibia and tarsus IV with sharp tip (Fig. 5). Chaetotaxy formula of genu II and III: 1-2/1, 2/1-0 and 1-0/1, 2/1-2 respectively.

MALE: (Fig. G-H). Measures 273 long and 188 wide. Ventrianal shield striated, with 3 preanal setae, a pair of crescentic pores and fused anteriorly with peritremal shields (Fig. G). Movable digit of chelicerae supported by spermatodactyle (Fig. H).

Relation to other species: This species is similar to A. shi Pritchard & Baker (1962) and A. ivoloina Blommers (1974). Macrosetae on leg IV distinctly differentiates it from the former, while the shape of ventrianal shield of both sexes, insemination apparatus and organotaxy distinguish it from the latter.


Allotype: Collected with the holotype.

Paratypes: 6 females, 2 males collected with the holotype.

Amblyseius marmoreus sp. n.

FEMALE: (Plate 3, Figs. A-F). Fixed digit of chelicerae multidentate and movable tridentate (Fig. C). Dorsal shield moderately sclerotized, with striations forming cells near the middle, bears 17 pairs of setae: 9L, 2M, 6D and measures 317 long and 163 wide (Fig. A). Four pairs of solenostomes and 10 pairs of poroids distributed on dorsal shield; muscle marks (sigillotaxy) as shown in Fig. A. \( L_1, L_2, L_3, L_4, L_5, L_6, M_2 \) and \( D_1 \) long and strongly serrated; remaining setae faintly serrated. \( L_1 \) equal \( D_1 \); \( L_3, L_4, L_6 \) and \( M_2 \) of about equal length, \( L_7 \) equal \( L_8 \) and \( L_9 \) very long; \( M_1, D_2, D_3 \) and \( D_4, D_5 \) of equal length. Sublateral setae on lateral integument; \( S_1 \) serrated twice the length of \( S_2 \). Sternal shield poorly sclerotized and with 3 pairs of setae; fourth pair free on integument. Genital shield normal with a pair of setae. Ventrianal shield longer (100) than wide (70) with lateral margin concave, 3 pairs of preanal setae and a pair of pores (Fig. B). On integument around ventrianal shield, 4 pairs of setae, the fourth serrated, a pair of metapodal plates and about 12 pairs of rounded small or minute sclerotized plates. Peritremal shields fused anteriorly with dorsal shield and with posterior transverse suture (Fig. F). Peritremes reach the level of \( D_1 \). Insemination apparatus with visible ductus major, swollen bifid atrium and thick cervix, constricted near succulus and measures 16 long (Fig. D). Macrostomata present on genu, tibia and tarsus IV; that on tibia relatively short (Fig. E). Chaetotaxy formula of genu II and III: 2-2/0, 2/0-1 and 1-2/1, 2/0-1 respectively.
PLATE 3: A. marmoreus sp. n.: A) Dorsal shield; B) Ventral surface; C) Chelicerae; D) Insemination apparatus; E) Leg IV; F) Peritremal shield; G) Ventrianal shield of male; H) Spermatodactyle.
MALE : (Figs. G-H). Measures 250 long and 185 wide. Ventrianal shield with 3 pairs of preanal setae and a pair of pores (Fig. G). Movable digit of chelicerae supported by conspicuous spermatodactyle (Fig. H).

Relation to other species : It can be distinguished from its nearest species *A. trichophilus* Blommers (Blommers, 1976) in the following:

1. — Ventrianal shield with a pair of pores.
2. — The fourth pair of ventrolateral setae serrated.
3. — Leg IV with stout macrosetae.
4. — Spermatodactyle distinctly different.

Holotype : 1 female from São Paulo, May 5, 1976 (E. M. El-Banhawy), on *Solaneum erian-theum*.

Allotype : Collected with the holotype.

Paratype : 10 females and 2 males, July 28, 1978, collected from the same place on the same host.

Acknowledgement

I would like to express my deep gratitude to Prof. Dr. Chant, dept. of Zoology, Univ. of Toronto, Canada, for his valuable suggestions. I also wish to thank Prof. Dr. Carlos Flechtman, dept. of Zoology, Univ. of São Paulo, Piracicaba, who lent me several specimens of *Amblyseius* mites from his collection, Prof. Dr. P. T. Artigas and Prof. Dr. Uriel F. Rocha, dept. of Parasitology, inst. of Biomedical Sciences, Univ. of São Paulo, for providing all the necessary equipments, Miss Eliana, V. P. for preparing the drawings and Mrs. Nadia-El-Banhawy for preparing the manuscript.

Abstract

The present work describes three new species of genus *Amblyseius* Berlese ; namely, *A. gloreus*, *A. pederosus* and *A. marmoreus*.

Résumé

Ce manuscrit décrit trois nouvelles espèces du genre *Amblyseius* Berlese : *A. gloreus*, *A. pederosus* and *A. marmoreus*.

References


