

**New records of the millipede *Myrmecodesmus hastatus*
(SCHUBART, 1945) in Amazonia of Brazil (Diplopoda:
Polydesmida: Pyrgodesmidae)**

by

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Abstract

The widespread South American millipede *Myrmecodesmus hastatus* (SCHUBART, 1945) is recorded in the Brazilian states of Amazonas and Amapá for the first time. Illustrations are provided to facilitate species recognition.

Keywords: **Diplopoda, *Myrmecodesmus hastatus*, new records, Amazonas, Amapá.**

Resumo

O diplópodo *Myrmecodesmus hastatus* (SCHUBART, 1945), extensamente distribuído na América do Sul, é pela primeira vez documentado nos estados do Amazonas e do Amapá. Para facilitar o reconhecimento da espécie foram incluídas ilustrações.

Although the millipede fauna of Amazonia has recently been reviewed, with special reference to that of the environs of Manaus (HOFFMAN et al. 2002), the list has since increased with the discovery of *Poratia insularis* (KRAUS, 1960) both near Manaus and in Amapá state (BERGHOLZ et al. 2005). The present paper puts on record still one more diplopod new to these areas of Brazilian Amazonia. This species is *Myrmecodesmus hastatus* (SCHUBART, 1945), the most widespread among the few South American congeners (GOLOVATCH & ADIS 2004). The map shows the current distribution of *M. hastatus*, both asterisks indicating the new records. Samples will be deposited in the Invertebrate Collection of the Instituto Nacional de Pesquisas da Amazônia, Manaus (INPA), with only one specimen to be retained in Collection J. ADIS (CA).

Most of a total of 41 specimens (15 males, 14 females (both 20-segmented), 12 immatures; see Table) were detected chiefly between March and May, i.e. during the rainy season (cf. RIBEIRO & ADIS 1984), in rotting stems and leaves on the ground in a banana plantation (*Musa* sp.; Musaceae) on uplands north of Manaus.

Superficially *M. hastatus* shows no remarkable morphological traits like a plastron

(spiracles covered with a cerotegument) that would enable this species to survive a long-term immersion into water, a feature revealed in the subadults of its congener *M. adisi* (HOFFMAN, 1985) restricted to a blackwater inundation forest patch near Manaus (ADIS et al. 2003). However, the surprisingly vast distribution over South America alone suggests certain peculiar ecological adaptations. These imply clear-cut inclinations of *M. hastatus* to dwelling in open habitats, often if not always in association with ants and/or termites (GOLOVATCH & ADIS 2004). Formi- and termiticoly are further reinforced by its pronounced anthropochorism. Other possible ways of distribution could have been (1) introduction with seeds of oil palms imported from upper Amazonia around Iquitos/Peru that were used to build up local plantations of the African oil palm, *Elaeis guineensis* JACQ. (Arecaceae), in Amapá state; (2) introduction with banana plants throughout Brazil.

The most probable origin area of this species seems to have lain in western Amazonia within Peru, i.e. closer to the epicenter of generic diversity (GOLOVATCH & ADIS 2004).

To facilitate recognition, SEM micrographs illustrate the main morphological characters, first of all tergal and gonopod structure (Figs. 1-10).

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References

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Table 1: *Myrmecodesmus hastatus* (1) monitored in May-October 2002 (fortnightly) and March-September 2003 (monthly) in rotten stems and leaves in a banana plantation (*Musa* sp.; Musaceae) on uplands north of Manaus, Amazonas/Brazil (leg. N.G.R. BERGHOLZ) and (2) collected in June 2002 from decaying seeds in an African palm tree plantation (*Elaeis guineensis* JACQ.; Arecaceae) on uplands north of Macapá, Amapá/Brazil (leg. E.L. OLIVEIRA).

| Amazonas | Adults (males/females) | | Immatures | Sum | (%) |
|--------------|------------------------|----------------|-----------|-----------|----------------|
| May 2002 | 6 | (3/3) | 2 | 8 | (21.0) |
| March 2003 | 6 | (4/2) | 3 | 9 | (23.7) |
| April 2003 | 0 | | 2 | 2 | (5.3) |
| May 2003 | 14 | (7/7) | 2 | 16 | (42.1) |
| June 2003 | 0 | | 1 | 1 | (2.6) |
| Sept. 2003 | 2 | (0/2) | 0 | 2 | (5.3) |
| Subtotal | 28 | (14/14) | 10 | 38 | (100.0) |
| Amapá | | | | | |
| June 2002 | 1 | (1/0) | 2 | 3 | |
| Total | 29 | (15/14) | 12 | 41 | |

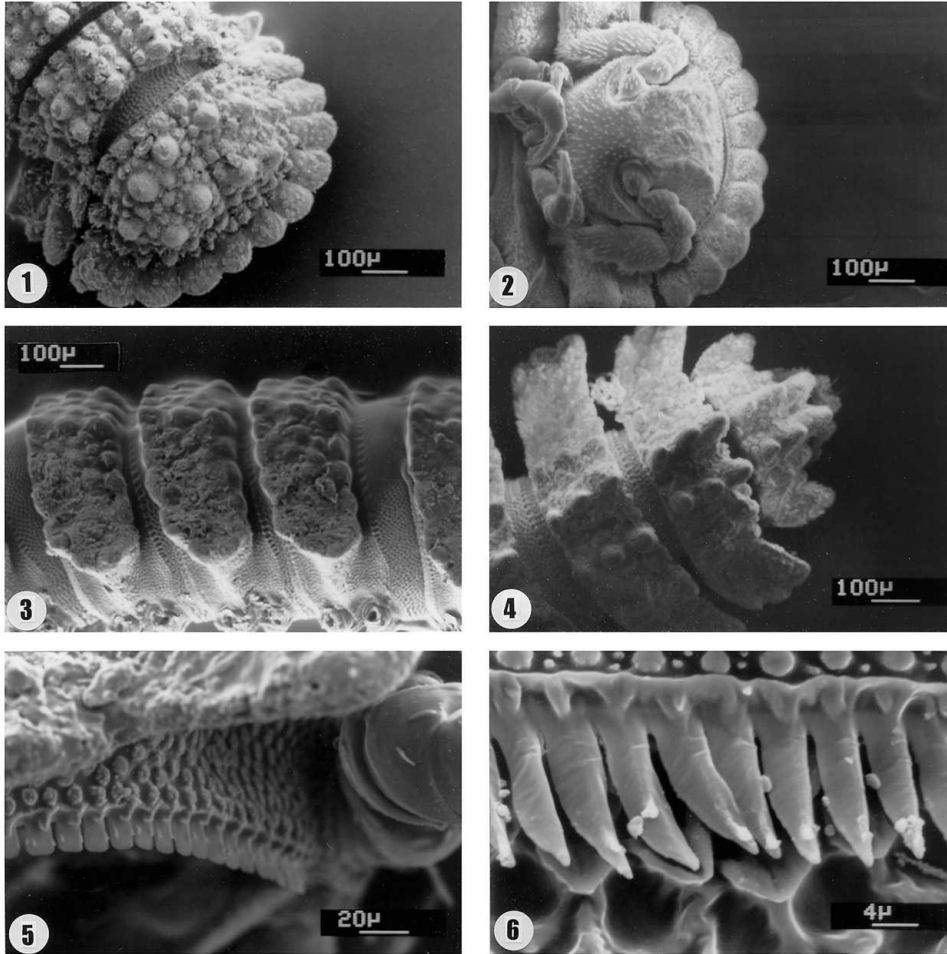


Map:

Distribution of *Myrmecodesmus hastatus*, asterisks standing for the new localities involved:

Amazonas state, Manaus region: Banana plantation (02°53'S, 59°59'W) of Embrapa at km 30 on the Manaus-Itacoatiara highway AM-010;

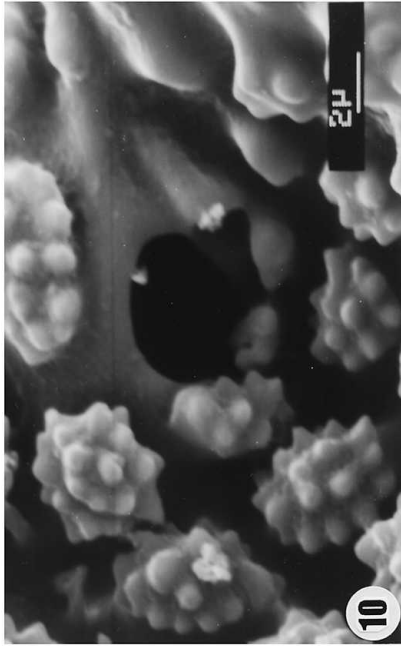
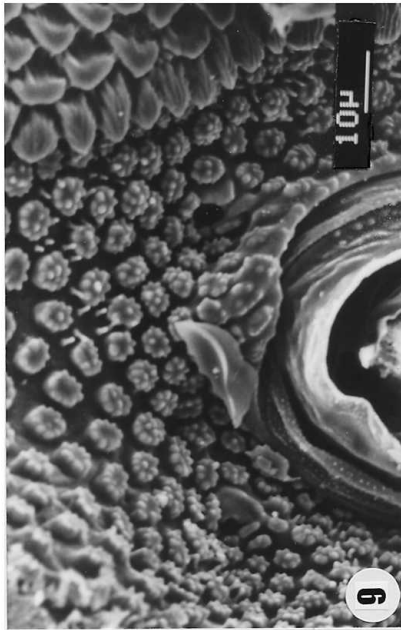
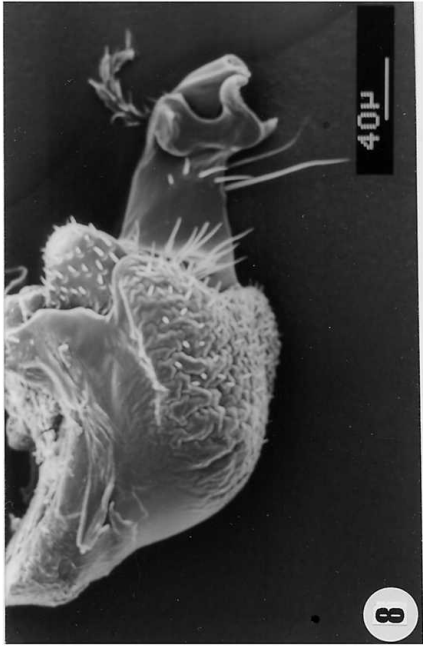
Amapá state: Palm plantation (0°38'N, 51°18'W) at km 90 on BR-156 highway.



Figs. 1-6:

Structural details of *Myrmecodesmus hastatus*, adult female (1, 3), adult male (2, 4, 5) and subadult female (6):

1: Collum, dorsal; 2: head and anterior edge of collum, ventral; 3: midbody segments, lateral; 4: caudal body end, dorsal; 5 & 6: limbus of midbody segments.



Figs. 7-10: Structural details of *Myrmecodesmus hastatus*, adult male (7, 8), subadult female (9) and adult female (10): 7 & 8: Left gonopod, subventral and ventral, respectively; 9 & 10: spiracle region (cerotegument missing).

