A second species of the genus *Sturmius* BRETFIELD, 1994: *Sturmius truncivivus* n.sp. from Brazil (Insecta, Collembola, Symphypleona)

by

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Abstract

From Manaus, Brazil, AM, *Sturmius truncivivus* n.sp. is described. It is the second species of this remarkable genus, which is known from Colombia and shows an unusual combination of characteristics. This new species lives on trees, as does the type species, but has not been collected from epiphytes but by trunk traps.

Keywords: Collembola, Symphypleona, tree trunks, floodplains, Neotropics, Brazil.

Resumo

Descreve-se a espécie *Sturmius truncivivus* n.sp., de Manaus, Brazil, AM. Esta é a segunda espécie deste gênero notável, o qual é conhecido da Colômbia, e mostra uma combinação de características incomuns. Esta nova espécie vive em árvores, como a espécie tipo, não foi coletada em epífitas mas sim por armadilhas de tronco.

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Introduction

During his stay in Manaus from 1989-1991, the senior author mainly studied the ecology of the Colomboia in the soils of the inundation forests (GAUER 1995, 1997). But some tree traps were also put up, i.e. traps for sampling small arthropods running on the stems. In these tree traps a new species of Sturmius BRETFELD, 1994 was found, which is described here.

The nomenclature and the presentation follow the previous papers of the senior author. The holotype and the majority of the paratypes have been deposited at the Instituto Nacional de Pesquisas da Amazônia, Manaus, Brazil (INPA), other paratypes at the Senckenberg Museum, Frankfurt/Main, Germany (SMF) and in the senior author’s collection.

Description

**Sturmius trunciavis n.sp.**


Derivation nominis: This new species is named after its habitat, the surface of trunks of living trees.

Diagnosis: A light colored species of the genus Sturmius BRETFELD, 1994 with 4 diagnostic characteristics:
- Brown-violet pigment mainly in a horizontal band on large abdomen,
- the 2+2 spines dorsal to bothriotrichia A+A short and blunt,
- appendices anales of the female basally thickened,
- empoedia not exceeding claws.

Description: Mainly the differences to the type species are mentioned (the characteristics of the type species are added in brackets).

Measurements and proportions, from 4 females and 3 males: Total female up to 0.5 mm, male up to 0.35 mm (type species: both larger); head in female 0.23 mm, in male 0.16 mm (type species: both larger); macro in female 75 mm (within the variation of type species), in male not measured; appendices anales 37 mm (within the variation of type species). Whole antenna: head length = 1.8-2.0 in female (type species: slightly smaller), 1.9 in male (same as in type species); antennal segment I:II:III:IV = 1:1.8.3.2 in female (type species: smaller), 1:1.6-2.6 in male (same as in type species but ratio of segment IV larger); macro: densmannubrium = 1.1:6.1 in female, 1:1:7.1 in male (type species: both smaller); appendices anales-claw III inner edge = 1.6 (type species: smaller); macro-claw III inner edge = 3.3 in female (type species: smaller), male not measured; spp. an.macro = 0.5 (same as in type species).

Colour: The eye-patches are deep black; the background colour is yellowish and shows a pattern of brown-violet to black pigment: The head is pigmented below the eye-patches in darker specimens, in lighter ones it has a cross stripe between the antennae, which includes the frontal eye, 1+1 longitudinal stripes on the clypeus, and spotted lateral and back parts. The large abdomen has a broad, spotted lateral band, continuing on the sides of the head and joining the other side by a narrow cross stripe on the posterior part of the large abdomen; the ventral side has few spots, the two parts of the ventral tube have one inner spot each. The abdominal segment V has a diffuse cross band on the lateral and dorsal sides, segment VI a broad apical patch. The antennae are pigmented in distal spots of segments I and II, in distal part of segment III, and in the whole of segment IV. The legs have distal spots on the femora and longitudinal stripes on the tibiae. The furca is almost unpigmented. (The type species is mainly pigmented dark blue).

Chaetotaxy and special structures: The general chaetotaxy is the same as in the type species, but there are some structural differences.

Head: All setae are shorter and the interocular vesicles lower. The eye-patches are slightly protruding (type species: strongly protruding), the ommatidia are of almost equal shape, only C is smaller than the others (type species: C and D smaller). The subsegments of antennal segment IV are long (short in the type species).

Large abdomen: The 2+2 spines dorsal to bothriotrichia A+A are short and blunt (long and pointed in the type species) (Figs. 1 and 2); there are apparently several small micropores near bothriotrichia B (type species: only 1 micropore posterior to B).

Small abdomen: In the female, the circumanal setae appear to be stronger than in the type species. The blunt appendices anales are basally thickened (Fig. 3) (without basal thickening in the type species).

Legs: These setae also appear to be thicker than in the type species and on tibiae (type species: thinner). The tibiae have a basal thickening (type species: mostly without thickening) and the posterior edges of the macro have more teeth, i.e. 24-28 (type species: 17-20).

Conclusions

It was a great surprise to identify the genus *Sturmius* with a second new species in tree trap samples from Manaus. This strange genus is easily identified by its large protruding eye-patches, bipartite ventral tubes, 2+2 spines dorsal to the bothriotrichia A+A, thick and straight appendices anales and similar but longer setae s3 of the abdominal segment VI of the female. The genus *Sturmius*, which forms a separate family Sturmiidae, has originally been described for a single species, *Sturmius epiphytius* BRETFELD, 1994 from Colombia, where it occurs in the páramo region in epiphytic mosses and ferns of mountain-forest remnants at 3000-3700 m altitude. *Sturmius trunciavis* n.sp. also occurs in a particular habitat, the surface of trunks of living trees; it has not been found in any of the numerous samples taken from the forest floor near Manaus.

Thus, the genus *Sturmius* obviously lives in very restricted habitats on trees, in the páramo in epiphytes and in the Amazonian rain forest on living trunks. The increase in interest in canopy arthropods of tropical trees in the last years (STORK et al. 1996) may result in the discovery of more strange Symphypleoman species of this peculiar habitat.
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References


Figs. 1-3:
1: Sturmia epiphytus: bothriothrix A and the two spines dorsal of it. 2: Sturmia trunciclavus n.sp.: bothriothrix A and the two spines dorsal of it. 3: Sturmia trunciclavus n.sp.: oblique view of ventral circumanal setae of female with appendices anales a5. Scale in figures 1-3: 50 μm.
Figs. 4 & 5:
4. *Sturmius truncivivus* n.sp.: tibiotarsus III from posterior, seta IVpi often as thick as IIp and IIIp and smooth or rough. Scale: 50 μm. 5. *Sturmius truncivivus* n.sp.: claw and empodium of leg II from posterior. Scale: 20 μm.