

A NEW SPOTTED THORAX SPECIES OF THE GENUS *DROSOPHILA*
(DIPTERA, DROSOPHILIDAE).

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ABSTRACT

Drosophila atalaia, sp. nov., a neotropical species belonging to the subgenus *Drosophila* is described and figured. Like most species of the *repleta* group it has bristles of mesonotum arising from brown spots. However, the evidence from comparative analysis of the male genitalia suggests that *D. atalaia* is closely related to *D. caponei* Dobzhansky & Pavan. *da Cunha, 1907*

INTRODUCTION

A typical spotted thorax is the main diagnostic character shared by the *D. repleta* and *D. annulimana* species group, although they are not closely related neotropical groups of the subgenus *Drosophila*. The *repleta* group was originally established by Sturtevant (1942). During the past 40 years several new spotted thorax species of *Drosophila* were included in this group and based on comparative morphology and polytene chromosomal banding some species were removed. Furthermore, according to Wasserman (1962) some non spotted thorax species have been considered to belong to the *repleta* group. *D. annulimana*, first regarded as an aberrant member of the *repleta* group by Dobzhansky & Pavan (1943), was later recognized to belong to a different species group nominated after it.

While preparing the morphological revision of the *repleta* group (to be published), the senior author has examined at least three undescribed spotted thorax species which were thought to be members of the *D. repleta* species group. However, detailed morphological studies of these materials revealed that they are unrelated species and do not belong to the *repleta* group. One of them is described in the present paper.

Drosophila (Drosophila) atalaia, new species
(Figures 1-2)

D. sp F. Vilela et al., 1980: 839.

Type-Material — Holotype male, labelled: "Brasil — RJ, Arraial do Cabo, 22°58'S, 42°02'W, Sene & Carson col., 9-11.III.1977/HOLOTIPO ♂ *Drosophila atalaia*; paratypes: (1 ♂) same data as holotype, (18 ♂, 9 ♀) same locality as holotype collected by Vilela & Balmal in 25-26.X.1981. Other ten paratypes as follows: Ilha do Boi, Vitória, Espírito Santo, Brasil — (3 ♂) E. R. Stange col., October, 1977, (1 ♂) G. Peisino col., 06.IX.1978; (3 ♂) 30 Km NW of Miranda, Mato Grosso do Sul, Brazil, S. M. F. Pereira col., July 1978; (1 ♂) 48 Km NW of Miranda, Mato Grosso do Sul, Brazil, Sene & Vilela col., 20-25.IX.1976; (1 ♀) 56 Km NW of Miranda, Mato Grosso do Sul, Brazil, Sene et al. col., 30.X — 03.XI.1981; (1 ♂) 10 Km N of Puerto Tirol, Chaco, Argentina, Sene & Vilela col., 30-31.X.1978. The postabdomen of holotype and seven male paratypes were removed, dissected and placed in microvials attached to the respective specimens. All the specimens are in the "Museu de Zoologia da Universidade de São Paulo".

External characters of imagines — ♂, ♀. Arista with 2-4 dorsal and 2-3 ventral branches plus terminal fork. Antennae yellowish brown. Orbits

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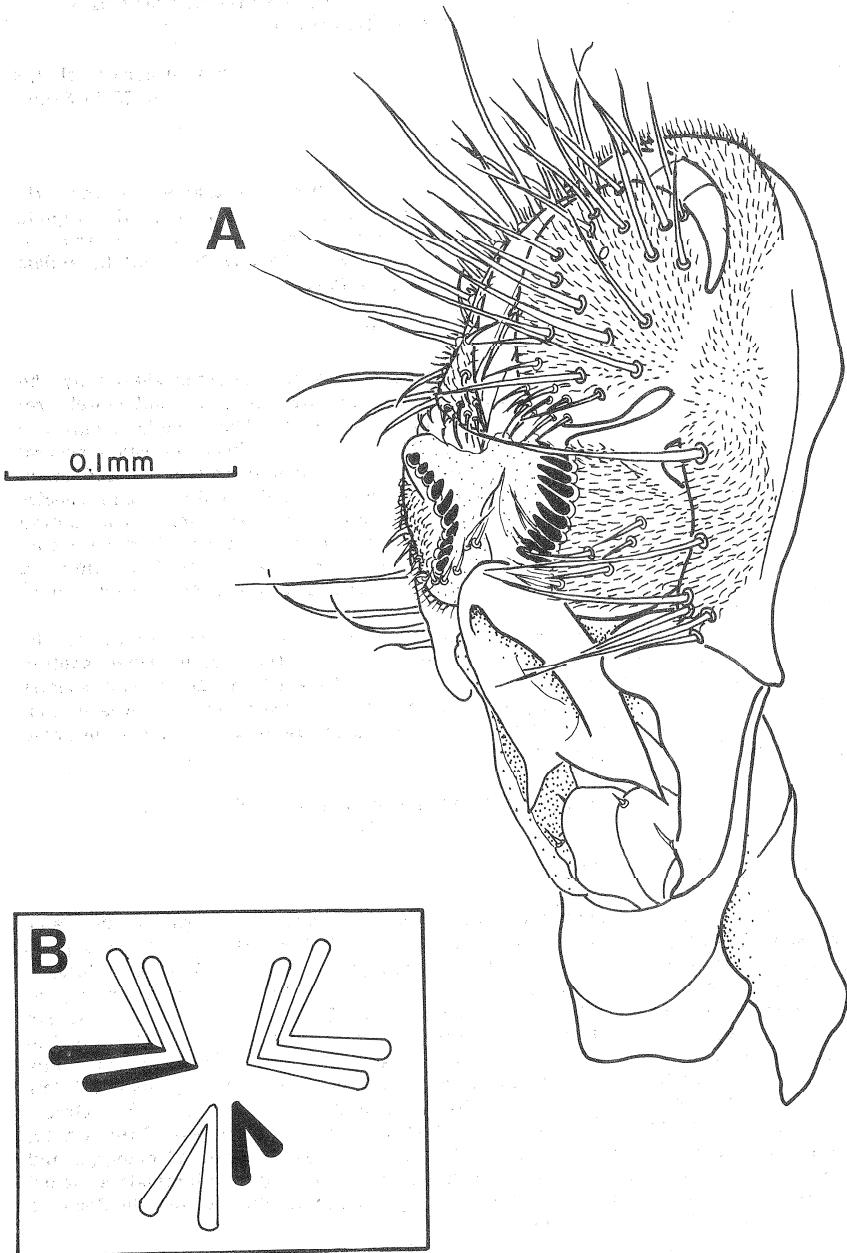


Figure 1 — *Drosophila atalaia*, sp. nov.: A — (holotype), male genitalia, lateroblique aspect; B — diagram of male neuroblast metaphase chromosomes (heterochromatin is indicated in black).

slightly lighter and ocellar triangle slightly darker than front. Front yellowish brown, pollinose. Middle orbital about 1/2 of anterior and 2/3 of posterior. Second oral about 1/3 length of first. Face yellowish brown. Carina appears prominent, flat, narrow not sulcate, yellowish brown. Palpi pollinose, yellowish brown with bristles on ventral surface. Cheeks yellowish brown, their greatest width about 1/3 greatest diameter of eyes. Eyes vermilion, with short black piles.

Acrostichal hairs in 8 irregular rows. No prescutellars. Anterior scutellars convergent. Mesonotum yellowish brown, pollinose, bristles arising from small brown spots. Some spots are fused to form an irregular circle anterior to the transverse suturae. Scutellum yellowish brown, medianly darker. Pleurae brown. Sterno-index about 0.7. Halteres yellowish brown. Coxae and femora light brown, distally darker. Tibiae and tarsi yellowish brown, apical bristles on first and second tibiae, preapicalls on all three.

Abdomen yellowish brown, second to fifth tergite with a medianly enlarged and interrupted posterior brown band, not well delimited, which bends toward and reaches anterior margin at angle of tergite. Sixth tergite with a narrower, fainter band.

Wings clear. Costal index about 2.2; 4th vein index about 2.0; 5x index about 2.0; 5x index about 1.6; 4c index about 1.2; M index about 0.7. Apex of first costal section black with two slightly enlarged bristles. Third costal section with heavy bristles on its basal half.

Wing length about 1.8 mm (♂), 1.9 mm (♀).

Body length (dried specimens) about 1.6 mm (♂); 1.7 mm (♀).

Internal characters of imagines and genitalia — ♂. Testis orange, with about 4 inner and 6 and 1/2 outer coils. Epandrium partially micropubescent; lower portion with about 6 bristles; upper portion without bristle. Cercus partially micropubescent, fused at lower half. Surstylus partially micropubescent with about 11 primary teeth and about 10 marginal bristles, some of them placed anteriorly to primary teeth; no secondary teeth (Fig. 1A).

Hyandrium as long as epandrium; bow of hyandrium rod-shaped, medianly less sclerotized; conchae of hyandrium bearing an anterior bristle.

Aedeagus with some tiny spur-like ornamentation anterior to a pair of subapical, straight, pointed spurs; dorsal cleft about 2/5 of length. Aedeagal apodeme and ventral rod broadly fused, tolet-bowl-shaped in profile. Gonopods with one tiny subapical sensillum, medianly linked to conchae of hyandrium by membranous tissue (Fig. 2). Phallosomal index about 2.2.

♀. Ventral receptacle with about 55 coils. Ovipositor apically rounded with about 12 marginal and 2 discal teeth. Spermathecae finger-shaped, sclerotized, duct deeply invaginated.

Eggs. Four filaments slightly longer than egg; egg length about 0.6 mm.

Puparia. Very light yellow, sheer; horn index about 4.6; each anterior spiracle with about 11 branches.

Chromosomes. Female larval ganglion metaphase karyotype consists of three pairs of metacentric chromosomes. One pair exhibits heterochromatic block in one arm while the other arm is euchromatic. In male, the Y chromosome is submetacentric which is almost entirely heterochromatic (Fig. 1B).

Relationships. *D. atalaia* belongs to the Subgenus *Drosophila* and it is, at present, not assigned to any of the recognized species group. Based on the structure of aedeagus, however, it appears to show a close relationship to *D. caponei* Dobzhansky & Pavan (figured by Val, in press).

Other specimens examined (5): (2 ♂, 2 ♀, 1 sex unknown), labelled: "Laguna Zapotitan (SIC), 31. a. 19, El Salvador, W. B. Heed col., Dec. 1953"; in the *Drosophila* Type and Reference Collection (Austin).

Distribution. Brazil (Espírito Santo, Rio de Janeiro and Mato Grosso do Sul), Argentina (Chaco) and El Salvador.

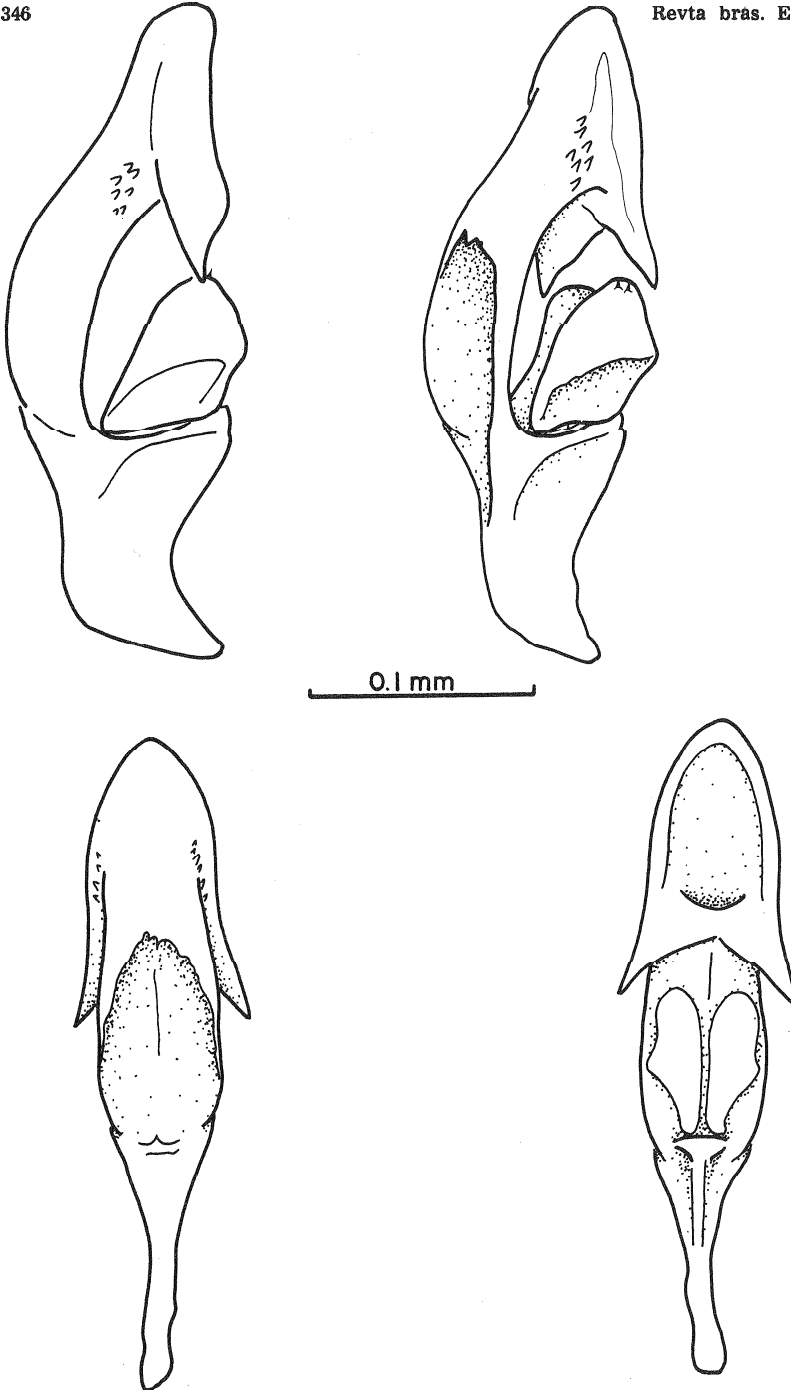


Figure 2 — *Drosophila atalaia*, sp. nov. (holotype): aedeagus and aedeagal apodeme several aspects.

Etymology. The species name refers to the toponym "Morro do Atalaia", the hill where the holotype and most paratypes were collected.

Note. It should be noted that the male genitalia of the examined specimens from El Salvador is slightly different from that of the South American and they are not considered as paratypes. Those specimens were probably cited by Heed (1957) as one of the seven undescribed species of the "repleta group" from El Salvador. The holotype and one male paratype of *D. atalaia* were included in the 12 specimens of "undetermined" species collected at Arraial do Cabo as appeared in Sene *et al.* (1980).

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