A new anthophilic species of *Drosophila* Fallén belonging to the *bromeliae* group of species (Diptera, Drosophilidae)

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**ABSTRACT.** *Drosophila speciosa* sp. nov. from: Belém, Pará, Brazil, is described and morphologically compared to a closely related species, *D. aguape* Val & Marques, 1996. Adult specimens of *D. speciosa* sp. nov. were collected while visiting *T. speciosum* Willd. ex Spreng. flowers in EMBRAPA’s *Theobroma linnaeae* germplasm collections (II3 individuals) in Belém and in Caxiuanã Scientific Station, in Melgaço, Pará, Brazil (four individuals). Emergent were obtained from *T. speciosum* flowers in both localities being four adults in Caxiuanã and 532 in EMBRAPA. Other eight emergences were registered from *Passiflora edulis* Sims flowers in Curiçá, Pará, Brazil.

**KEY WORDS.** Anthophilic flies, drosophilids, pollination, *Theobroma speciosum*.

**RESUMO.** *Drosophila speciosa* sp. nov. de Belém, Pará, Brasil, é descrita e comparada morfologicamente com uma espécie estreitamente relacionada, *D. aguape* Val & Marques, 1996. Os adultos de *D. speciosa* sp. nov. foram coletados visitando as flores de *Theobroma speciosum* Willd. ex Spreng. na coleção de germoplasma de *Theobroma linnaeae* da Empresa Brasileira de Pesquisa Agropecuária da Amazônia Oriental – EMBRAPA (II3 indivíduos) em Belém e na Estação Científica Ferreira Penna em Caxiuanã, Melgaço, Pará, Brasil (four indivíduos). Os emergentes foram obtidos das flores de *T. speciosum* em ambas localidades, quatro adultos em Caxiuanã e 532 na EMBRAPA. Outros oito emergentes foram observados em flores de maracujá (*Passiflora edulis* Sims) em Curiçá, Pará, Brasil.

**PALAVRAS CHAVE.** Drosófilidos, moscas antofilícas, polinização, *Theobroma speciosum*.

The flower breeding *Drosophila* Fallén, 1823 species are poorly studied in the Neotropics. Two species groups of the subgenus *Drosophila: Drosophila* (D.) flavipilosa Frey, 1919 (Wheeler et al. 1962) and *Drosophila* (D.) bromeliae Sturtevant, 1921 (Patterson & Stone 1952) – are associated with living flowers. Species of the flavipilosa group are known only from the flowers of the genera *Centrum* Linnaeus and *Sesia* Ruy & Pav. (Solanaeaceae), whereas species of the bromeliae group are more generalists, visiting the living and decaying flowers of *Convolvulaceae* (Patterson & Stone 1952), *Pomaderaeteae* (Val & Marques 1996), and *Aristolochiaceae* (Sakai 2002). This paper describe a new specie of *Drosophila* founded visiting sapromorphic flowers of *Theobroma speciosum* Willd. ex Spreng. in Belém, Pará, Brazil.

**MATERIAL AND METHODS**


All strain has been maintained of the drosophilids laboratory in the Museu Paraense Emílio Goeldi, Belém, Pará.

**Drosophila speciosa** sp. nov.

Figs 1-9, II and 12

Holotype: male; obtained 05 July 2001 from isofemale strain N06012.01 from inflorescence of *Theobroma speciosum* collected: Brazil, Pará, Belém, EMBRAPA/CATUP germplasm collection, 01°20'S, 48°03'W; A.A.R. du Silva, 14 June 2001. Paratypes: 38: 8 females and 13 males from strain N06012.01, 1 female and 6 males obtained 23 July 2002 from isofemale strain O05011.01, and 1 female obtained 09 September 2002 from isofemale strain O11002. Four females and five males (strain N09050) obtained 19 June 2001 emerging from flowers of *Passiflora edulis* Sims collected in Curiçá, Pará, Brazil.

Genitalia from seven paratypes of strain O05011.01 were removed and dissected. The single female and one of the male of strain O05011.01 were illustrated. All type specimens are deposited in the Museu Paraense Emílio Goeldi (MPEG), Belém, Pará, Brazil.

Small, yellow flies (Fig. 1). Body length (pinned specimens) 1.5-1.7 mm (male), 1.7-2.0 mm (female). Head: antennae yellow; arista brown, usually with 4 dorsal and 2 ventral branches in addition to the distal fork. Front yellow, area be-
Figures 1-6. *Drosophila speciosa* sp. nov. (1-2) Female: (1) general view, (2) ovipositor; (3-6) male: (3) epandrium, (4) surstyl, (5) hypandrium, (6) aedeagus.

Between ocellar triangle and the stripes by the eyes, grayish, forming a V-shaped spot on the front. Second orbital shorter than others, approximately intermediate to first and third orbitals. Face yellow, darker than front, with prominent carina. Palpi light brown, pollinose. One prominent oral bristle. Eyes with very short dark hairs. Thorax: mesonotum, scutellum and upper pleurae yellow. Halteres faint yellow. Acrrostichal hairs in eight regular rows; two prescutellar present. Anterior scutellar bristles convergent. Sterno-pleural index about 0.5-0.9. Legs yellow, 5th segments of tarsi browned. Apical and preapical bristles on 1st and 2nd tibiae; preapical on third. Wings clear, slightly grayish; costal-index about 2.07 in males and 2.39 in females; 4th vein index 1.77 in male and 1.83 in female; 5th vein index 1.63 male and 1.60 in female. Wing length about 1.5-2.0 mm (female), 1.5-1.7 mm (male).

Abdomen. Abdomen yellow, darker than mesonotum, tergites with darker weekly interrupted posterior stripes.

Male terminalia (Figs 3-6). Epandrium (Fig. 3) with six ventral bristles: three (four) lower, two (one) median and one in an upper position. Ceci fused to epandrium (Fig. 3). Surstyl with 11-15 primary teeth (Fig. 4). Hypandrium shorter than epandrium (Fig. 5). Aedeagus shape slightly invaginated at distal dorsal tip (Fig. 6). Aedeagal apodeme, paramere triangular. Phallosomal index 3.0.

Female terminalia (Figs 2 and 7-9). Ovipositor plates redish, slightly pointed apically, with 12 marginal and 3-4 discal short spines (Figs 7-9) (15-16 marginal and 3-4 discal in *D. agaupe*, Fig. 10). Spermatheca brown grayish, mushroom-shaped with a flat-top, slightly sclerotized, duct half-way telescoped. Puparia (Figs 11-12). Reddish brown; horn index about 0.2-0.3, each anterior spiracle with about 9-12 branches. Life cycle (at 25 degrees): larval stage about 12 days and pupal stage about seven days.

Distribution. Pará, Brazil.

*Drosophila speciosa* sp. nov. belongs to the *brunellic* group in subgenus *Drosophila*. The external morphology and general shape of the male terminalia, especially the aedeagus, suggest a close relationship to *D. bruneloides* Pavan & Cunha, 1947 and *D. agaupe* Val & Marques, 1996. However, *D. speciosa* differs from both of these species by its male and female terminalia and from *D. agaupe* also by general coloration.

Additional specimens examined, deposited in the Museu Paraense Emílio Goeldi (MPEG), Belém, Pará, Brazil: One-hundred thirteen adults of *D. speciosa* sp. nov. collected in *Theobroma speciosum* flowers in the EMRAPA/CPATU germplasm collection in Belém; four adults collected from *T. speciosum* flowers in primary forest gaps at the Caxiuanã Sci-
entific Station; 532 individuals emerged in laboratory from flowers collected in EMBRAPA/CPATU and four individuals raised from Theobroma speciosum flowers collected in Caxiuanã. Drosophila speciosa sp. nov. was found visiting sapromorphic flowers of Theobroma speciosum Wild. ex Spreng. (Sterculiaceae) and Passiflora edulis Sims (Passifloraceae).

This species is named in recognition of its presumed principal host, Theobroma speciosum.

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Figures 7-12. (7-9) Drosophila speciosa sp. nov., female ovipositor plates: (7) details, (8) lateral view, (9) ventral view; (10) D. aqua sp. nov., female ovipositor plates, ventral view; (11-12) D. speciosa sp. nov.: (11) puparia, dorsal view, (12) branches of the horn view.