

## "DROSOPHILA WINGEI" A NEW BRAZILIAN SPECIES OF THE "DREYFUSI" GROUP<sup>1</sup>

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(With 5 text-figures)

The ultimate goal of our studies is to contribute toward the knowledge of biological evolution determining factors. The scientific identification of species is our basic task. This analytical stage may be followed by a orderly arrangement of named species in groups and higher categories. To attempt this we use not only conventional taxonomic characteristics but the chromosomes and some comparative biochemistry also.

In this paper we describe a new *Drosophila* species fitting it to the *Dreyfusi* group.

This new species bears very good polythenic chromosomes, and we hope that the difficulty in obtaining a second generation in the laboratory conditions will be overcome. This species was attracted by yeast-fermenting bananas and collected by swinging a net over this kind of bait.

*Acknowledgements* — The field work that covered all Brazil during 1960 and 61 was financed by the Conselho Nacional de Pesquisas and the Rockefeller Foundation. Many other species have been studied. The present description is part of the work being reported.

### *Drosophila wingei* sp. n.

*Male and female* — Arista with 8 to 10 branches. Antennae with black pilosity. Front greyish brown; the space between the ocelli dark brown. Ocelli pink in living, yellowish in dead specimens. Anterior orbital 1/7 shorter than posterior, middle thinner 1/3 the posterior. Two prominent oral bristles second thinner and about 1/3 of the first. Carina rhiniform, prominent broadened below, not sulcate. Palpi brown with 3 conspicuous bristles. Cheeks brown, their greatest width about 1/5 of the greatest diameter of the eyes. Eyes dark red with very short dark pile.

Acrostichal hairs in 8 rows; regular. No prescutellars. Anterior scutellars straight or divergent. Mesonotum greyish brown with 6 dark brown longitudinal stripes. Pleurae yellowish brown. Anterior sternopleural, 8/10 posterior, middle about 1/3 posterior.

<sup>1</sup> Received for publication August 10, 1963.

Legs yellowish brown. Apical bristles on first and second tibiae, preapical on all three.

Abdomen yellowish brown; second to fourth tergites with blackish basal stripes broadened and interrupted in the middle, narrowing and not reaching the lateral margins; fifth tergite without band or with a faint regular strip, interrupted in the middle. Other tergites entirely yellowish brown.

*Male genitalia* — Presents a strong and broad clasper (fig. 2) with 10 primary teeth marginally inserted in a slightly convex row; secondary teeth in two groups, one *posterior* in three rows of 2-3 with a total of 8-9; the other, *anterior*, 4-7, clustered. Four or five margin bristles very long and curved (fig. 2 mb).

*Penis* strongly sclerotized and bifid at the tip. *Hyandrium* with four strong teeth (fig. 2, H) between which there is a long longitudinal narrow opening until the middle of the hypandrium.

Wings uniformly clear, veins brown. Apex of first costal section with two well-developed bristles. Heavy and short bristles on the costal side until the anterior 4/7 of the third costal section. Costal index: 3.6 to 3.9; 4th vein index: 1.4 to 1.5; 5 index: 1.0 to 1.2. Body length ♂ 3.8 mm, ♀ 4 mm. Head 1.2 x 0.6 mm; wing 4 mm.

*Internal characters of the imago* — Anterior Malpighian tubes free, posterior fused lumen continuous. Testes the 6 inner coils light yellow, the 4 outer ones white. Auxiliary gland M shaped. Sperm pump reniform with the posterior ends with two short diverticulae narrowed in the ends.

Spermathecae very small (fig. 1) and weakly sclerotized. Spermathecal duct relatively broad, weakly sclerotized as the spermatheca and characteristic and permanently coiled. Ventral receptacle regularly coiled with about 60 coils.

Eggs with four filaments (fig. 3) that may be longer than or equal to the length of the egg.

*Puparia* brown (fig. 4), horns with 9-10 branches with free ends. Horn index: 5.4.

*Chromosomes*: Three pairs of V shaped metaphasic chromosomes as shows the fig. 5. The larger pair has a satellite and is heterochromatic in prometaphasis. Excellent well banded salivary gland chromosomes can be obtained. Unfortunately this species did not give second generation in laboratory for further studies.

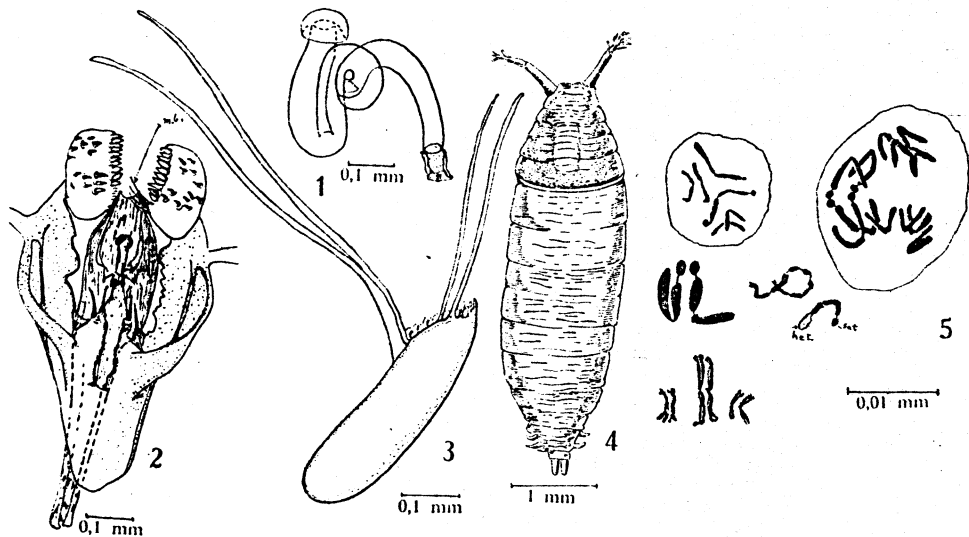
*Relationships* — The eggs, spermathecae and several other characteristics of *Drosophila wingei* closely resembles the ones of *Drosophila dreyfusi* Dobzhansky and Pavan, 1943. The most important differences are:

*Chromosomes*: *D. wingei*, three pairs of V's one with satellites, *D. dreyfusi*, two pairs of V's one with satellites and a pair of J's; *D. camargoi*, a long J's, a pair of rods, and two pairs of small V's;

External male genitalia, of *wingei* clearly differ from *dreyfusi* (Hsu, 1949) that have only one group, of secondary teeth in the clasper and much smaller margin bristles than *wingei*.

*D. wingei* has no enlarged acrostichals immediately in front of the scutellar suture as in *dreyfusi* and *camargoi*.

*D. wingei*, mesonotum grayish with six longitudinal stripes instead of two as in *camargoi* and none in *dreyfusi*.



*Drosophila wingei* sp. n. — Fig. 1: Spermatheca, duct with permanent rigid coils; fig. 2: male genitalia with hypandrium (h), the strong bristles (sb), the penis (p) and the two series of teeth of the clasper (cl) with the middle bristles (mb); fig. 3: egg; fig. 4: puparium; fig. 5: chromosomes with heterochromatic parts (het) and the great satellite (sat).

DOBZHANSKY & PAVAN (1950) mentioned that *D. gigas* Duda, 1925, from Costa Rica, *D. lugubripennis* Duda, 1927 from Peru and *D. fuscipennis* Duda, 1927 from Peru are "perhaps also related" to *D. camargoi* from Amazonas consequently, further study may reveal that the *Dreyfusi* group includes several other species. *D. wingei* is now included in the *Dreyfusi* group.

According to PATTERSON & MAINLAND (1944) *D. gigas* has "mushroom-shaped spermathecae" what agree with the general shape of *wingei*, *dreyfusi* and *camargoi* spermathecae. Nevertheless, *gigas* differ strikingly from these other three by having darker mesonotum color, two filamented eggs, 10-12 rows of acrostichals, greater costal index (4.6) and, specially, differ from *dreyfusi* and *wingei* by its external genitalia of the male, as can be deduced from the work of Hsu (1949) and our observations.

*Drosophila gigantea* Thomson, 1869, collected near Buenos Aires, is mentioned by DUDA (1925a, b) in connection with *D. gigas* descriptions, calling the attention that the wings are darker. DUDA (1925) mentions also *D. superba* Sturtevant (1916) from Guatemala, due to the ten rows of acrostichals. Never-

theless *superba* has a single pair of dorsocentrals in the thorax and the wings lacks a well developed anal angle.

For these reasons MALLOCH (1926) suggests that *superba* be placed in the subgenus *Curtonotum*. Consequently, *gigas*, *lugubripennis*, *fuscipennis* and *decemseriata* are the known species that closer resembles the ones of *Dreyfusi* group.

A summary, relative to wing indexes, are offered below for comparative purposes. In these grounds *wingei* is closer to *dreyfusi* and *camargoi* and after comes *briegeri* and *krugi*.

	Costal	4 th	5 x
<i>wingei</i> .....	3.9	1.4	1.2
<i>dreyfusi</i> .....	3.9	1.4	0.95
<i>camargoi</i> .....	3.7	1.4	1.4
<i>briegeri</i> .....	3.2 — 3.8	1.4 — 1.5	1.3 — 1.6
<i>krugi</i> .....	4.04 — 4.30	1.4 — 1.5	1.2
<i>gigas</i> .....	4.6	1.2	1.0

*Geographic distribution* — *D. wingei* have been found at the edges of the "tropical" rain forest that reaches the North of Rio Grande do Sul State, in a place near to *Colonia São Pedro de Alcântara*, district of *Torres*.

Dates: September 25th, 1959; collected 19 individuals in a total of 1,170 *Drosophilae*, and, November 6th, 1960, 2 specimens among 297 *Drosophilae*. *D. briegeri* have been collected by us in Pedras de Una, Bahia.

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