

NEW CHILEAN SPECIES OF THE GENUS *DROSOPHILA*

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Resumen

Se describen, en el presente trabajo, tres especies chilenas del género *Drosophila* (Diptera, Drosophilidae), que no fueron incluidas en la monografía de Brncic, 1957: "Las especies chilenas de Drosophilidae", Monog. Biol. Univ. Chile, 8. 136 pp. Se trata de las siguientes especies: *D. flavopilosa* Frey 1918; *D. cardini* Sturtevant 1916; *D. nigricruria* Patterson & Mainland 1943 (descrita erróneamente como *D. hoeckeri* sp. nov. en Brncic 1957 op. cit.), además de un miembro nuevo del subgénero *Phloridosa*, que hemos designado *D. alei* sp. nov.

Zusammenfassung

Es werden in dieser Arbeit vier Arten der Gattung *Drosophila* (Diptera, Drosophilidae) beschrieben, die in der Monographie von Brncic, 1957 ("Las especies chilenas de Drosophilidae", Monog. Biol. Univ. Chile, 8. 136 pp.) nicht einbegriffen sind. Es handelt sich um die folgenden: *D. flavopilosa* Frey 1918; *D. cardini* Sturtevant 1916; *D. nigricruria* Patterson & Mainland 1943 (in Brncic 1957, op. cit., irrtümlich als *D. hoeckeri* sp. nov. beschrieben), sowie ein neues Mitglied der Untergattung *Phloridosa*, das hier als *D. alei* sp. nov. bezeichnet wird.

Since the publication of our monograph on the Drosophilidae of Chile (Brncic 1957), the list of species living in this country has been modified by addition of new species or changes in nomenclature. One of the forms not included in the aforesaid work had been previously described for Chile, but has only recently been found by the author. This species corresponds to *D. flavopilosa* Frey 1918. Another is a neotropical species found for the first time in Chile: *D. cardini* Sturtevant 1916. The third species, *D. nigricruria* Patterson and Mainland 1943, was erroneously described as *D. hoeckeri* sp. nov. in Brncic 1957. The last is a new species of the *Phloridosa* subgenus, and is here described as *D. alei* sp. nov.

1. *Drosophila flavopilosa* Frey.

1918. *D. flavopilosa* Frey. Mitteilungen über südamerikanische Dipteren. Finska Vetenskaps-Societetens Forhandlingar. Bd. LX, Afd. A, N^o 14:14.
1927. *D. dentata* Duda. Arch. f. Naturg. 91-A-12 (1925): 201.
1934. *D. dentata* (Duda) Malloch. Dip. Patag. S. Chile, VI (5) : 441-444.
1959. *D. tendata* Wheeler. Univ. Texas Publ. 5914: 183.
1962. *D. flavopilosa* (Frey) Wheeler, Takada & Brncic. Univ. Texas Publ. 6205: 395.

This species is widely distributed in Chile. The reason that it had not been found before

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by the present author was the restricted habitat in which it lives. In fact, adults are not attracted by fermented fruit baits, but only fly around the autoctonous arbustive solanaceae, *Cestrum parqui* L'Her. during the flowering period. Females of *D. flavopilosa* lay their eggs in the flowers and a high percentage of these latter contain eggs, larvae or pupae. Wheeler, Takada and Brncic (1962) give a redescription of this species.

Frey (1918 op. cit.) described *D. flavopilosa* from a female found in Valparaíso (Chile) by F. Sahlberg (Feb. 1840) and kept in the Zoological Museum, Helsinki, Finland. Duda (1927) redescribed the species (*D. dentata*) from samples collected in Bolivia (La Paz), Chile (Los Andes), and Perú (Cuzco). Malloch (1934) reported the species from Los Andes, Casa Pangue, and Angol in Chile, and from Buenos Aires in Argentina. The author has found it in the following localities of Chile: Coquimbo (Tongoy, Ovalle); Valparaíso (Maitencillo, Concón, Viña del Mar, Algarrobo, El Tabo); Aconcagua (Río Blanco); Santiago (Vizcachas, El Canelo, Melocotón, Queltehues, El Volcán); Colchagua (Santa Cruz); Curicó (Los Queñes). Nevertheless the range of distribution of the species apparently extends to all places in which *Cestrum parqui* is conspicuous. Another locality corresponds to Uruguay (Montevideo) (Wheeler, Takada and Brncic 1962).

2. *Drosophila cardini* Sturtevant.

1916. *D. cardini* Sturtevant. Ann. Ent. Soc. Amer. 9: 336.

Thanks to Dr. W. Heed of the University of Arizona, Tucson, some specimens of the *cardini* group collected by the author, in July 1957 and in July 1960 in Azapa, Arica (Chile) were compared with most of the other members of the group. Both the morphological characteristics and the crosses made by Heed, showed that the species was *D. cardini* Sturtevant.

Up to now it has only been found in Chile in the locality of Arica.

3. *Drosophila nigricruria* Patterson and Mainland.

1943. *D. nigricruria* Patterson & Mainland. Univ. Texas Publ. 4313: 136.

1957. *D. hoeckeri* Brncic. Monog. Biol. Univ. Chile 8: 76.

1959. *D. hoeckeri* (Brncic) Wheeler. Prob. syn. of *nigricruria*. Univ. Texas Publ. 5914: 191.

It has been possible to establish laboratory cultures of the flies identified as *D. hoeckeri* Brncic 1957 on the basis of flies collected by the author in July 1957 in Azapa and Camarones (Arica). Thanks to the kindness of Dr. M. Wassermann of the University of Texas, Austin, it was possible to demonstrate that, in spite of differences in coloring, hybrids between *D. hoeckeri* and *D. nigricruria* Patterson and Mainland, were fertile. We therefore believe that they constitute one species, and that *D. hoeckeri* thus becomes a synonym of *D. nigricruria*.

Up to now, in Chile it has been found only in Arica (Azapa, Camarones).

4 *Drosophila (Phloridosa) alei* sp. nov.

External characters of imagines.

♂, ♀. Arista with about 7 or 8 branches, which are somewhat shorter than usual. Antennae yellowish brown, third joint darker. Front dark brown or black, but lighter towards the base of the antennae. Orbits and ocellar triangle same color as front, with a slight silvery reflection on the base of the orbital bristles. Middle orbital about $\frac{2}{3}$ the other two. Second oral slender and less than $\frac{1}{2}$ the first. Carina broad, triangular, not sulcated, edges sharply angled. Face tannish brown. Cheeks dark brown, with black pollinose, their greatest width about $\frac{1}{4}$ greatest diameter of eye. Eyes plum red, with short black pile.

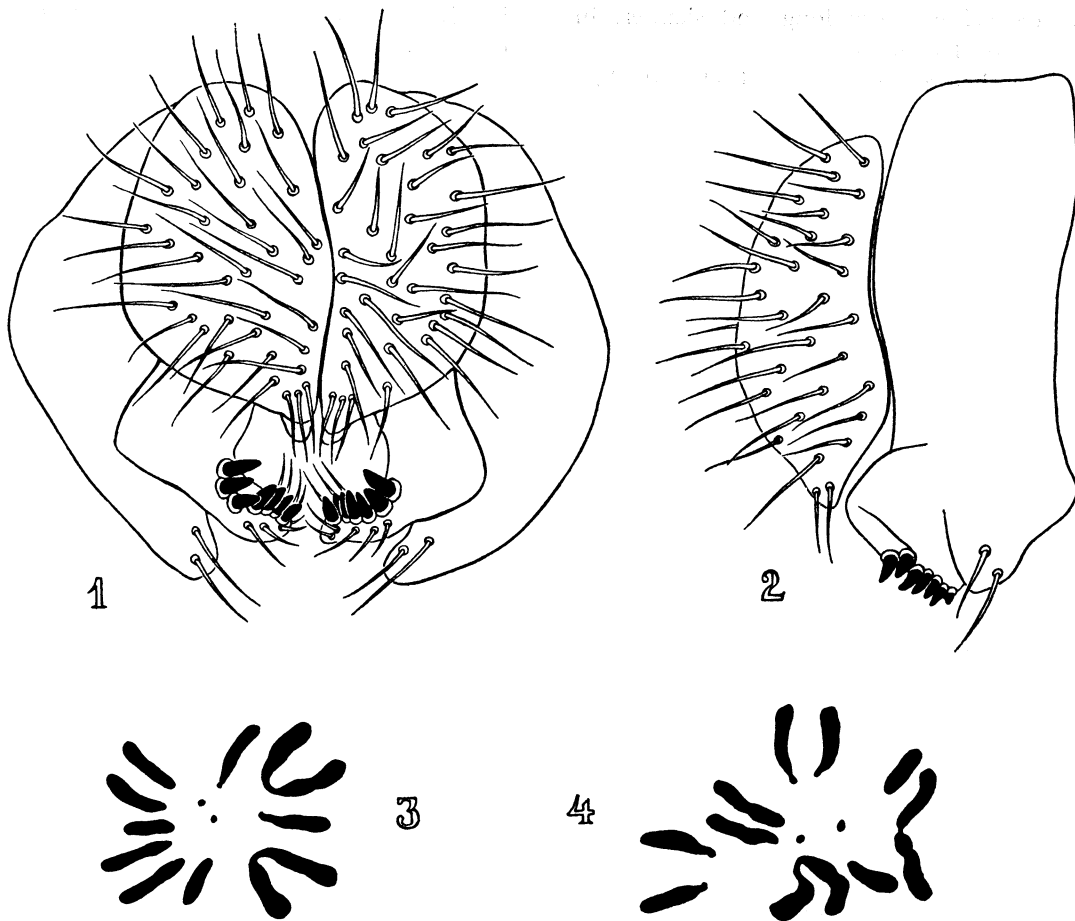


Figure 1. *Drosophila alei*. The external genital apparatus of male (Nº 1 and 2). Metaphase plates (Nº 3 and 4).

Achrostical hairs very fine and in 8 irregular rows. No prescutellars. Anterior dorsocentrals about $\frac{1}{2}$ the length of the posterior ones. The distance between the anterior and posterior dorsocentrals less than $\frac{1}{2}$ the distance between the bristles of each pair. Anterior scutellars divergent. Mesonotum and scutellum shining brownish black, without markings. Pleurae black, slightly pollinose. Sterno-index variable, about 0.3-0.5. Legs yellowish brown, coxae and femora darker. Apical and preapical bristles on first and second tibiae, preapicals on third. In general, all bristles are shorter than in other members of the genus.

Abdomen brownish black with the exception of the 4th and 5th tergites which are pale

tan. In young individuals all the tergites are a paler, grayish yellow.

Wings clear, veins yellow. Costal index about 2.5-2.6; 4th vein index about 1.7-1.8; 4c index about 0.9-1.0; 5x about 1.3. Third costal section with heavy bristles on its basal $\frac{2}{3}$.

Length body 2 mm; wings, 2 mm.

Internal characters of imagines

Anterior Malpighian tubes absent. Posterior Malpighian tubes fused forming a loop around the gut.

BIOLOGICA

Testes yellow, very long and slender, in a tight coil of many gyres.

Spermathecae weakly chitinized and elongated; ventral receptacle long, with numerous minor coils.

Other characteristics, distribution, relationships, types and notes

Eggs. Without filaments.

Puparia. Tannish. Each anterior spiracle with about 11 branches; it and its short stalk about $\frac{1}{9}$ or $\frac{1}{10}$ the length of the puparium.

Chromosomes. Metaphase plate shows 4 pairs of rods, 1 pair of V's, and one pair of small dots. Fig. 1 (N^o 3 and 4).

Distribution. Arica (Chile).

Relationships. Belongs to the *Phloridosa* subgenus of the genus *Drosophila* (Sturtevant, 1942). *D. alei* is easily distinguishable from the other members of the subgenus, due to its coloring, the size of the orbital bristles, and the external genitalia of the males. The primary clasper of *D. alei* (Fig. 1, N^o 1 and 2) has 7 primary teeth arranged in a sinuate and oblique row, and 8 marginal bristles. According to the drawings of Hsu (1949), *D. floricola* and *D. lutzii* have 6 primary teeth arranged in a straight row, and 9 marginal bristles.

Types. Holotype male and female and various additional specimens from Arica in Chi-

le (July 1960) are kept in the collection of the University of Chile, Institute of Biology.

Notes. This species is named for Dr. Raúl Alé, Chief of the National Health Service for Arica.

The adults were found in flowers. They have been taken in large numbers from *florypondium* (*Datura arbustiva*).

D. alei can be maintained in the laboratory, on the usual *Drosophila* medium, for one or two generations.

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