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DROSOPHILA CANARYANA TAKADA AND YOON,
1989 (DIPTERA: DROSOPHILIDAE),
A JUNIOR SYNONYM OF
DROSOPHILA GUANCHE MONCLÚS, 1976¹

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ABSTRACT: *Drosophila canaryana* Takada and Yoon, 1989 is a junior synonym of *Drosophila guanche* Monclús, 1976, both reported from Tenerife Island, Canary Islands. A new diagnosis is provided for the species, some morphological variation is noted, and the male genitalia illustrated in detail. Comments on relationships are reviewed.

Very recently in this journal there appeared the descriptions of three unrelated drosophilid species from widely separate areas, one of which was *Drosophila canaryana*. The main purpose of that report was to describe the undescribed species that occur in the National Drosophila Species Stock Service (NDSSC) at Bowling Green State University, Ohio. Dr. William B. Heed (Univ. Arizona) called to my attention the likelihood that *D. canaryana* was synonymous with *D. guanche* Monclús, also known only from the island of Tenerife in the Canary Islands. Dr. Marie Monclús (Univ. of Barcelona) provided copies of correspondence that Professor A. Prevosti (Univ. of Barcelona) sent to Prof. Marshall Wheeler (Univ. of Texas) in 1972 with some cultures of an undescribed *obscura* group species from Tenerife Is. Later, Prof. Prevosti recognized that the stock listed in the 1984 NDSSC catalogue from the Canary Islands was probably the culture of *D. guanche* which was originally sent to Prof. Wheeler. When the NDSSC was moved to Bowling Green St. Univ., this species was later re-described by Haruo Takada and Yong Sik Yoon, the latter director of the DNSCC. Thus, it is likely that the stocks on which the two descriptions are based are actually from the same culture!

Drosophila guanche Monclús, 1976

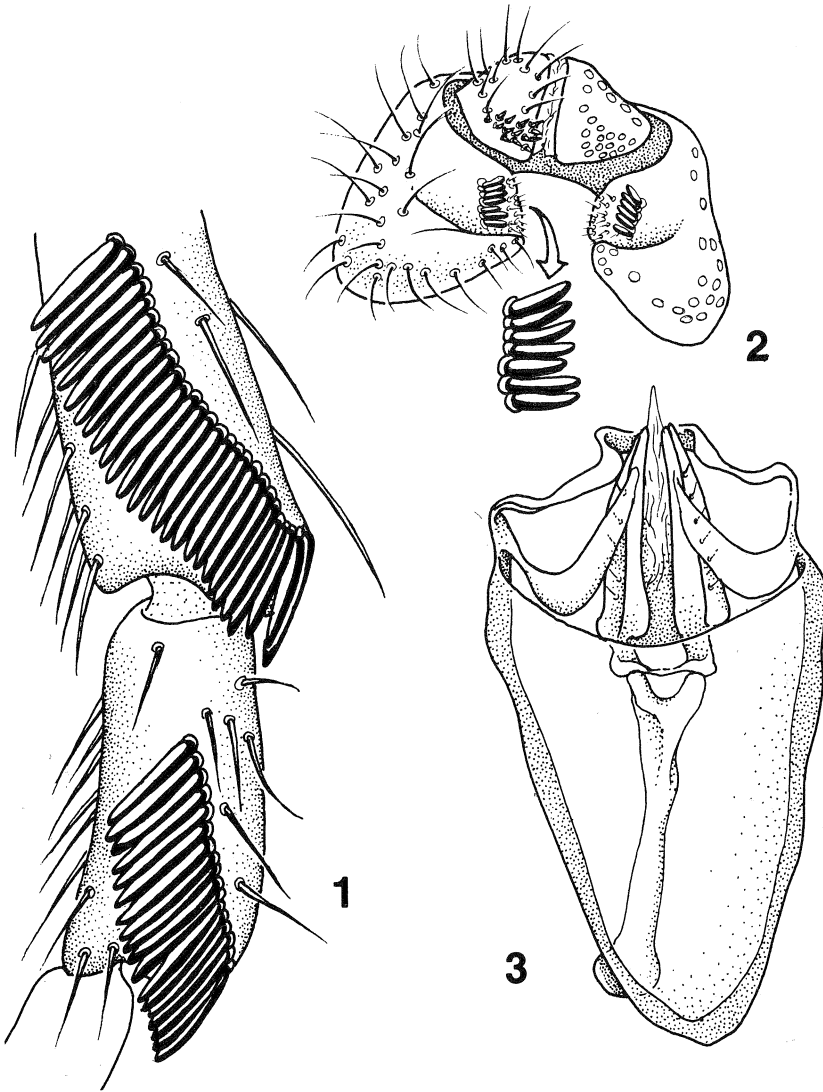
Drosophila guanche Monclús, 1976: 205.

Drosophila canaryana Takada and Yoon, 1989: 115. NEW SYNONYM.

Diagnosis: Color ranging from yellowish to dark brownish-black (see below); carina low, with narrow ridge; a single pair of vibrissae (subvibrissae slightly longer than one-half the length of vibrissae); arista with three dorsal and 1-2 ventral branches, plus terminal fork; male foretarsomere one with row of 24-29 stout black teeth, foretarsomere two with 18-26 (fig. 1); male genitalia as illustrated (figs. 2 and 3).

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Figs. 1-3. Structures of male *Drosophila guanche*. 1. Comb of teeth on first and second foretarsomeres. 2. Epiandrium and surstyli. 3. Hypandrium, aedeagus and associated structures.

Material Examined: Numerous laboratory-reared males and females from two stocks, both derived from Tenerife Island, Canary Islands. Specimens from the NDSSC at Bowling Green derived from culture number 1410-1211; details of the stocks from Barcelona are given in Monclús (1976). Pinned specimens of both lots are in the AMNH. The holotype of *D. "canaryana"* is in the AMNH (Takada and Yoon, 1989); the holotype of *D. guanche* is in the Genetics Department of the University of Barcelona, but was not examined by myself.

DISCUSSION

The two original descriptions are sufficiently ambiguous and different enough as to make identification difficult. Although the descriptions do agree in some respects, obvious discrepancies are the following (in italics are the conditions as I have found them): Number of arisal rays: 7 in Monclús, 5 in T&Y (I found 6-7). Illustrations of male genitalia: with no paraphysis, *large lateral gonopods*, median gonopods smaller than the paraphysis, a *long thin aedeagal apodeme*, and *narrow hypandrum* in Monclús; with a pair of *paraphyses each bearing a row of 8 sensilla*, small lateral gonopods, median gonopods equal in length to paraphyses, a stout aedeagal apodeme, and a wide rounded hypandrum in T&Y. Monclús (1976) mentioned that much of the body, such as the antennae, mesonotum, and pleura, were yellowish, which contrasts with the description of Takada and Yoon that the flies were mostly dark brown. The color is consistently different between cultured flies that I received from Drs. Monclús and Yoon, as reported. However, the flies from Barcelona were also considerably smaller, indicating that the color difference is probably due to differences in the temperature at which larvae were reared. It is known that cooler temperatures prolong larval development, resulting in larger individuals, and, in at least some species such as *Drosophila testacea*, cooler temperatures result in darker adults.

Monclús (1976), Takada and Yoon (1989), and Lakovaara and Saura (1982) all agreed that *guanche* is most closely related to *D. subobscura*. The range of *D. subobscura* extends from England to Iran, northern Africa, also on Tenerife and Madeira Islands, and it has even been introduced to Chile. Most recently, Monclús (1984) discovered *Drosophila madeirensis* from Madeira Island (32°38'N, 16°54'W), which now appears to be the closest relative of *guanche*.

ACKNOWLEDGMENTS

Bill Heed originally informed me of the possible synonymy of the two "species", and Jong Sik Yoon and Maria Monclús provided specimens for comparison. My thanks are extended to them.

LITERATURE CITED

- Lakovaara, S. and A. Saura.** 1982. Evolution and speciation in the *Drosophila obscura* group. pp. 1-59 In: M. Ashburner, H.L. Carson, and J.N. Thompson, Jr. *The Genetics and Biology of Drosophila*, vol. 3b. New York: Academic Press.
- Monclús, M.** 1976. Distribución y ecología de drosophilidos en España II. Especies de *Drosophila* de las Islas Canarias, con la descripción de una nueva especie. *Bol. R. Soc. Española Hist. Nat. (Biol.)* 74: 197-213.
- Monclús, M.** 1984. Drosophilidae of Madeira, with the description of *Drosophila madeirensis* n. sp. *Z. zool. Syst. Evolut.-forsch.* 22:94-103.
- Takada, H. and J.S. Yoon.** 1989. Three new *Drosophila* species (Diptera: Drosophilidae) from British Columbia, Hawaii, and the Canary Islands. *Ent. News* 100: 111-121.