

**MICRODON FALCATUS WILLISTON (DIPTERA:
SYRPHIDAE): A REDESCRIPTION, WITH LECTOTYPE
DESIGNATION AND NEW SYNONYMS¹**

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ABSTRACT: *Microdon falcatus* Williston 1887 (Diptera: Syrphidae) is redescribed. A lectotype is designated for the name and three new synonyms are proposed (*Microdon aquilinus* Giglio-Tos 1892, *Microdon hondanaria* Hull 1940, and *Microdon mellogutta* Hull 1943).

KEY WORDS: *Microdon falcatus*, Diptera, Syrphidae, redescription, lectotype, synonyms, Neotropics

More than a century ago Williston (1887) described a small microdontine fly from the Isthmus of Tehuantepec (Mexico) and named the fly *Microdon falcatus*, due to the distinctive shape of the basoflagellomere. The basoflagellomere is elongate and curved, with its base swollen, and the arista is short and thick (Fig. 1-4). Giglio-Tos (1892) recognized the species and described a related one, *aquilinus*, but since then no one has recognized either name. Hull, however, did redescribe the species twice (Hull 1940, 1943), and upon the second time declared his “new” species was related to no known species. This situation represents a common problem in the study of the Neotropical flower fly fauna, lots of new species descriptions, but little synthetic, monograph work. As previously noted (Thompson et al., 1976: 1), the Neotropical fauna is undoubtedly the richest, most diverse one in the World and hundreds of new species await description, but first, two centuries of names must be resolved, so new synonymies are now more important than new species descriptions. The challenges are to understand the species, their characters, variation and distribution, then re-examine types of old names where available or original descriptions where types are lost. So, this paper makes one small step toward that goal of resolving the Neotropical flower fly fauna, so we can begin to fully and accurately enumerate it.

METHODS

This paper presents a revision of a species, with a complete synonymy, distributional and biological data for the species, as well as a lectotype designation and notes on the type specimens of each name. Adult terminology follows Thompson (1999), the abbreviations found in the synonymies follow Thompson (2006), the use of the asterisk in the distribution statement refers to verified records found in the material examined section, ellipses (“...”) are used in the material examined section to replace data that is the same as the immediately preceding record. In the literature cited section, an attempt has been made to provide precise publication dates for all critical works (those with nomenclatural

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acts). These are in the numerical format of Year: Month: Day, with question marks used for unknown values. Color images of the species and more extensive information is provided at the Diptera WWW site under Flies and Syrphidae (see www.diptera.org/syrphid/syrphid.htm).

SYSTEMATIC ENTOMOLOGY

Microdon falcatus Williston

Microdon falcatus Williston 1887: 9. Mexico, Isthmus of Tehuantepec. LT ♂ USNM here designated. Williston 1891: 3 (key ref., Mexico [Guerrero], notes]; Giglio-Tos 1892: 36 (description, Mexico); Aldrich 1905: 345 (catalog citation); Kertész 1910: 355 (catalog citation); Fluke 1957: 26 (catalog citation); Thompson et al., 1976: 64 (catalog citation).

Microdon aquilinus Giglio-Tos 1892: 2. Mexico, Veracruz, Tuxpango. HT ♀ MRSN. Giglio-Tos 1893: 133 (description, Mexico); Aldrich 1905: 345 (catalog citation); Kertész 1910: 352 (catalog citation); Fluke 1957: 21 (catalog citation); Thompson et al., 1976: 63 (catalog citation). **NEW SYNONYM.**

Microdon hondurania Hull 1940: 247. Honduras, Salada River, 15 miles inland from Ceiba. HT ♂ CNC. Fluke 1957: 28 (catalog citation); Cooper and Cumming 1993: 65 (HT in CNC). **NEW SYNONYM.**

Microdon honduranius. Thompson et al., 1976: 247 (catalog citation).

Microdon mellogutta Hull 1943: 104. Brazil, Amazon. HT ♀ BMNH. Fluke 1957: 30 (catalog citation); Thompson et al., 1976: 66 (catalog citation). **NEW SYNONYM.**

Lectotype (Fig. 2) **Male. Head** (Fig. 3): Face yellowish orange, shiny, black pilose; facial stipe very narrow ventrally, expanded dorsally, brownish-white pollinose; lunule black; frons yellowish orange except for small black punctum just dorsad to antenna, shiny, black pilose; vertex yellowish orange except ocellar triangle black, black pilose; occiput narrow on ventral 3/4, expanded dorsally, black and grayish-white pollinose on ventral 3/4, yellowish orange dorsally, black pilose; antenna black, black pilose; basoflagellomere elongate and curved, with distinct round basolateral sensory pit; arista thick, about 3/4 as long as basoflagellomere, with very fine, short pile, with pile about ? as long as arisal diameter; antennal ratio 5:1:12.

Thorax: Postpronotum reddish orange, black pilose; scutum (Fig. 6) reddish orange except large medial and submedial black vittae which merge together along most of their length which is about medial 3/4 of scutum, black pilose; scutellum (Fig. 8) reddish yellow, black pilose, with small black microtrichose apical tubercle; pleuron yellow except pectus black, black pilose; anepisternum uniformly pilose dorsally; katepisternum pilose dorsally; anepimeron pilose; metasternum greatly reduced, bare; plumula short, pale; calypter brownish black; halter yellow with brown capitulum. **Legs.** black, black pilose. **Wing.** hyaline

except veins diffusely brownish bordered; completely microtrichose; crossvein sc-r present; vein R4+5 with distinct spur; vein M1 (apical crossvein) straight, perpendicular to vein R4+5.

Abdomen (Fig. 7): Reddish orange, black pilose; 1st sternum narrow, pilose; male genitalia (Fig. 10) as figured, typical *Microdon* structure with apically furcate aedeagus; cercus simple; 9th tergum with short dense pile dorsally; surstyle triangular in lateral view with posteroventral process; aedeagus with short apical processes.

Length. 7 mm (LT), 5-10 mm; wing: 5 mm (LT), 5-6 mm.

Variation: As is usual with many syrphid species, color develops and darkens after the adult emerges. Freshly emerged adults (young specimens) appear paler (Fig. 6), whereas older ones are much darker (Fig. 5). Examination of specimens of *falcatus* indicates that the extent of pale (yellow to reddish orange) coloration on the scutum and abdomen is a factor of age, individual and geographic variation. Also, there is the normal sexual dimorphism related to the eyes and the female basoflagellomere is not so swollen basally (Fig. 4).

The lectotype as described above is rather typical of the specimens from Mexico. The darkest individual specimen examined (Costa Rica, INBIO ... 459599, male) differs in having the frons completely brownish black, scutum and scutellum entirely brownish black and the abdomen almost entirely brownish black with only narrow pale areas along apical margin of 2nd tergum and basal and apicolateral margins of 4th tergum. The lightest individuals are the specimens from Brazil and Bolivia. In these the thorax and legs are entirely pale, yellow to orange, and pale pilose; the abdomen may have large brownish fasciate maculae on 3rd and 4th terga, but the abdomens are entirely pale pilose. Intermediate specimens have different combinations of partially pale legs (coxae, trochanters and basal 1/2 to 3/4 of femora pale), partially pale pilose scutella and scuta, dark frons, etc. So, there is a male specimen with black pilose scutellum, partially pale legs and dark frons (Costa Rica, INBIO ... 2426262) collected with a female specimen with pale pilose scutellum, partially pale legs and pale frons (Costa Rica, INBIO ... 2426255) ["with" means labeled as being of the same lot, same place, time and collector]. While comparison of typical specimens from Mexico with those from Brazil suggests differences that in many cases warrant species recognition, the various intermediate forms found in Costa Rica and Panama strongly suggest instead individual and geographic variation which will be confirmed when additional material from Colombia and Ecuador are studied. Hence, only one species is here recognized.

Types. *Microdon falcatus* Williston was described from 4 "female" specimens in the C. V. Riley collection from Tehuantepec. All these syntypes are still present in USNM collection, but are males! All have identical locality labels, but one is also labeled with a USNM type label and what appears to be a Williston determination label. This specimen is here designated lectotype to fix and ensure consistent interpretation of the name. This lectotype is labeled as follows (Fig. 9):

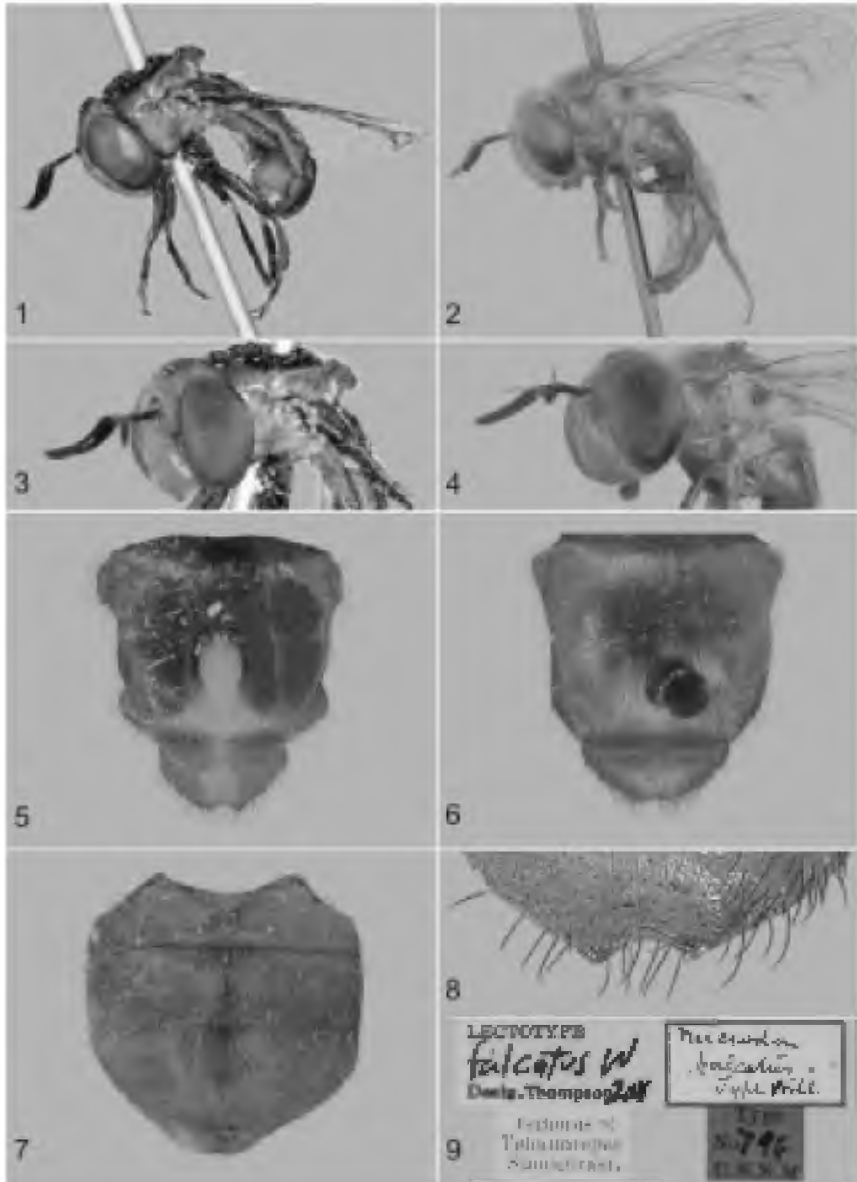
“Isthmus of, Tehautepec, Sumchrast;” “Type, No. 796, U.S.N.M. [red];” “*Microdon, falcatus*, Type Will” [black bordered, apparently in Williston’s hand]. I have added a yellow lectotype label. The lectotype is in fair condition, the left wing is missing and the base of the abdomen has been damaged by dermestid beetle larvae.

Microdon aquilinus Giglio-Tos was described from a single female from Tuxpango collected by Sumichrast. In the Bellardi Mexican collection (MRSN), the holotype is labeled with “288,” and “*Microdon aquilinus*, [upside down male sex symbol] Giglio-Tos” [in Giglio-Tos’ hand] and is above the green Bellardi collection label of “*Microdon*, 2 [upside down female sex symbol], Tuxpango (Sumichr.) 288.”

Microdon honduriana Hull was described from a specimen he collected “on small, low herbage along the Salada River ... “ The holotype is now in the CNC and is labeled: ‘Salado R., 20 mi inland, Hond., 8.30.38;’ F. M. Hull collector;” “HOLOTYPE *honduriana* Hull;” and “HOLOTYPE, *Microdon, honduriana* Hull, CNC No. 20440.” The right wing is missing from the holotype. In describing *honduriana*, Hull provided no comparative information.

Microdon mellogutta Hull was described from a single female collected from the “Amazon” by Henry W. Bates. This specimen is in good condition in the Natural History Museum, London, and is labeled: “Holo-, type” [red circular BMNH type label], “Amazon, 66: 53”, and “Holotype, *Microdon, mellogutta* Hull” [red, in Hull’s hand]. In describing *mellogutta* Hull wrote “Not related to known species.” Hull apparently did not know many *Microdon* species and even some of his own species!

Distribution. Mexico (Tamaulipas*), El Salvador,* Honduras,* Costa Rica,* Panama,* Brazil,* Bolivia.*



Figs. 1-9. *Microdon falcatus* (Williston). 1. Adult male, lectotype, lateral view; 2. Adult, female, lateral view; 3. head, lectotype, frontoblique view; 4. head, frontoblique view; 5-6. thorax, dorsal view; 7. abdomen, dorsal view; 8. scutellum, dorsal view; 9. labels on lectotype.

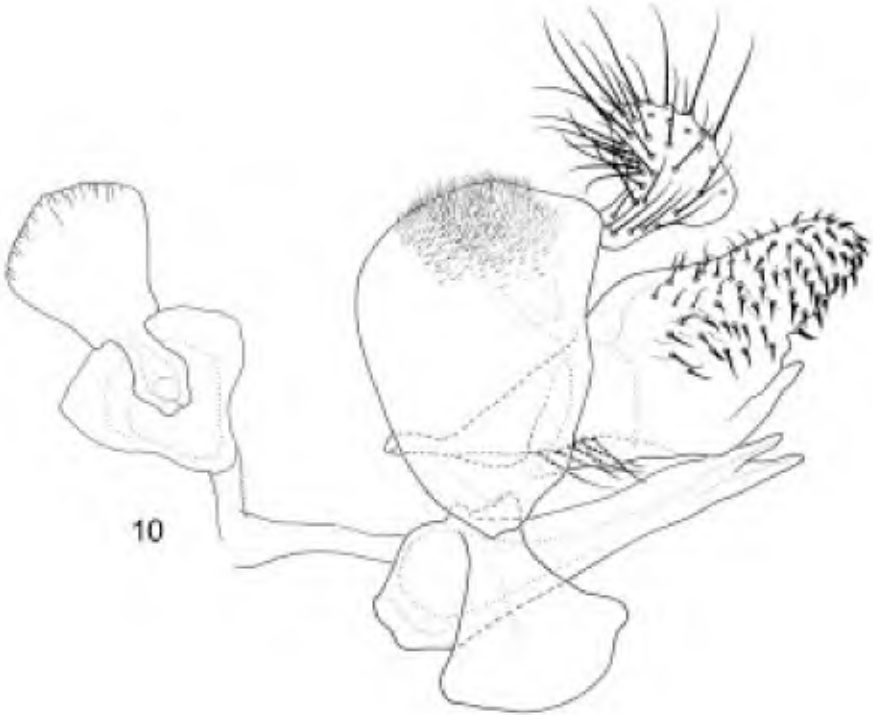


Fig. 10. *Microdon falcatus* (Williston). Male genitalia, lateral view.

Material Examined (42). **BRAZIL**. [? State] "Amazon," (HT ♀ of *mellogettata*). Para: Belem, 48. 29 W 1. 27 S 1967 Apr 12, Y. Sedman, (♀ USNM ENT00038259 USNM). **BOLIVIA**. Cochabamba Prov., Villa Tunari, 16 54' 55" S 65 22' 06" W, March 2001, Malaise Trap, H. Haider (♀, G. Stahls FMNH DNA voucher Y 128, FMNH). **COSTA RICA**. Cartago: Ref. Nac. Fauna Silv. Tapanti, Quebrada Segunda, 1200 m, LN 194000_560000, 1992 Apr, R. Vargas (♂ INBIOCRI000459599 USNM). Limon: Res. Biol. Hitoy Cerere, Rio Cerere, Est. Hitoy-Cerere, LN 184200_643300, 200 m, 1991 Apr, G. Carballo (♂ INBIOCRI000601465 USNM); ..., LN 643400_184600, 100 m, 1993 Jan, G. Carballo ("5-6cc-93"), #1775 (♂ INBIOCRI001742876 USNM); Bribri, 4 km NE, 1989 Sept-Nov, P. Hanson, (1 ♀ 3 ♂♂ USNM ENT00038254-7 USNM). Guanacaste: Sector Las Pailas, 4.5 km SW del Volcan Rincon de la Vieja, LN 306300_388600, 800 m, 1995 Jun 24-Jul 10, K. Taylor, #6198 (♂ INBIOCRI002426262, ♀ INBIOCRI002426255 USNM); A. C. Guanacaste, P. N. Guanacaste, Sector Las Pailas, 800 m, 1994 Jun 6-26, K Taylor, #3063 (♂ INBIOCRI001908659 USNM); Estacion Expt Enrique Jimenez Nunez, 20 km SW Canad, 1991 Nov 5-17, A S Menke, (♂ USNM ENT00038250 USNM).

Puntarenas: R. F. Golfo Dulce, 24 km w Piedras Blancas, 200 m, 1990 Nov, P. Hanson (♂ USNM ENT00038258 USNM). **EL SALVADOR.** Cuscatlan: Rosario, 88. 55 W 13. 46 N 1957 June 15 (♂ USNM ENT00038243 USNM); Quezaltepeque, 3 miles W, 1961 Aug 24, M. E. Irwin (3 ♂♂ USNM ENT00038266-8 USNM); ..., 1961 July 19, M. E. Irwin (♀ USNM ENT00038269 UC Davis); San Salvador, 1958 June 22, O. L. Cartwright (♀ USNM ENT00038252 USNM); ..., 1958 May 24, O. L. Cartwright (♀ USNM ENT00038253 USNM). **GUATEMALA.** Coyotenango "Such", Finca San Rafael Olimpo, 1700 ft, 1965 May 1, J. M. Campbell (♀ USNM ENT00038272 CNC); Siquinala, (♀ USNM ENT00038248 USNM). **HONDURAS.** La Lima, 1958-1959, J. G. Mattysse (♂ USNM ENT00038270 Cornell); Salado River, 20 miles inland from Ceiba, 30 Aug 1938, F. M. Hull (HT of *honduriana*, ♂ CNC). **MEXICO.** Chiapas: Huixtla, 20 miles N, 3000 ft, 1969 June 5, Malaise Trap (♂ ♀ USNM ENT00038277-8 CNC); ..., Huixtla, 20-25 miles NE, 3000 ft, 1969 June 1, H. J. Teskey (2 ♀ USNM ENT00038273-4 CNC); ..., Tapachula, Crawford, (♂♀ USNM ENT00038244-5 USNM); Colima: Colima, 103 41 W 19 14 N. L. Conradt, (♂♀ USNM ENT00038246-7 USNM); Oaxaca: Palomares, 1961 Sep 5-21, R. and K. Dreisbach (2 ♂♂ USNM ENT00038260-1 USNM); Sinaloa: Concordia, 20 miles east, 3000 ft, 1964 Aug 8, W. R. M. Mason (♂ USNM ENT00038279 CNC); ..., Mazatlan, 1964 Aug 16, J. F. McAlpine, Malaise Trap (♂ USNM ENT00038275 CNC); Tamaulipas: Gomez Farias, and vicinity, 1965 July 20-24, Cornell Mexican Field Party, Malaise Trap, (♂ USNM ENT00038271 Cornell); Veracruz, Tuxpango, 18E49'N 97E01'W (holotype of *aquilinus*, MRSN); [state?], Tehautepec, Isthmus of, [95 0' 0" W 16 30' 0" N], Sumichrast, C. V. Riley Collection, (LT ♀, 3 ♂♂ PLT of *furcatus*, USNM ENT00038262-4 USNM); Veracruz: Lake Catemaco, 1969 June 17, B. V. Peterson, (♂ USNM ENT00038276 CNC). **PANAMA.** Canal Zone: Ancon, [80. 0. 0W 9. 0. 0N] 1918 Aug 9, R. P. Dietz (♀ USNM ENT00038251 USNM); ..., Summit, [79. 7 W 9. 1 N] 1946 Dec, N. L. H. Kraus (♂ USNM ENT00038249 USNM).

Remarks. Curran (1925, 1936, 1940, 1941), the last worker to attempt to publish comprehensive treatments of the genus *Microdon*, did not recognize these names (*falcatus* Williston, *aquilinus* Giglio-Tos) as he only worked from specimens previously identified in the collection of his museum (see Curran 1936: 1). He simply ignored the descriptions of other species by earlier authors. In the last published key to the Neotropical species of *Microdon* (Curran 1941), *falcatus* runs to couplet #21, where typical specimens do not match either alternative well (thorax black or dull orange) as the thorax is both black and pale yellow / orange. In those specimens, where the thorax is entirely yellow, *falcatus* is readily distinguished from *Aristosyrphus currani* Goot [replacement name for *clavicornis* Curran] by antennal shape, wing venation and coloration.

Among the New World microdontine flies, *Microdon falcatus* is easily recognized by its distinctive antennal shape as noted above. Other diagnostic charac-

ters are: 1) a greatly reduced and bare metasternum; 2) unarmed (without apical calcar) scutellum or one with small apical microtrichose tubercles; 3) oval abdomen; 4) vein R4+5 with distinct spur; and 4) vein M1 (apical crossvein) straight and joining vein R4+5 perpendicularly.

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