

## **Colax macula Wiedemann rediscovered in Brazil (Diptera, Nemestrinidae).**

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The aberrant fly *Colax macula*, described over a century ago by Wiedemann from Brazil, remained thus far a complete mystery, so much so that I had come to doubt its existence in the New World. It was known only from the type, now at the Vienna Museum, but so poorly preserved that Lichtwardt was unable to decide whether it actually belonged to *Atriadops* Wandolleck (= *Colax* Wiedemann). The species was, however, recently taken in some numbers by Prof. L. Travassos, and was fully described and illustrated by Mr. H. de Souza Lopes (1936, Mem. Inst. Osw. Cruz, XXXI, p. 883—888, Pls. I—II).

Mr. de Souza Lopes having kindly sent me one of the males, I was able to compare it with the other two known species of *Atriadops*, *A. javana* (Wiedemann) and *A. vespertilio* (Loew). I find, that it is exceedingly similar to, and unquestionably congeneric with these. All three species lack ocelli and have the alula vestigial; the wings are broad with the hind margin not or scarcely wavy; the thoracal squamae are well developed; the frons is broad in the female, much narrowed or linear above in the male; the ovipositor of the female is slender, sabre-shaped; and the mouth-parts are more degenerate than in any other Nemestrinid.

As so often the case in Nemestrinidae, the venation of *Atriadops* is so variable, even in striking features and apparently within specific limits, that it scarcely affords reliable generic characters. The wide range of individual variation explains the contradictory statements and figures published by various authors, as well as the synonymy resulting from descriptions based upon aberrant specimens. In fact one can hardly find two specimens exactly alike in every detail of venation, and often the two wings of the same specimen differ markedly. One feature, however, is present

in all specimens of the three species seen thus far, and since it is not found in the other genera of the subfamily Trichopsideinae, it may perhaps have generic value. If the axillary cell (between the sixth longitudinal or anal vein and basal hind margin) be carefully examined, it will be seen that it is, not only unusually broad, but traversed by an incomplete accessory longitudinal vein (axillary vein), running for a short distance from the base of the wing.

### 1. *Atriadops macula* (Wiedemann, 1824).

The synonymy, as given in part by de Souza Lopes, need not be repeated. A reference should be added to Lichtwardt, 1910, Deutsch. Ent. Zeitschr., p. 611, who examined the type. Wandolleck (1897) discusses *A. macula* on p. 247 (with fig. 2), not on p. 246. Macquart, in 1840, shows it on Pl. III, figs. 2 and 2a (not Pl. XIII). Moreover, it should be noted that Wiedemann's figures of 1824 and 1830 disagree in many particulars and are to some extent faulty. They show, in each case, at the base of the wing a well-developed alula, which does not exist in any known specimen of *Atriadops*. The details of the venation are given fairly correctly in 1830 (Pl. IX, fig. 11b), but are rather fanciful in the 1824 drawing, where the discal cell (1st  $M_2$ ) opens broadly on the hind margin of the wing (a feature not known for any Nemestrinid) and there is an additional small cell at the base of the fourth posterior cell ( $M_3$ ). Macquart and Wandolleck, who never saw the species, appear to have copied Wiedemann's earlier drawings of 1824, but rather carelessly. Macquart shows two longitudinal veins running from the diagonal vein to the tip of the wing, makes the alula quite large and omits the accessory "axillary" vein. Wandolleck has three veins running out from the diagonal vein and a very strong axillary vein, but omits the subcosta (SC) and the alula.

The venation, as present in the specimens newly discovered in Brazil, may be studied from de Souza Lopes excellent photographs. Attention should be called to the following features:

(a) There is no accessory cell at the base of the fourth posterior cell, which is connected by a narrow base with the second basal cell (2nd  $M$ ).

(b) The discal cell (1st  $M_2$ ) is completely separated by the fourth and fifth posterior cells from the hind margin of the wing.

(c) Only three complete veins run from the diagonal vein to the tip of the wing and freely in the margin. In the male before me, however, a fairly long stump of vein arises from the apical section of the diagonal vein, and partly divides the second and third posterior cells, in both wings.\*) This may point to the possibility of certain specimens of *A. macula* having four complete veins apicad of the diagonal vein, as found normally in the other two species of *Atriadops*.

(d) The photographs show the fourth posterior cell broadly open at the tip on the diagonal vein in one case (♀) and closed near the diagonal vein in the other (♂). In my male this cell is broadly open in the right wing, but closed and connected by a fairly long stalk with the diagonal vein in the left wing (the stalk much longer than in de Souza's fig. 2).

Apart from the difference in the number of longitudinal veins apicad of the diagonal vein, mentioned above, *A. macula* is exceedingly similar to the African *A. vespertilio*, even in the arrangement of the darker velvety areas of the wing and in the shape of the whitish sickle at the apical third of the costa. The frons, however, is at its narrowest point decidedly broader than in the male of *A. vespertilio*.

## 2. *Atriadops vespertilio* (Loew, 1858).

*Colax vespertilio* Loew, 1858, Oefvers. Kongl. Vet. AK. Förhandl., Stockholm, XV, p. 340 (♀; Ngami, Bechuanaland); 1860, Abh. Naturw. Ver. Sachsen, Halle, II, (1861), p. 319, Pl. II, fig. 43 (♀) (Dipteren-Fauna Südafrikas, I, p. 247, Pl. II, fig. 43).

*Atriadops vespertilio* Wandolleck, 1897, Wien. Ent. Zeitg., XVI, p. 213. Bezzi, 1906, Bull. Soc. Ent. Italiana, XXXVII, (1905), p. 243. Kertész, 1909, Cat. Dipt., IV, p. 32. Lichtwardt, 1910, Deutsch. Ent. Zeitschr., p. 624 (♀; Abyssinia; Zanzibar; Dar-es-Salaam; Chinchoxo, Portuguese Congo; Misahöhe, Togo). H. Champion, 1921, Ann. Mag. Nat. Hist., (9) VIII, p. 244 (Monkey Bay district, Nyasaland; as prey of a dragonfly, *Orthethrum chrysostigma* Burmeister). Bezzi, 1924, Ann. South Afric. Mus., XIX, p. 168 (♂; Stella Bush, Natal; Mfongosi, Zululand; East London).

*Colax* sp. Austen, 1905, Rept. Sleeping Sickn. Comm. Roy. Soc., V, p. 4 (Bulemwezi, Uganda).

*Atriadops africana* Wandolleck, 1897, Ent. Nachricht., XXIII, p. 248, figs. 4—5 (♂, Misahöhe, Togo; ♀, Chinchoxo, Portuguese Congo).

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\*) This stump seems to be faintly visible in de Souza Lopes' photograph of the wing of the female. Since in my case it is present in the male, it is evidently not a sexual character.

*Atriadops cinnamomea* Brunetti, 1929, Ann. Mag. Nat. Hist., (10) IV, p. 5 (♀; type locality, Mt. Mlanje, Nyasaland; also from Kisii, S. Kavirondo, Kenya Colony).

**SPECIMENS EXAMINED.** GOLD COAST: Dunkwa, Ashanti, ♂ (Brit. Mus.). — BELGIAN CONGO: Kikondja (Katanga), ♂, Jan. 28, 1911 (J. Bequaert); Lukafu (Katanga), ♂, Dec. 1930 (G. de Witte); Sandoa (Katanga), ♂, Oct. 1930 (J. Overlaet); Elisabethville (Katanga), ♂, Apr. 1912 (Congo Mus.); Albertville (Katanga), ♀, Jan. 1919 (R. Mayné); Kalembelembe to Baraka (Katanga), 2 ♂♂, July 1918 (R. Mayné); Kasenga (Katanga), ♂ (Mich. Bequaert); Bambesa (Uele) (J. Leroy); Amadi to Niangara (Uele), ♂ (J. Rodhain). — NATAL: The Bluff (Durban), ♂, Oct. 15 (T. D. A. Cockerell); Stella Bush, ♂ (Brit. Mus.); Malvern, ♂ (Brit. Mus.). — PONDOLAND: Port St. John, ♂ (Brit. Mus.). — PORTUGUESE EAST AFRICA: Ruvo Valley, ♂ (Brit. Mus.). — NYASALAND: Zomba, ♂ (Brit. Mus.); Mt. Mlanje, ♀ (type of *A. cinnamomea*. — Brit. Mus.); Nkanda, ♂ (Brit. Mus.). — TANGANYIKA TERRITORY: Kikori, ♂ emerged from a pupal case found in a drawer in a house (W. H. Potts. — Brit. Mus.). — KENYA COLONY: Kisii, S. Kavirondo, ♀ (paratype of *A. cinnamomea*. — Brit. Mus.). — UGANDA: Bulemwezi, ♀ (Brit. Mus.).

It may be noted that all the known localities are from grassland or savanna regions, none from the tropical rain forest. The only specimen I ever caught was resting near the tip of a grass-stalk early in the morning. It made no attempt to escape and was easily caught with the fingers. Lichtwardt (1909, Deutsch. Ent. Zeitschr., p. 651) suggested, from the general build, that *Atriadops* was probably a poor flier, and my observation perhaps lends support to this view.

### 3. *Atriadops javana* (Wiedemann, 1824).

*Colax variegatus* Westwood (1848) and *Atriadops westwoodi* Lichtwardt (1909) are synonyms. I have discussed this species before (1935, Psyche, XLII, p. 137). It is widely distributed in the Indo-malayan Region, being recorded from Ceylon, Laos, Singapore, Formosa, Southern China (Foo-Chow), Sumatra, Java, New Guinea, Duke of York Island, Northern Territory of Australia, Queensland and New South Wales.

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