

NOTES ON NEOTROPICAL TABANIDAE VIII.
THE SPECIES DESCRIBED BY J. C. FABRICIUS¹

BY G. B. FAIRCHILD

Gorgas Memorial Laboratory, Panama, R. de P.

During the summer of 1964 I had the opportunity of studying the types of Neotropical Tabanidae in Copenhagen with the financial aid of a travel grant from the Bache Fund of the National Academy of Sciences.

The existing type specimens of all insects described by Johann Christian Fabricius have recently been reviewed by Dr. Ella Zimsen (1964), of the Universitetets Zoologiske Museum in Copenhagen. The present notes concern only the neotropical Tabanidae. Studies of the Wiedemann types in Copenhagen will appear elsewhere. Fabricius type material was for a long time present in the Museums at Kiel and Copenhagen, but the Kiel collection has recently been deposited in Copenhagen. The Kiel material was much damaged by pests, while the Copenhagen material is generally quite well preserved.

I am greatly indebted to Dr. S. L. Tuxen for permission to study this material, and for comments on the results, and to Dr. Leif Lyneborg and Dr. Ella Zimsen, who helped greatly with advice and hospitality during my visit in Copenhagen.

Wiedemann (1828) discussed and redescribed most of Fabricius' species, and later authors have largely depended on his interpretations, as he studied the Fabrician specimens. More recently Philip (1954, 1960) has reported on a number of the Fabrician types, selected lectotypes, and corrected certain misidentifications. In the following list all the supposedly Neotropical Tabanidae described by Fabricius are cited, together with brief notes on their present condition, taxonomic status and whether deriving from the Kiel (K.) collection or the Copenhagen (C.) collection. Types of all but two species were seen. The species are listed alphabetically by modern genera, or subgenera, the genus in which they were placed by Fabricius added in parentheses where this differs.

As to the localities from which Fabricius' material came, I do not have information more definite than given in his descriptions. It is noteworthy, however, that all of his species from "America meridionali", except *Chrysops moerens* and possibly *Fidena analis*, have since been taken in Surinam or the Guianas. The localities of

¹Manuscript received by the editor February 12, 1966

the remainder, Brasilia, Cajennae, and Americae insulis, have also been confirmed by subsequent collecting.

LIST OF SPECIES

Acanthocera longicornis (Fab.) (Tabanus), 1775, Syst. Ent., p. 790, Brasilia, 1794, Ent. Syst., IV p. 371, Brasilia Mus. Dom. Banks. The species should date from 1775, not 1794, as given by Wiedemann and most subsequent authors. The descriptions are identical. I did not see the type, which should be in B.M., but is apparently lost. The species is the type of *Acanthocera* Macq., 1834.

Catachlorops rufescens (Fab.) (Tabanus), 1805, Syst. Antliat., p. 100, Amer. Merid. Dom. Smidt Mus. de Schestedt. The single type (C.) is intact though faded and dusty. It is labelled "T. rufescens ex Am: Mer: Schmidt". Scutellum white-haired and white transverse bands on at least second to fourth abdominal tergites. Legs entirely dark. Beard, pleura and venter of abdomen entirely dark-haired. Labella large and wholly sclerotized, palpi slender, brown, black-haired. I give here figures of wing and head structures (Fig. 1). Kröber's (1939) *C. rufescens* is entirely different, while the type of his *C. scutellatus* in British Museum agreed closely with notes and figures of type of *rufescens* Fab. (New synonymy).

Chlorotabanus inanis (Fab.) (Tabanus), 1787, Mantissa Insect. II, p. 356, Cajennae Dom. v. Rohr. The name should date as above not 1794 as given by subsequent authors. Philip and Fairchild (1956) have discussed the material in Copenhagen, which consists of but the pin and labels of the original specimen (K.) and another specimen (C.) in fair condition det. by Fabricius from Amer. Merid.

Chrysops costatus (Fab.) (Tabanus) 1794, Ent. Syst. IV, p. 373, without locality; 1805, Syst. Antliat. p. 112, in America meridionali Dom. Smidt. Mus. Dom. Lund. There are three specimens (C.) all in good condition, one of which is labelled type. This agrees with current interpretations. One of the others is *C. ecuadoriensis* Lutz or a related form. The name has been shown to be a synonym of *C. variegatus* (De G.).

Chrysops lacta Fab. 1805, Syst. Antli., p. 112, in America meridionali Dom. Smidt. Mus. Dom. Lund. Philip (1955) has discussed the types and shown that *lacta* auct. is not Fabricius' species. There are 3 specimens, two (C.) in good condition, the other (K.) represented by wings only. The specimen described as *tuxeni* by Philip is *formosa* Kröb., (New synonymy) while the Kiel specimen is probably *C. varians* var. *tardus* Wied. True *lacta* differs from most allied species by the much shortened discal cell. Specimens in

Vienna labelled types are those studied by Wiedemann, and not, of course, true types. They are *varians* var. *tardus*. *C. tenuistria* Kröb., whose type is lost, is very probably a synonym of *laeta* Fab. (NEW SYNONYMY).

Chrysops tristis (Fab.) (*Tabanus*) 1798, Ent. Syst. Suppl., p. 567, Cajennae Dom. v. Rohr. Of the type (K) only the name label remains. Two others specimens (C.) are in the collection, one of which bears a Lectotype label by Philip. Although not strictly types, these specimens were surely studied by Fabricius and Philip's action seems justified in the interests of stability, especially since subsequent workers have applied the name to at least 3 other species. I have an agreeing specimen from Surinam.

Chrysops moerens (Fab.) (*Tabanus*) 1787, Mantiss. Insect. II, p. 356 Cajennae Dom. v. Rohr. The type now consists of a single wing (K.). It is not a Neotropical species and is discussed elsewhere (Fairchild, 1966 in press).

Diachlorus bicinctus (Fab.) (*Tabanus*) 1805, Syst. Antliat. p. 102, America meridionali Dom. Smidt. Mus. Dom. Lund. The single type (C.) lacks one wing. It agrees with current interpretations, and is type of the genus.

Diachlorus curvipes (Fab.) (*Haematopota*) 1805, Syst. Antliat., p. 107, America meridionali Dom. Schmidt. Mus. Dom. de Sehestedt. There are 2 females labelled type (C.) in good condition, and another (K.) not labelled type lacking head and abdomen. The two types agree with current interpretations, the other specimen is too damaged for certainty, but is probably the same.

Diachlorus podagricus (Fab.) (*Haematopota*) 1805, Syst. Antliat. p. 108, America meridionali. Dom. Smidt. Mus. Dom. de Sehestedt. Two females (C.) labelled type in good condition. The type of *D. nigrithorax* Kröb. 1930 in British Museum agrees with my notes on *podagricus*, and I believe is a synonym. (NEW SYNONYMY). Neither Kröber (1928) nor Lutz (1913) recognized the species.

Dichelacera cervicornis (Fab.) (*Tabanus*) 1805, Syst. Antliat. p. 100, America meridionali. Dom. Smidt. Mus. Dom. Lund. Two females in good condition (C.) are labelled types, another (K.) lacks head and abdomen, but is probably the same. All agree with current concepts (Fairchild and Philip 1960).

Dichelacera damicornis (Fab.) (*Tabanus*) 1805, Syst. Antliat. p. 101, America meridionali. Dom. Smidt. Mus. Dom. Lund. Two females in fair condition (C.) are labelled types. Another (K.) consists of but 2 legs and the wings. The types are as treated by Fairchild and Philip (1960); the Kiel specimen is probably the same.

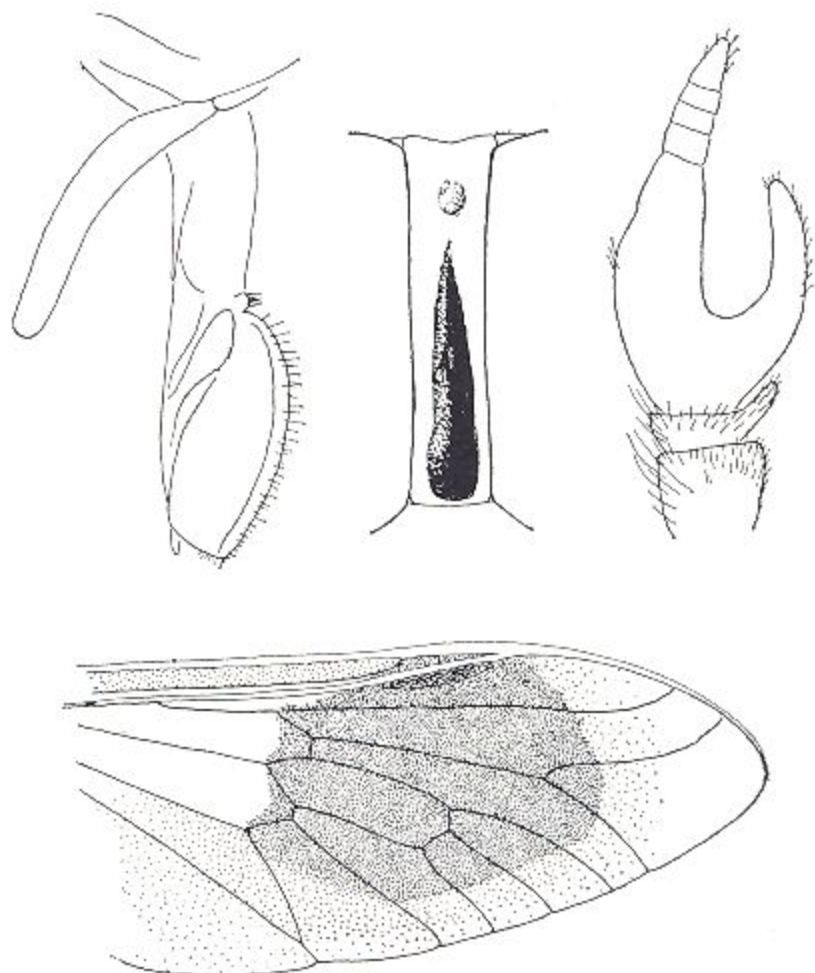
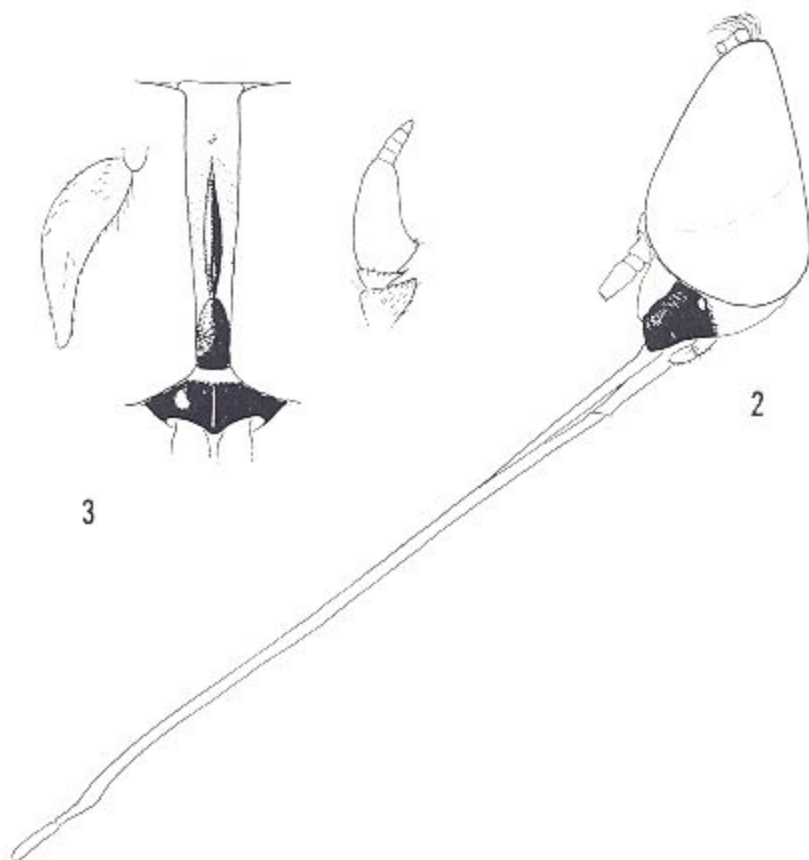


Fig. 1. *Catachlorops rufescens* (Fab.), palpi and proboscis, frons, antenna and wing. Proboscis and frons are to same scale, antenna at twice this magnification and wing about half magnification of frons. Holotype.

Dichelacera T. nigrum (Fab.) (Tabanus) 1805, Syst. Antliat. p. 101. America meridionali. Dom. Smidt. Mus. Dom. Lund. Two females in fair condition (C.) labelled type. Another (K) consists only of fragments of thorax and 1 wing. At least the types agree with current interpretations.

Fulena analis (Fab.) (Pangonia) 1805, Syst. Antliat. p. 91. America meridionali. Dom. Smidt. Mus. Dom. Lund. The type



Figs. 2 and 3. Fig. 2. *Fidena analis* (Fab.), head in side view. Holotype. Fig. 3. *Tabanus trivittatus* Fab., palpus, frons, antennae, all to same scale. Lectotype.

is a male, labelled "P. analis ex Am; Mer; Schmidt." It lacks most of third antennal segments, but is otherwise in good condition (C.). This is not the species so identified by Lutz (1909) or Kröber (1930). The legs are bicolored, femora black, tibiae & tarsi yellow, beard and all thoracic hairs black. Clypeus pollinose dorsally, shiny laterally. Wings entirely glass clear, veins yellowish, blackish only at extreme base. Abdomen plump and inflated, the first two segments blackish, dark-haired, the remainder yellowish or yellowish brown, wholly yellow-haired. Remains of antennae yellow. First posterior cell narrowly open. It is structurally similar to *F. rhino-*

phora Bell. and *F. basilaris* Wied., differing in lacking darkened basal cells and coloring. It is possible that *Fidena oldroydi* Barr. from British Guiana is the female of *analis*, but direct comparison of specimens has not been made, and I had not seen specimens of the former when I studied the type of *analis*. *Oldroydi* seems to differ in having the wing veins brownish and patches of silvery hairs on sides of tergite 2. A figure of the head of the type of *analis* is included here (Fig. 2).

Lepiselaga crassipes (Fab.) (Haematopota) 1805, Syst. Antliat. p. 108, America meridionali Dom. Smidt. Mus. Dom. Lund. A single female (C.) labelled type is in good condition except for lack of antennae. It agrees with current interpretations.

Phacotabanus cajennensis (Fab.) (Tabanus) 1787, Mantissa Insect., II, p. 355. 1794, Ent. Syst., IV, p. 366-367, Cajennae Dom. v. Rohr. The type (K.) is fragmentary, with little remaining but shell of thorax and wings, and not determinable with certainty. Another specimen (C.) has an old determination label and a Metatype label by Philip. It is well preserved, the fore femora and basal halves of others black, agreeing with the darker specimens of the species, as currently understood, common in northern S. America.

Scelasoma tibiale (Fab.) (Tabanus) 1805, Syst. Antliat. p. 102, America meridionali. Dom. Smidt. Mus. Dom. de Schestedt. The type is intact, in good condition, and agrees with current concepts.

Stenotabanus stigma (Fab.) (Tabanus) 1805, Syst. Antliat. p. 104, Americae insulis. Dom. Smidt. Mus. Dom. Lund. Bequaert (1940) examined and reported on the types, which consist of a male and female (C.) in excellent condition. Another specimen (K.) is fragmentary, only body and one wing remaining. I can add nothing to Bequaert's comments.

Tabanus indicus Fab. 1805, Syst. Antliat., p. 103, America meridionali Dom. Smidt. Mus. Dom. Lund. Two specimens labelled type. One bears a label with "T. indicus ex Tranquebar", the other unlabelled, both are in fair condition and from the Copenhagen collection. The specimen from Tranquebar is an oriental species (Tranquebar is a town on the east coast of India). The unlabelled type is the common neotropical species currently being treated as *T. lineola* var. *carneus* Bell., but also represented by the types of *T. dorsiger* Wied. and *T. dorsovittatus* Macq. Philip (in press) has selected the Tranquebar specimen as lectotype, so the name will apply to an oriental species.

Tabanus lineola Fab. 1794, Ent. Syst. IV p. 369, America boreali Mus. Dom. Bosc. As previously noted by Philip (1942), a type

specimen in the Kiel collection is fragmentary, consisting of wings, fore legs, part of thorax and first two abdominal segments almost completely denuded. Specimen bears an old label with "lineola" on one side and "49" on the other. The wings are glass clear, the costal cell not tinted and without appendix on third vein. Fore coxae pale grey pollinose, white haired; femora black, pale haired; tibiae with basal half white, apical half and tarsi black. Thorax blackish with notopleural lobes reddish, as are sides of mesonotum. Scutellum destroyed by pests. First abdominal tergite yellow with a pair of small round submedian dark integumental spots nearly touching in mid-line. Between them there are the remains of a whitish pollinose streak. Second tergite with a broad median dark stripe which is somewhat forked at its posterior end and fails to reach hind margin. This median dark integumental stripe is overlaid by vestiges of a narrow pale pollinose stripe. Nothing in the type contradicts present assignment of the name to the Nearctic form, though absence of scutellum prevents certainty that it is not *sub-similis* Bell. Wholly clear wings rule out Neotropical forms except *columbensis* Macq., which has darker and less contrastingly marked tergites. Use of this name by Kröber (1932) for southern Neotropical material is unwarranted. The Bosc specimen, not found in Paris, is probably lost.

Tabanus pellucidus Fab. 1805, Syst. Antliat., p. 97, America meridionali Dom. Smidt. Mus. Dom. de Schestedt. The type (C) bears an old label with "T. pellucidus ex Am: Mer: Schmidt". It is on an old short pin, is extensively denuded, lacks antennae, mouth parts, palpi, and all legs; hole in subcallus and base of abdomen beneath. The beard and fore coxae white. Abdomen above reddish with traces of white sublateral patches, beneath with broad sublateral white-haired longitudinal bands. Wing veins brown-margined, first posterior cell closed and petiolate. It agreed closely with a homotype of *T. senior* Wlk. in shape of frons and all else remaining, except that wing cell closed further from margin. Another specimen (K.) not labelled type, lacks head, legs and one wing and is very dirty and denuded. In this the cell is open, but the specimen too fragmentary for certain placement. I believe the following names, whose types I have seen, to be synonymous as noted elsewhere (Fairchild 1966a in press). *T. crassicornis* Wied. 1821, *T. albibarbis* Wied. 1824, *T. angustifrons* Macq. 1847, *T. alboater* Wlk. 1850, *T. senior* Wlk. 1850, *T. atricornis* Big. 1892, and probably also *Chelommia amazonensis* Barr. 1949, of which I have not seen the type. The species is variable as to color, brown to black, and the first posterior

cell varies from open to long petiolate. The species was unrecognized by Wiedemann, whose description (1828) differs in notable respects from that of Fabricius, suggesting that he did not see the present type. Subsequent students have done no better with the brief and characterless description.

Tabanus quadripunctatus Fab. 1805, Syst. Antliat. p. 99, America meridionali Dom. Smidt, Mus. Dom. de Sehestedt. The type (C.) bears an old handwritten label "T. 4 punctatus ex Am: Mer: Schmidt" and is on an old short pin. Palpi, proboscis and outer half of left wing missing, but otherwise the specimen in fair condition. I have nothing to add to Philip's (1960) comments on it.

Tabanus trivittatus Fab. 1805, Syst. Antliat., p. 104, America meridionali Dom. Smidt, Mus. Dom. de Sehestedt. The type (C.) is labelled "T. 3 vittatus ex Am: Mer: Schmidt." and bears a red lectotype label of Philip's, who discussed the types (1954). The other specimen labelled type (C.) is det. Philip as *dorsiger* Wied. It lacks the shiny subcallus, but through oversight I did not compare it with the *dorsiger* type in Copenhagen. A final specimen (K) is fragmentary, lacking head and much of abdomen. What remains agrees with the lectotype. The lectotype has orange antennae, the style slightly darker. All femora black. Fore tibiae two-thirds, the others nearly entirely, white. Palpi yellowish, almost wholly black-haired. Frontal callus rugose. Wings very lightly tinted. The rather denuded abdomen shows an even middorsal stripe. I give here a drawing of the type (Fig. 3), which matches closely in proportions of frons and antennae my homotype of *T. callosus* Macq., though slightly larger. Specimens from Surinam are an even closer match to this figure, though I did not have them available in Copenhagen, unfortunately.

REFERENCES

- BEQUAERT, J.
1940. The Tabanidae of the Antilles. Rev. Ent. 11(1-2): 253-369, figs. 1-32.
- FAIRCHILD, G. B. AND C. B. PHILIP
1960. A revision of the Neotropical genus *Dichelacera* subgenus *Dichelacera* Macq. Studia Ent. 3 (1-4): 1-86, Pl. 1-7.
- FAIRCHILD, G. B.
1966. Some new synonymies in Tabanidae. Proc. Ent. Soc. Washington, in press.
- FAIRCHILD, G. B.
1966a. Notes on Neotropical Tabanidae VII. The species described by C. R. W. Wiedemann. J. Med. Ent. In press.
- KRÖBER, O.
1925-1926. Die *Chrysofs*-arten Süd- und Mittelamerikas nebst den arten den Inselwelt und Mexikos. Konowia 4:210-256, 319-375, Pl. 1-5.

1928. Die Amerikanischen Arten der Tabanidensubfamilie Diachlorinae. *End. Beih. z. Arch. f. Schiffs-u. Tropen-Hyg., etc.*, 32(2):73-123, figs. 1-26.
1930. Die Tabanidengattung *Sackenimyia* Big. *Zool. Anz.*, 90(1-2):1-12, figs. 1-6.
1933. Das Subgenus *Neotabanus* der Tabanidengattung *Tabanus* s. lat. *Rev. Ent.* 3(3):337-367.
1939. Das Tabanidengenus *Catachlorops* Lutz. *Verhoff. deutsche Kol. Mus. Bremen*, 2(3):211-232, pl. 13-16.
- LUTZ, A.
1909. Tabaniden Brasiliens und einiger Nachbarstaaten. *Zool. Jahrb., Jena, Suppl.*, 10(4):619-692, Pl. 1-3.
1913. Tabanidas do Brasil e alguns estados vizinhos. *Mem. Inst. Osw. Cruz*, 5(2):142-191, Pl. 12-13.
- PHILIP, C. B.
1942. Notes on Nearctic Tabaninae. Part III. The *Tabanus lineola* complex. *Psyche*, 49(1-2):25-40.
1954. New North American Tabanidae, VII. Descriptions of Tabaninae from Mexico. *Amer. Mus. Novitates*, No. 1695, pp. 1-26, figs. 1-15.
1955. The types of *Chrysops lacta* Fabr. and a new species of Neotropical deerfly in the Copenhagen Zoological Museum. *Ent. Medd.*, 27:70-75.
1960. Further records of Neotropical Tabanidae, mostly from Peru. *Proc. Calif. Acad. Sci., Ser. 4*, 51(3):69-102, fig. 1.
1966. New North American Tabanidae XVIII. New species and addenda to a Nearctic catalogue. *Ann. Ent. Soc. Amer.*, in press.
- PHILIP, C. B. AND G. B. FAIRCHILD
1956. American biting flies of the genera *Chlorotabanus* Lutz and *Cryptotylus* Lutz. *Ann. Ent. Soc. Amer.*, 49(4):313-324, fig. 1 and Pl. 1.
- WIEDEMANN, C. R. W.
1828. *Aussereuropaische zweiflugelige Insekten*, 1:1-XXXII, 1-608, Pl. I-VIb.
- ZIMSEN, ELLA
1964. The type material of J. C. Fabricius, Copenhagen, 1964, pp. 1-660.