

On *Tabanus tropicus* and other Linnean Species of Palaearctic *Tabanidae* (Diptera).

By Leif Lyneborg
Zoological Museum, Copenhagen.

During a visit to London in July 1960 the writer had the opportunity of studying some Linnean types of *Tabanidae*. The Linnean specimens were taken from the Linnean Society to the British Museum (Natural History) on the request of Mr. H. Oldroyd, to whom the writer is greatly indebted for his help, kind advice and guidance during the visit.

In the *Systema Naturae* from 1758 (p. 601—602) Linnaeus describes twelve species of his genus *Tabanus*. Only six are palaearctic, i. e. No. 1. *bovinus*, No. 3. *tarandinus*, No. 7. *bromius*, No. 9. *tropicus*, No. 11. *pluvialis* and No. 12. *caecutiens*. Linnaeus mentions the same six species in *Fauna Svecica* (1761, p. 462—464), and adds *autumnalis* and *lugubris*. The 12th edition of *Systema Naturae* (1767, p. 999—1001) enumerates 19 species of *Tabanus*, including all the above mentioned 14 species. The five new ones are *rostratus*, *barbatus*, *mauritanus*, *rusticus* and *morio*; *rusticus* being the only new palaearctic species. Hence Linnaeus described altogether nine palaearctic species, and the recent generic position of these is as follows:

1. *Tabanus* (subgenus *Tabanus*) *bovinus*
2. — (— *Hybomitra*) *tarandinus*
3. — (— *Tabanus*) *bromius*
4. — (— *Hybomitra*) *tropicus*
5. *Haematopota pluvialis*
6. *Chrysops caecutiens*
7. *Tabanus* (subgenus *Tabanus*) *autumnalis*
8. *Chrysops lugubris*
9. *Tabanus* (subgenus *Atylotus*) *rusticus*

All the species are present in the Linnean Collection, and the material will be discussed in the following.

1. *Tabanus bovinus* Linnaeus 1758.

There are four females belonging to four different species in the series under this name. The specimen carrying the old label

written by Linnaeus himself, "*bovinus*", is of the well-known *Tabanus autumnalis*, which was described by Linnaeus in *Fauna Svecica* (1761, p. 462). The second specimen is a female of the species known as *bovinus* of many continental authors with reference to Loew 1858. The third specimen is either *sudeticus* Zeller 1842 or *verralli* Oldr. 1939. It bears a label marked "Westmord 1782", which would seem to indicate that it is not from the original syntypic series. The same applies to the fourth specimen, which is not of an European species.

P. 462 in *Fauna Svecica* Linnaeus gives the following brief description of *bovinus*: "Oculis virescentibus, abdominis dorso maculis albis trigonis longitudinalibus" and of *autumnalis*: "Alis hyalinis, abdomine fusco ordine triplici albido maculosus". Linnaeus remarked on the clear green eyes in *bovinus* (not dark as in *autumnalis*) and from his statement on the middle triangles of the abdominal tergites it is abundantly clear that he cannot have had an *autumnalis* before him when describing his *bovinus*. It may thus be assumed that the label has been moved or misplaced. Consequently the second specimen is selected as a lectotype to *bovinus* Linnaeus, which may be identical to *bovinus* of Loew.

2. *Tabanus tarandinus* Linnaeus 1758.

Three females are present under this name, all belonging to this easily recognizable species. Two are dried like plants in a herbarium on a sheet of paper bearing the inscription of "2 *Tarandinus* 1046". Number three is pinned, and although the condition of this specimen is good, the antennae have been lost.

3. *Tabanus bromius* Linnaeus 1758.

Two females are present, one bearing the label "7. *Bromius*" and being the same as the species generally called *bromius* L. It is assumed therefore to be the type. The other female is a *Tabanus maculicornis* Zett. 1842. The condition of the type is good, only the left wing has been lost.

4. *Tabanus tropicus* Linnaeus 1758.

When the paper (Lyneborg 1959) on the Danish *Hybomitra*-species was being prepared, Mr. J. E. Collin in Newmarket examined the specimens under this name in the Linnean Society in London. Mr. Collin's remarks are given p. 97—98 in the pa-

per, and after examination of the types the writer agrees with his conclusions in all details.

Four specimens are present under the name of *tropicus*. Only two can be of the original syntypic series, as one bears a label giving its origin as the East Indies, and number four is a different and much larger species, not of "Magnitudo Bombylii" as stated by Linnaeus in *Fauna Svecica* (1761, p. 463).

One of the two specimens from the original syntypic series carries a label written by Linnaeus of "*9. tropicus*" and this specimen has been selected as a lectotype. Although its condition is quite good the third antennal joints and parts of the wings have been lost. In the writer's opinion the second specimen belongs to the same species as the lectotype, the antennae in this specimen hanging in threads of mould.

The true *tropicus* of Linnaeus is a species of the subgenus *Hybomitra*, and is closely related to *montana* Meig. and *lundbecki* Lyneb. (= *fulvicornis* auct. nec Meig.), and it appears to have been confused with these species by many authors. The females of the three species may be distinguished by means of the following key.

1. Third antennal joint broad and reddish brown (fig. 1). Notopleural calli as a rule blackish *Hybomitra lundbecki* Lyneb.
- .. Third antennal joint narrower and partly black, but often brownish on basal half (fig. 2—3). Notopleural calli as a rule brownish 2.
2. Abdominal pubescence golden-yellow. Frontal stripe and frontal triangle with yellowish dust. Wing-membrane having greyish tinge as a rule. Larger species: 15,5—18 mm. *Hybomitra tropica* L.
- .. Abdominal pubescence grey. Frontal stripe and frontal triangle with greyish dust. Wing-membrane with a yellowish tinge. Smaller species: 12,5—16 mm *Hybomitra montana* Meig.

Preparations of the 8th sternite in the females of the three species have recently been made by the writer, and there seem to be obvious differences, as can be seen in fig. 4—6. Mr. Collin has made a preparation of the Linnean type, and the structure of the 8th sternite in this specimen corresponds in all details with fig. 5, which is drawn from a Danish specimen.

The true *H. tropica* L. is identical with the species recently named *tuxeni* (Lyneborg 1959, p. 133). Together with *lundbecki* Lyneb., *montana* Meig. and *staegeri* Lyneb. this species forms the *montana*-group, which is characterized by its broad frontal stripe, and by its lower frontal callus being normally broader

than it is high, and smooth not transversely wrinckled. Furthermore the palpi are slender, the antennal bow broader towards the middle line, and the second sternite always has a squarish dark spot.

All those species which in the last 80 years have been named *tropicus* with reference to various authors (e. g. Linnaeus, Panzer, Meigen and Brauer) belong in the writer's *bimaculata*-group, where

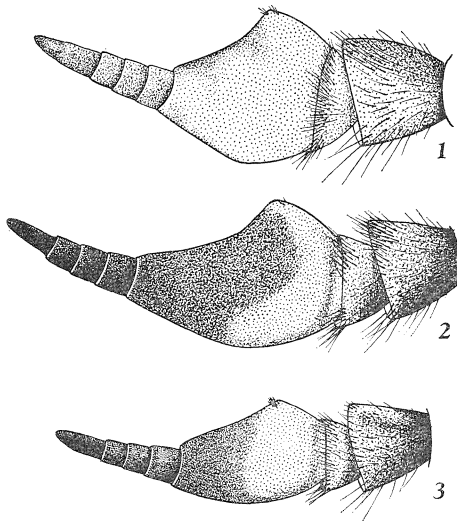


Fig. 1—3. Antennae in the females of 1: *Hybomitra lundbecki* Lyneb., 2: *H. tropica* L. and 3: *H. montana* Meig.

the frontal stripe is narrower, the lower frontal callosity is higher than it is broad and usually transversely wrinckled. Furthermore, the species in this group have the palpi thickened at the base, the antennal bow of equal width, and in the second sternite in most species, the dark, square spot is absent. The *tropicus* Panz. of most continental authors is mainly *collini* Lyneb. (1959, p. 94); the *tropicus* L. of Goffe (1931, p. 93) and Oldroyd (1939, p. 96) is the species the writer mentions as *mühlfeldi* Brau., although

a few *collini* are intermixed. Note: The species which has been named *mühlfeldi* Brau. in accordance with the male type in Vienna will possibly have a change of name.

To avoid complications which may be caused by applying the name *tropicus* to a third species, it was therefore (Lyneborg 1959, p. 99) proposed that this name should be suppressed in favour of *tuxeni*. On this subject, Mr. H. Oldroyd (in litt. 5th April 1960) wrote to the writer that he has asked Dr. W. E. China, who is the Assistant Secretary of the International Commission, and he means that the Commission will be rather reluctant to use its Plenary Powers in this case, because *Tabanus tropicus* is not a species of any economic importance and its use has for a long time been so uncertain that there is no "accepted usage" that is being upset. Therefore the proposal to sup-

press the name *tropicus* has been withdrawn, and in the future the name *tuxeni* Lyneb. will be synonymous with *tropicus* L.

The writers notes on the distribution of *H. tropica* L. are rather few. In Denmark it is a fairly common species known from Zealand, Lolland and the southern and central parts of Jutland. Four German specimens have been seen, one labelled "Berlin Finkenkg.". Furthermore two females were sent to the writer by Dr. Moucha in Prague as *montana* Meig. originating from Polečnice in Bohemia. In the Natural History Museum of Vienna three females were discovered amongst a large collec-

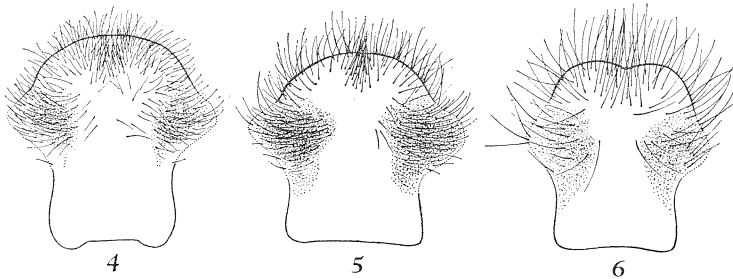


Fig. 4—6. 8th sternite in the females of 4: *Hybomitra lundbecki* Lyneb., 5: *H. tropica* L. and 6: *H. montana* Meig.

tion of *H. montana* Meig. They were identified as *montana* Meig. by Dr. P. Trojan in 1959, and they originate from (1) Harz, Coll. Winthem, (2) Aggsbach, Austria Inf. 6. V. 1934, Zerny, and (3) Wienerwald, Bischof. Two have been seen by Szilady and were identified by him as *v. fulvicornis*. In the collections of the British Museum I found one female from Eclépens (France?) collected by Fletcher. Apparently the species does not occur in Britain, as no specimens were found in the British Museum, nor in the Hope Department of Entomology in Oxford where Goffe's collection is displayed.

5. *Tabanus pluvialis* Linnaeus 1758.

Three females are present, one with the label "*pluvialis*" written by Linnaeus. This specimen is obviously the type and is the same species as the well-known *Haematopota pluvialis* L. of many authors. The second specimen is without a label, and the third one is labelled "Angl. Es." Both these specimens are also *pluvialis* L.

6. *Tabanus caecutiens* Linnaeus 1758.

Four females of *Crysops* were found under this name, belonging to two well-known species. Three specimens of the species *pictus* Meig. (= *quadratus* Meig.) are present, one bearing the original label of Linnaeus marked "*caecutiens*"; the other two *pictus*-specimens being without labels. The fourth female is of the species generally known as *caecutiens* L., but it is labelled "Angl. Nuds" which makes it seem less likely that it is of the original syntypic series. It would be feasible to select the specimen with Linnaeus' label as a lectotype to *caecutiens*, whereby *pictus* of Meigen is reduced to a synonym and *caecutiens* L. s. auct. would require a new name. However in order to avoid this awkward change of name, the writer prefers to select the fourth specimen, "Angl. Nuds", as a lectotype to *caecutiens* L. There are three reasons for doing so: 1) All four specimens form the material of Linnaeus, 2) As has been noticed, the labels have frequently been misplaced and 3) The preamble to the new rules of nomenclature expressly states that they all shall be subservient to ensuring stability and universality in the scientific names of animals.

7. *Tabanus autumnalis* Linnaeus 1761.

No label of "*autumnalis*" is found in the Linnean collection, but a single female specimen of this easily recognizable species is present in the series of *bovinus*, and bears the original label by Linnaeus marked "*bovinus*". This specimen has been discussed on p. 98 and the fact has been established that it cannot be the type to Linnaeus' *bovinus*. It is impossible to state with any certainty whether it is the type to *autumnalis*. Alternatively the type may be found in De Geer's collection in Stockholm, as Linnaeus (1761, p. 462) mentions his name in connection with the species.

8. *Tabanus lugubris* Linnaeus 1761.

This species is taken to be synonymous with *caecutiens*, and in the Linnean collection two *Chrysops*-males were found under the name of *lugubris*. Both specimens could easily be recognized as males of *Chrysops caecutiens* L. by their black coloration.

9. *Tabanus rusticus* Linnaeus 1767.

Three specimens are present, two of them (a male and a female) belonging to the species, which is well-known under this

name. The male is labelled "*rusticus*". The female has been selected as a lectotype, as in this family it is better to have female types. The condition of the type is excellent. The third specimen belongs to a species unknown to the writer.

Literature.

- Goffe, E. Rivenhall, 1931: British *Tabanidae* (*Diptera*). With an account of the principal variation. With descriptions of a number of new forms, and of some additions to the British list. Trans. Ent. Soc. S. of England 1930: 43—114, 2 pls.
- Linnaeus, C., 1758: Systema Naturae. Ed. 10. Tom I. Holmiæ.
- 1761: Fauna Svecica. Stockholmia.
- 1767: Systema Naturae. Ed. 12. Tom I, Pars II. Holmiæ.
- Lyneborg, Leif, 1959: A revision of the Danish species of *Hybomitra* End. (*Dipt. Tabanidae*). With descriptions of five new species. Ent. Medd. XXIX: 78—150.
- Oldroyd, H., 1939: *Tabanidae* in: Edwards, F. W., Oldroyd, H., and Smart, J.: British Bloodsucking Flies. London.

Anmeldelse.

Franz A. Roedelberger: **Forunderlige natur**. Dansk tekst ved Bernt Løppenthin. Kbh. 1961 (Lohse). Kr. 38.— ib.

En forunderlig Bog, der har det tilfælles med en god Roman, at man strax anbringes i medias res. Først paa sidste Side finder man ud af, at Forf. er Schweizer, og det forklarer det mærkelige Faktum, at alle Dyregrupper omtales to Gange, nemlig tilsidst specielt for Schweiz. Men alligevel bliver man ikke klar over Ledetraaden for Billedernes Valg og deres Rækkefølge. Et lille Forord havde været Guld værd.

Men Fotografierne — og det hele er en Billedbog med ledsagende Text — er straalende gode, morsomme, karakteriserende og vel gengivne. Dansk Text ved Bernt Løppenthin staar der, og det skal forstaas bogstaveligt, for uden at kende Originaltexten mærker man, at den danske er helt selvstændig og helt tager Sigte paa danske Forhold, i et fængslende og oplysende Sprog. To Steder (naturligvis) skal Insekterne søges, ialt 35 Sider med Fotografier, hvoraf nogle er af en sjælden god Virkning, som f. Ex. et af æglæggende Vandnymfer. Det er en af de Bøger, man glæder sig over at blade og fordybe sig i, og hvor det rige Billedmateriale ikke har et anal-fabetisk Sigte; den der kan læse faar en Masse Viden med. En oplagt Gave-bog; forbløffende billig.

S. L. Tuxen.
