

A NEW SYNONYMY IN THE HORSEFLY GENUS *HYBOMITRA* (DIPTERA:
TABANIDAE)

Theo Zeegers

The taxonomy and nomenclature of *Hybomitra solstitialis* is critically revised. Based on a re-examination of the type, *H. solstitialis* is found to be identical with the species currently known as *H. ciureai* syn. nov. Since the 1950s the name *H. solstitialis* has been misinterpreted in European literature. This concept, introduced by Lyneborg, is shown to be a light coloured variety of *H. bimaculata*.

INTRODUCTION

The horseflies (family Tabanidae) are a median sized family (about 170 species in Europe, Chvála et al. (1972)) of median to very large flies (6-25 mm). Females are notorious for sucking blood on both humans and livestock. In the palearctic region, the tribe Tabanini of the subfamily Tabaninae is the most abundant group of horseflies. In the palearctic region the horsefly genera are well defined. Identification of species is often difficult due to variability in coloration and paucity of structural features. Identification is especially challenging in the genus *Hybomitra* Enderlein, 1922, characterized by the presence of an ocellar tubercle on the vertex.

The discovery by Lyneborg (1959) of the importance of the shape of the subgenital plate, especially in the *H. bimaculata*-group, was a major breakthrough in the taxonomy of the genus *Hybomitra*. Unfortunately, he distinguished too many species due to underestimating of the colour variation. This was largely corrected by Chvála et al. (1972), introducing a system that has been followed since (Moucha 1976, Olsufjev 1977, Trojan 1979, Timmer 1980, Chvála 1988, Zeegers & Van Haaren 2000, Stubbs & Drake 2001, Portillo 2002).



Figure 1-2. Holotype of *Tabanus solstitialis*, 1. dorsal, 2. frontal. Source MNHN.

Figuur 1-2. Holotype van *Tabanus solstitialis*, 1. dorsaal, 2. frontaal. Bron MNHN.

HYBOMITRA BIMACULATA-GROUP

The *Hybomitra bimaculata*-species group is characterized by the narrow and tapering frons in the female (length / width index 1 : 4.5 or larger), wrinkled lower callus, relatively stout second segment of the palpus and red tibiae. The male has long hairs on the first antennal segment and usually a bunch of long hairs on the vertex, which are bent forwards at their tip. The *H. bimaculata*-group is represented in the western Palearctic by four well-known and widespread species:

H. bimaculata (Macquart, 1826), *H. distinguenda* (Verrall, 1909), *H. muhlfeldi* (Brauer, 1880) and the species generally known as *H. ciureai* (Séguy, 1937). *H. muhlfeldi* is often spelled *muehlfeldi*, however, *muhlfeldi* is the correct spelling according to art. 27 of the Code. To this group also belong two cryptic and rarely reported species: *H. solstitialis* (Meigen, 1820) sensu Lyneborg (1959) and *H. ukrainica* (Olsufjev, 1952). I will argue that Lyneborg (1959) misinterpreted *H. solstitialis*.

Since in this group vernacular names are actually more stable than scientific names, for convenience of the reader I add both English and Dutch vernacular names, following Stubbs & Drake (2001) and Zeegers & van Haaren (2000), respectively.

Hybomitra solstitialis (Meigen, 1820) nec Lyneborg (1959)

UK: Levels Yellow-horned Horsefly

NL: Rosse knobbeledaas

= *ciureai* (Séguy, 1937) **syn. nov.**

= *schineri* Lyneborg, 1959

Meigen (1820) described *Tabanus solstitialis* with the following characterization (in translation) 'antenna completely reddish yellow, only black at the tip'. The holotype, female, is still present in Muséum national d'histoire naturelle in Paris (MNHN), catalogue number ED 4590 (fig. 1-2). It belongs to the *H. bimaculata*-group and the first three antennal segments are totally orange and

the tip is black, in complete agreement with the original description. The notopleural lobe is completely yellow. These features and the coloration of the abdomen demonstrate that the holotype belongs to the species currently known as *H. ciureai* (Séguy, 1937) **syn. nov.**, which was originally described as a variety of *H. solstitialis*. The old name by Meigen has priority. The interpretation of Schiner (1862) of *H. solstitialis* is consistent with Meigen (1820).

A history of mistakes

It is remarkable to see how *H. solstitialis* (Meigen, 1820), well established by Schiner (1862), Brauer (1880) and Verrall (1909), got confused in history. Verrall (1909) based his interpretation on a study of the type. He questioned whether his interpretation was identical with that of the continental authors. From this question, Lyneborg (1959) jumped to the conclusion that Meigen's species had been misinterpreted by Schiner (1862), without studying the type or presenting any real evidence for this opinion. To fix this supposed misidentification, he proposed *H. schineri* as a new name for *H. solstitialis* sensu Schiner, for which later the name *H. ciureai* (Séguy, 1937) proved to be available. Following Lyneborg's lead, Leclercq (1966) did study the type and rightly concluded it was not a light form of *H. bimaculata*. He failed, however, to observe that it was conspecific with *H. ciureai*.

Hybomitra solstitialis sensu Lyneborg 1959 nec Meigen (1820)

UK: Scarce-Forest Horsefly

NL: Bastaardknobbeledaas

= *bimaculata* (Macquart, 1826)

Lyneborg (1959) believed a fifth species to be present in the material of the *H. bimaculata*-group from both England and Denmark. According to him, it was characterized by the pleura with light hairs only, first antennal segment orange covered with grey, dark notopleural lobe,

female with short subgenital plate and male without enlarged upper eye facets. The last three features are shared with *H. bimaculata* and also the second is sometimes seen in *H. bimaculata*. Therefore, Zeegers & van Haaren (2000) focused completely on the light hairs on the pleura (and fore femur) to separate *H. solstitialis* sensu Lyneborg from *H. bimaculata*. I have learned since, that both light-haired and intermediate forms are rare in western Europe, but more common to the east, in for instance Finland (Kahanpää et al. 2014) and that there are many intermediate individuals. It is probably no coincidence that *H. solstitialis* sensu Lyneborg was not accepted by two eastern authors: Olsufjev (1977) and Trojan (1979). Also Portillo (2002) considered *H. solstitialis* sensu Lyneborg and *H. bimaculata* to be synonymous. Given all evidence presented above, I have to agree. *Hybomitra solstitialis* sensu Lyneborg (1959) is a light colour variation of *H. bimaculata*.

ACKNOWLEDGEMENTS

I thank the Musée national d'histoire naturelle in Paris for publishing photos of Meigens types on their website.

REFERENCES

- Brauer, F. 1880. Die Zweiflügler des kaiserlichen Museums zu Wien I. – Denkschriften der kaiserlichen Akademie der mathematischen naturwissenschaftlichen Wissenschaften, Wien 42: 105-216.
- Chvála, M. 1988. Family Tabanidae. – In: Á. Soós & L. Papp eds., Catalogue of Palaearctic Diptera, volume 5: Athericidae - Asilidae. Akadémiai Kiadó, Budapest: 97- 171.
- Chvála, M., L. Lyneborg & J. Moucha 1972. The horse flies of Europe (Diptera, Tabanidae). – Entomological Society of Copenhagen, Copenhagen.
- Kahanpää, J., K. Winqvist & Th. Zeegers 2014. Checklist of the 'lower Brachycera' of Finland: Tabanomorpha, Asilomorpha and associated families (Diptera). – Zookeys 441: 165-181.
- Leclercq, M. 1966. Révision systématique et biogéographique des Tabanidae (Diptera) Paléarctiques. Volume II, Tabaninae. – Institut royal des sciences naturelles de Belgique Mémoires, deuxième série, 80: 1-237.
- Lyneborg, L. 1959. A revision of the Danish species of *Hybomitra* End. (Diptera, Tabanidae). With description of five new species. – Entomologiske Meddelelser 29: 78-150.
- Meigen, J.W. 1820. Systematische Beschreibung der bekannten europäischen zweiflügeligen Insecten, vol. 2. – Aachen.
- Moucha, J. 1976. Horse-flies (Diptera: Tabanidae) of the World, Synoptic Catalogue. – Acta entomologica Musei nationalis Pragae, Supplement 7: 1-319.
- Olsufjev N.G. 1977. Slepni, semejctvo Tabanidae. Fauna SSSR, Nasekomye dvukrylye, Tom 7, vyp. 2. – Akademiya Nauk SSSR, zoologicheskij instityt, Leningrad.
- Portillo, M. 2002. Diptera, Tabanidae. – Museo Nacional de Ciencias Naturales, Madrid. [Fauna Ibérica 18]
- Schiner, J.R. 1862. Fauna Austriaca, Die Fliegen. I. Theil. – Verlag von Carl Gerold's Sohn, Wien.
- Stubbs, A. & M. Drake 2001. British Soldierflies and their allies. – British Entomological and Natural History Society, Reading.
- Timmer, J. 1980. De dazen (Diptera, Tabanidae) van de Benelux-landen. – Koninklijke Nederlandse Natuurhistorische Vereniging, Hoogwoud. [Wetenschappelijke Mededeling 138]
- Trojan, P. 1979. Tabanidae, ślepaki (Insecta: Diptera). – Państwowe wydawnictwo naukowe, Warszawa. [Fauna Polski 8]
- Verrall, G.H. 1909. Stratiomyidae and succeeding families of the Diptera Brachycera of Great Britain. – Gurney & Jackson, London. [British Flies 5]
- Zeegers, Th. & T. van Haaren 2000. Dazen en dazenlarven. – KNNV Uitgeverij Wetenschappelijke Mededelingen 225: 1-114.

SAMENVATTING

Een nieuwe synonymie in het dazengenus *Hybomitra* (Diptera: Tabanidae)

De taxonomie en nomenclatuur van *Hybomitra solstitialis* is kritisch gereviseerd. Bij herbeschouwing van het type van *H. solstitialis* bleek deze identiek met *H. ciureai* **syn. nov.** Sinds de jaren 1950 is de naam *H. solstitialis* verkeerd geïnterpreteerd in de Europese literatuur. Het concept zoals geïntroduceerd door Lyneborg blijkt een licht gekleurde variëteit van *H. bimaculata*.

Th. Zeegers
EIS Kenniscentrum Insecten
theo.zeegers@naturalis.nl