

## NEW SPECIES OF THE GENUS *Tabanus* LINNAEUS, 1758 (DIPTERA: TABANIDAE) FROM MALAYSIA

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### ABSTRACT

Tabanids are true flies, with medical and veterinary importance. In the current report, a new species; *Tabanus zuhairi* sp. nov. is described. Main taxonomic characters including antennae, frons, and palpi are illustrated. The new species is recognized based on the cross-band of the wing and shiny subcallus.

**Keywords.** *Tabanus zuhairi*, new species, Malaysia

### ABSTRAK

Tabanidae merupakan lalat sebenar yang mempunyai kepentingan yang penting dalam bidang veterinar. Satu spesies baru, iaitu, *Tabanus zuhairi* sp. nov. telah berjaya ditemui dalam kajian ini. Ciri-ciri taksonomi utama termasuk antena, frons, dan palpi telah diperihalkan. Spesies baru ini dikenalpasti berdasarkan jalur melintang pada sayap dan subkalus yang berkilat pada sayapnya.

**Kata kunci:** *Tabanus zuhairi*, spesies baru, Malaysia

### INTRODUCTION

Family Tabanidae belongs to the order Diptera and suborder Brachycera. It includes true flies with cosmopolitan distribution in all continents except Antarctica (Pechuman et al 1983; Mullens 2009). These flies are bloodsucking insects that attack human and animals. Flies of the family Tabanidae are commonly known as horse flies, gadflies, stouts, elephant flies, buffalo flies, moos flies, deer flies, clegs, and green head flies (Pechuman 1973).

Flies of the family Tabanidae are large with a length ranging from six to ten mm in the smaller species and up to 30 mm in large ones. They have bean-like head, occupied mainly by the eyes. The eyes are separated by frons in the females while in the males the eyes are adjacent.

Mouthparts of the females are adapted for blood sucking and lapping, while males feed on nectar (Gunn 2012). Because of feeding habit, the females are considered as major

disease vectors of man and animals. Several tabanids can act as biological vectors as well as mechanical vectors (Muzari 2010).

Mackerras (1954; 1955a, b) divided the family Tabanidae into four subfamilies; Chrysopsinae, Pangoniinae, Sceptidinae and Tabaninae. According to Mackerras, subfamilies Pangoniinae and Sceptidinae include non-biting species, whereas the other two subfamilies include blood-sucking flies of economic and medical importance.

The family Tabanidae in Malaysia has not been studied well as compared to other Oriental countries like Thailand (Burton, 1978) and India (Datta 1985, Maity et al. 2015). Burton (1978) described 31 new species and he considered the Oriental region as a taxonomic frontier for further studies. Maity et al. (2015) listed 244 species under 15 genera from India. However, the tabanids of Malaysia did not draw attention since the description of *Mesopangonius* as a new genus for the Malaysian fauna (Burger 1988).

Al-Talafha et al. (2016; 2017) recorded new records for 14 species from collection of Center for Insect Systematics, Universiti Kebangsaan Malaysia (UKM). However, the aim of this paper is to describe a new species of the genus *Tabanus*.

## MATERIAL AND METHOD

The collection of Tabanidae from Centre for Insect Systematics (CIS), Universiti Kebangsaan Malaysia was examined. A total of 75 dried specimens were identified using keys provided by Ricardo (1911a,b), Schuurmans Stekhoven (1926), Szilady (1926), Philip (1960a,b), and Burton (1978). The main taxonomic characters of the new species are illustrated using stereomicroscope Stemi D4, and a complete description was provided. For the description, the terminologies by Mcalpine (1989) were followed. Type specimen were deposited in Center for Insect Systematics, Universiti Kebangsaan Malaysia.

## RESULTS

### Taxonomy

*Tabanus zuhairi* sp. nov. belongs to the subfamily Tabaninae and genus *Tabanus* Linnaeus, 1758.

Subfamily Tabaninae

Tribe Tabanini

***Tabanus zuhairi* sp. nov.  
(Female, Figure 1)**

**Type material.** HOLOTYPE: female, Pahang, Lipis, Merapoh, 8-15.iv.2002, Azura & Ruslan, CIS (UKM).

**Diagnosis:** Small black species; frontal callus narrow with short thick linear extension, fused with shiny subcallus; wing with distinct brown crossband.  
Female. Body length: 11.3 mm. Wing length: 8.9 mm

**Head.** Eyes banded, three horizontal yellow bands in purple ground. Frons (Figure 1a) narrow, slightly divergent above, index 7, tomentum gray, upper 1/4 brown, vertex with black hair. Callus black, narrow, tapering into thick linear dorsal extension, fused with subcallus basally, reaching eye margin. Subcallus bare, blackish brown shiny; clypeus, parafacial and gena black tomentose, black haired; beard black. Antenna (Figure 1c) scape small, brown, black haired, without cap-like projection over pedicel; pedicel brown with spur, black fringed; flagellum dull brown, lighter at base, basal flagellomere slender, very long, with obtuse dorso-basal projection, 1.6 times length of darker stylus (basal flagellomere = 0.88 mm, stylus = 0.56 mm). Maxillary palpus (Figure 1b) with basal palpomere black, black haired; apical palpomere right angle-shaped, grayish black, black haired, stout at base, tapering apically.

**Thorax.** Scutum and scutellum black tomentose, black haired; notopleural lobe black, black haired. Pleura black, black haired; tuft of anepisternum, katapisternum and katatergite black. Wing with distinct median brown band reaching hind border, costal cell tinted dark brown, radial cell  $r_5$  open, spur vein absents. Halteres with white knob and stem. Legs: coxae with black tomentum and black hair; femora black, black haired; tibiae white, white haired, fore tibia black apically with black hair, apices of mid- and hind tibiae yellowish brown; tarsi black.

**Abdomen.** Dorsum and venter black, uniformly black haired.

**Remarks:** Infuscation of the wing is very helpful to identify species of the family Tabanidae. Stekhoven (1926) used the tint pattern of the wing to distribute species of *Tabanus* among groups in his monograph. Also, Philip (1960a) used the wing with crossband or without as a key characteristic to separate his key at couplet 20.

Moreover, Burton (1978) described *T. mesogaesus* as a new species, which is closely related to *T. ceylonicus* (Schiner 1868). Both species have, in common, black beard and tomentose frontoclypeus. However, *T. ceylonicus* has a dark apico-costal area, which is essentially hyaline in *T. mesogaesus*. This area, according to Burton (1978), helps to distinguish *T. ceylonicus* from *T. mesogaesus*.

*Tabanus zuhairi* sp.nov. superficially resembles members of *T. ceylonicus* group. This group includes flies with uniformly black to brown body, bare and shining subcallus, and distinct bicolored legs (black femora, white tibiae).

The new species has shiny subcallus and patternless black abdomen, which put it in the *T. ceylonicus* group. At the same time, it presents a banded wing, whereas all members of *T. ceylonicus* group do not. Moreover, the long and thin basal flagellomere, comparing with all other flies of the group, makes this species distinctive. So, there is no hesitation to describe it as new, although it is represented by one female specimen.

**Etymology:** This species is named for Prof. Dr. Zuhair Sami Amr from Jordan University of Science and Technology, for his mentorship and support throughout the master degree of the first author.

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**APPENDICES**

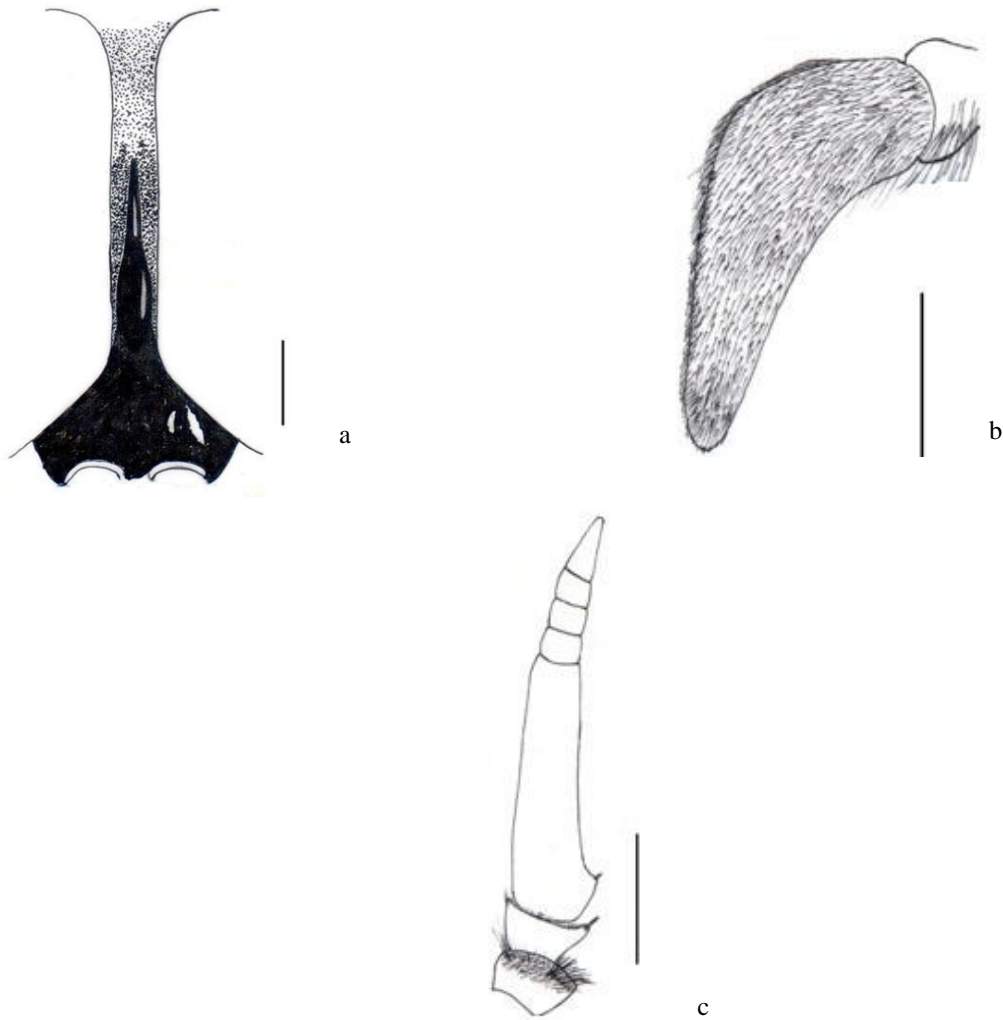


Figure 1 Main taxonomical features: (a) frons, (b) palpi, (c) antenna.