

THREE NEW SPECIES OF THE GENUS *TABANUS* L. (DIPTERA : TABANIDAE)
FROM ARUNACHAL PRADESH, INDIA

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ABSTRACT

Three new species, viz., *Tabanus dominus*, *T. minusculus* and *T. kamengensis*, are described and illustrated from Arunachal Pradesh, India. The tabanid fauna of the State is also reviewed.

While dealing with the genera *Tabanus* L. and *Haematopota* Mg. of the family Tabanidae from Meghalaya, review of the relevant literature on the Indian fauna has been made (Datta and Biswas, 1977). In fact, knowledge on the family from Arunachal Pradesh is limited to the works by Philip (1970), Joseph and Rao (1972 a and b), Joseph and Parui (1973 and 1977) and, Joseph and Ray (1976). Of these authors, Philip (*op. cit.*) has described two species belonging to the genus *Tabanus* L. and two species to *Cydistomyia* Taylor; while others' works concern the distribution only. This paper presents illustrated descriptions of three new species of *Tabanus* from Arunachal Pradesh (a part of erstwhile Assam, also called NEFA in the previous literature).

The type-specimens are deposited in the National Zoological collection of the Zoological Survey of India, Calcutta.

DISTRIBUTIONAL RECORDS IN
ARUNACHAL PRADESH

It has already been pointed out by Datta

and Biswas (*op. cit.*) that the distributional records of the Tabanidae in India are sometimes confusing, since, for example, Bigot (1892) frequently used "India" only for Assam to define the type-locality of certain species (Ricardo, 1911). Moreover, Arunachal Pradesh having its own characteristic mountainous terrain with diverse ecological niches may be relegated to have fauna of some distinction from that of the then Assam. It is, however, believed that a few more species occurring in the adjacent areas may eventually be included in the fauna of the State, wherefrom some widely distributed elements have been reported. Despite this in view, only those species which have definitely been reported from the jurisdiction of this State, are mentioned below: *Tabanus scutellus* Philip, *T. pullomaculatus* Philip, *Cydistomyia assamensis* Philip, *C. mouchai* Philip and *T. striatus* F. reported by Philip (1970); *Hybomitra hirta* (Walker) = *T. (Therioplectes) hirtus* by Joseph and Rao (1972 a); *Tabanus nephodes* Bigot, *T. auriflamma* Walker, *T. monotaeniatus* (Bigot), *Haematopota assamensis* Ricardo, *Chrysops*

dispar (F.) and *C. designata* Ricardo by Joseph and Rao (1972 b); *Tabanus rubidus* Wiedemann, *T. fuscomaculatus* Ricardo and *Philoliche longirostris varipes* (Ricardo) (= *Pangonia longirostris varipes* Ricardo) by Joseph and Parui (1973) and, *abanus jucundus* Walker by Joseph and Ray (1976).

SYSTEMATIC ACCOUNT

Subfamily TABANINAE

Tribe TABANINI

Genus *Tabanus* Linnaeus

Tabanus Linnaeus, 1758, Systema Naturae, 10 : 601.

Type-species : *Tabanus bovinus* Linnaeus (Latreille, 1810 : 443)

1. *Tabanus dominus* sp. n.

(Figs. 1-A, B, C)

A medium-sized dark brown species having ovoid frontal callus, reddish brown scape and pedicel, and entirely velvety black flagellum; plate of flagellum with long dorso-basal tooth extended forward to over half of plate; inconspicuously striped notum; spur vein of wing longer than stem and no spot on abdomen.

Female : 15-17 mm in length.

Head : Eyes bare, uniformly buff-grey, unbanded (relaxed). Frons (Fig. 1-A) gradually divergent above; index 1 : 4.8; yellow-pollinose and black-pilose, more at vertex. Frontal callus ovoid in shape with keel-like extension upward to about two-thirds of frontal height, almost resting on subcallus, without touching eye-margins, dark grey. Subcallus, face and parafacials yellow-pollinose; face mostly with erect dark hairs and parafacials with long golden hairs as well. Antenna (Fig. 1-B) about 2.7 mm long; scape and pedicel reddish brown, with black

hairs; pedicel with a very prominent dorsal spine; flagellum entirely velvety black; plate of flagellum with long dorsobasal tooth extended forward to over half of plate; tooth with some black hairs, congregated more at apex. Palpus (Fig. 1-C) dark brown, slender blunt apically, black-haired.

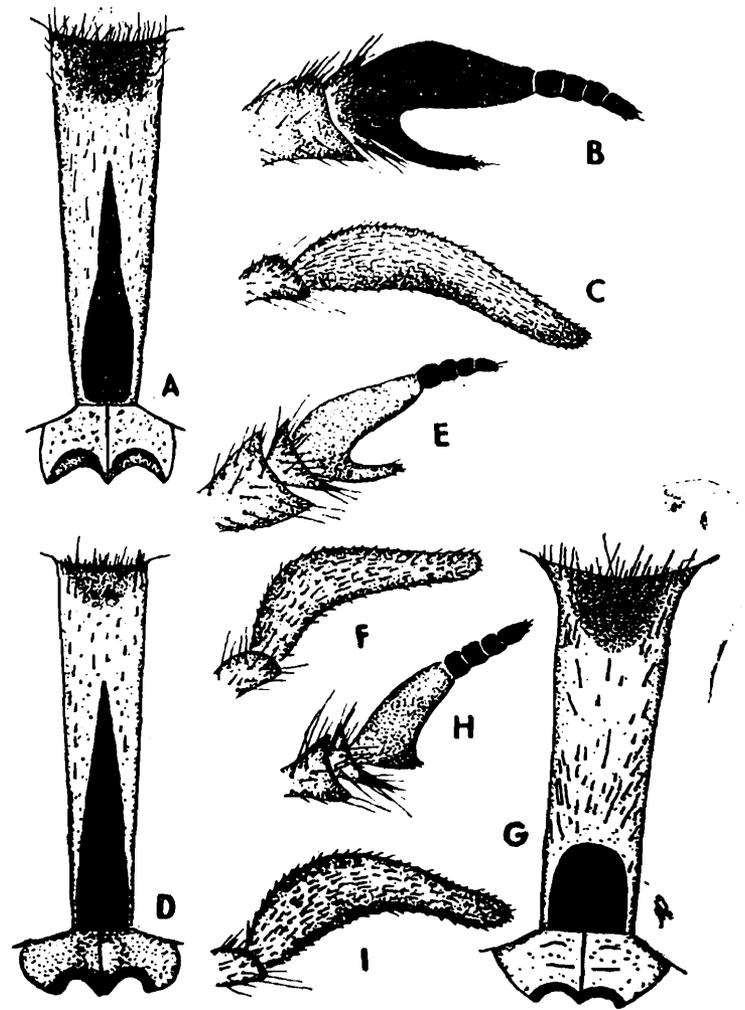


Fig. 1.

A—C. *Tabanus dominus* sp. n. A : frons ; B : antenna ; C : palpus.

D—F. *Tabanus minusculus* sp. n. D : frons ; E : antenna ; F : palpus.

G—I. *Tabanus kamengensis* sp. n. G : frons ; H : antenna ; I : palpus.

Thorax : Notum black, with three extremely inconspicuous stripes extended from anterior margin to prescutellum, with yellow recumbent hairs except erect black-haired fore corners; scutellum also black, mostly

with yellow recumbent hairs. Pleura black, with both yellow and black recumbent hairs ; sternopleuron with long yellow erect hairs distally. *Wing* : 17-18 mm long, uniformly brown-tinted ; cell R5 open ; spur vein longer than stem ; basicosta black setose. *Legs* : Femora predominantly yellow-haired ;

Tabanus pullomaculatus Philip, 1970, described from Sikkim, Manipur and Arunachal Pradesh, India, and *T. fuscomaculatus* Ricardo, 1911, described and recorded from Burma and Uttar Pradesh, Manipur and Sikkim, India are differentiated from this new species so as to justify its identity.

<i>T. dominus</i>	<i>T. pullomaculatus</i>	<i>T. fuscomaculatus</i>
1. Dark brown species.	Reddish brown species.	Dark red species.
2. Scape and pedicel of antenna reddish brown, flagellum velvety black ; dorso-basal tooth of plate extended forward to over half length.	Antenna uniformly red, sometimes darker apically, tooth not so much extended.	Scape and pedicel of antenna red ; flagellum black ; "Distinct tooth" presumably not spine-like.
3. Notum inconspicuously striped.	Notum unstriped.	Notum unstriped.
4. Spur vein of wing longer than stem.	Spur vein of wing shorter than stem.	Spur vein short, sometimes absent.
5. No spot on abdomen.	Abdomen spotted.	Abdomen spotted.

tibiae and proximal portions of tarsi brown, rest black ; hind tibial fringe black, inner hairs yellowish. *Haltere* : Brownish except yellow tip of knob.

Abdomen : Broad, nearly one-third of each tergum yellowish distally ; proximal two-thirds dark, predominantly yellow-haired ; terga with fringes of long golden hairs laterally but not so mesially. Sterna bluish black, with a long broad median black stripe extended upto tip of abdomen ; predominantly with yellow hairs.

Holotype ♀, INDIA : Arunachal Pradesh, Kameng District, Dirang Dzong, Chug, 2430 m ; 28. VII. 1961, Coll. S. Biswas
Paratypes : 2 ♀♀, same data as holotype ; 1 ♀, Dirang Dzong, Chug valley, 2135 m., 10. VII. 1961, Coll. S. Biswas ; 2 ♀♀, Dirang Dzong, Jungle Camp, 1601 m., 21. VII. 1961, Coll. S. Biswas, 3 ♀♀, Dirang Dzong, Road side Camp, 1830m., 18. VII. 1961, Coll. S. Biswas.

2. *Tabanus minusculus* sp. n. (Fig. 1-D, E, F)

A medium-sized reddish brown species having clubshaped frontal callus, reddish brown scape, pedicel and plate of flagellum, and somewhat darkened tip ; broad and flat plate with a very prominent long tooth extended forward half way of plate ; spur vein of wing longer than stem ; unstriped or unspotted thorax and abdomen dorsally.

Female : 15-16 mm in length.

Head : Eyes bare, uniformly buff-grey, unbanded (relaxed). Frons (Fig. 1-D) gradually divergent above ; index 1 : 5.6 ; yellow-pollinose and thinly blackpilese above, more erect hairs at vertex. Frontal callus club-shaped, broad, dark brown, tapered above into a heavy median keel which attenuates in upper third of frons, nearly touching eye-margins and resting on subcallus ; two small but prominent black

tubercles without ocelli below vertex. Subcallus, face and parafacials yellow pollinose-face mostly with dark erect hairs and parafacials with long pale yellow hairs as well. Antenna (Fig. 1-E) about 2 mm long; scape, pedicel and plate of flagellum reddish brown and rest darkened; pedicel with a prominent dorsal spine, and black hairs also with scape; plate broad, flat, with a very prominent tooth extended forward halfway of plate; tooth with four or five black hairs at tip. Palpus (Fig. 1-F) moderately swollen, blunt apically, dark brown, black-haired.

Thorax: Notum black, unstriped, with recumbent yellow hairs and erect black hairs; fore corners with long yellow and black hairs; scutellum also black, with long yellow and black hairs. Pleura brownish, with both yellow and black hairs; sternopleuron with long yellow erect hairs mesially and distally. **Wing:** 15-16 mm long, uniformly brown-tinted; cell R5 open; spur vein usually longer than stem; basicosta black setose.

Legs: In general reddish brown except somewhat darker fore tarsi; predominantly black-haired. **Haltere:** Stem brownish and knob somewhat darker.

Abdomen: Broad, reddish brown, gradually dark-tinged posteriorly, predominantly black-haired; terga with fringes of golden hairs almost uniformly. Venter with a long, broad, black median stripe extended upto tip, predominantly yellow-haired except black-haired stripe.

Holotype ♀, INDIA: Arunachal Pradesh, Kameng District, Dirang Dzong, Jungle Camp, 1601 m, 20.VII.1961, Coll. S. Biswas. **Paratypes:** 1 ♀, same data as holotype; 1 ♀, Kameng District, Nephra, Salari, 1270 m, 3.VII.1961, Coll. S. Biswas.

This new species resembles *Tabanus trinominatus* Senior-White, 1927 (= *Tabanus palpalis*

Ricardo, 1911) described from India (exact locality unknown) in having club-shaped frontal callus, unstriped or unspotted thorax and abdominal terga but *trinominatus* possesses a short antennal tooth and dull yellow legs among certain other differences.

3. *Tabanus kamengensis* sp. n.

(Figs. 1-G, H, I).

A medium-sized dark brown species having subquadrate callosity, reddish brown scape, pedicel and plate of flagellum and black tip; flat and narrow plate with a very small tooth; occurrence of spur vein in wing optional; legs black except brownish tibiae with blackish tips only; unstriped or unspotted thorax and abdominal terga.

Female: 13-14 mm-

Head: Eyes bare, uniformly buff-grey, unbanded (relaxed), but shining pinkish in certain lights. Frons (Fig. 1-G) broad, slightly divergent above, with black spot at vertex, slightly raised along midline, index 1:3.7; yellow-pollinose and black pilose, more above callus. Callosity greyish, bulging, subquadrate with rounded upper corners, without touching eye-margins; no upward extension. Subcallus brown-pollinose; face and parafacials off-white pollinose; face with off-white erect hairs and parafacials with off-white long hairs. Antenna (Fig. 1-H) about 1.5 mm long; scape, pedicel and plate of flagellum reddish brown and rest black; pedicel with a prominent dorsal spine and black hairs also with scape; plate flat and narrow with a very small tooth; tooth with a very few black hairs at tip. Palpus (Fig. 1-I) somewhat narrow, blunt apically, brownish, black-haired; in one paratype specimen palpus somewhat short and swollen basally.

Thorax: Notum almost black, unstriped,

with recumbent golden hairs and erect black hairs, more, laterally; scutellum also nearly black, with very few golden and black hairs. Pleura greyish, mostly with brown hairs; sternopleuron with long off-white erect hairs. *Wing*: 12-13 mm long, uniformly brown-tinted; cell R5 open; spur vein absent in holotype and in one paratype but present in two other paratypes; basicosta black setose. *Legs*: entirely black except brownish tibiae with blackish tips only; hind tibial fringe black. *Haltere*: Stem brownish and knob darkened.

Abdomen: Tergum 2 reddish brown, gradually somewhat darkened to tip of abdomen; tergum 1 darker than tergum 2; tergum 2 yellowish on anterior border; terga predominantly dark haired, with fringes of golden hairs, more laterally; sterna brownish to black at tip; a median black stripe gradually widening to black tip; no well-marked stripe in one paratype; with golden hairs except on black-haired stripe.

Holotype ♀, INDIA: Arunachal Pradesh, Kameng District, Diarang Dzong, Chug, 2430 m, 28.VII.1961, Coll. S. Biswas. *Paratypes*: 1 ♀, same data as holotype; 1 ♀, Dirang Dzong, Road side camp, 1930 m, 18.VII.1961, Coll. S. Biswas; 1 ♀, Dirang Dzong, Sangli, 1678 m, 23.vii.1961, Coll. S. Biswas.

Tabanus scutellus Philip, 1970, described from Arunachal Pradesh and Sikkim, India, runs somewhat to the new species in the shape of the antenna and palpus (cf. Philip, 1970) but differs in the uniformly red antenna, a small black median callus, black apical fourth of the fore leg and triangles formed out of bright hairs on the abdominal terga 3 and 4.

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