
**STUDIES ON THREE SPECIES OF THE GENUS *RHYNCOMYA*
ROBINEAU-DESVOIDY (DIPTERA: CALLIPHORIDAE) FROM
NORTH-WEST INDIA**

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ABSTRACT: Three species belonging to the genus *Rhyncomya* Robineau-Desvoidy (Diptera : Calliphoridae) have been collected from North-West India i.e., *R. pollinosa* (Townsend), *R. divisa* (Walker) and *R. flavibasis* (Senior-White). Detailed descriptions have been written on a uniform pattern for each of them that include synonymy, morphological attributes, colouration, chaetotaxy, wing venation, illustrations of male and female genitalia, material examined, distribution, holotype depository and remarks. A key to the studied species has also been provided.

KEYWORDS : *Rhyncomya*, Diptera, Calliphoridae, North-West India

INTRODUCTION

The genus *Rhyncomya* is represented by nine species in the Oriental region including seven from India while three species are known to occur in North-west India³. Most of the species belonging to this genus were originally described under the genus *Metallea* van der Wulp and only *R. callopis* Loew was represented in the Orient. However, James⁴, while bring other species from *Metallea* in the lap of *Rhyncomya* excluded *R. callopis* from the list of Oriental species. Representatives of this genus are easily distinguished from that of *Metallea* by the absence of carina between the antennae and bare propleural depression. Other characteristic features

of the genus include: propleuron bare; prosternum hairy; postalar declivity and suprasquamal ridge bare; acrostichals 0-3+1-7; dorsocentrals 1-3+3-5; intra-alars 0-1+2-4; humerals 2-4; posthumeral 1-3; supra-alars 2-6; prostigmatic bristle present.

MATERIALS AND METHODS

Adult flies were collected from various localities falling the states/Union territories comprising North-west India i.e., Chandigarh, Delhi, Haryana. Himachal Pradesh, Punjab, Uttarakhand and Jammu division of Jammu and Kashmir. Varied habitats like forests, bushes, flowers, heaps of garbage, rotting vegetables and fruits, decaying animal remains and

of animals were explored for the purpose of blow fly collection. The collected specimens were killed with the help of ethyl acetate vapours, pinned and labelled with necessary information required for taxonomic work. Slides of genitalia were prepared and diagrams drawn with the help of graph eye piece. The terminology of Park² was generally followed for writing the descriptions of the species.

RESULTS AND DISCUSSION

Rhyncomya pollinosa (Townsend, 1917)

(Figs. 1-7)

Trichometallea pollinosa Townsend, 1917. *Rec. Ind. Mus.*, **13** : 194.

Metallea pollinosa Senior-White *et al.*, 1940. *Fauna Brit. India, Dipt.*, **6** : 183.

Rhyncomya pollinosa (Townsend) : James, 1977. *Cat. Dipt. Orient. Reg.*, **3** : 554.

MALE: Body length 4.5-5.6 mm.

Head: Eyes bare, subholoptic, facets uniform; frons luteous, bare, wide at base but narrows as it approaches vertex; parafrofrontalia yellowish brown with thick golden dusting, frontal bristles well developed; fronto-orbital bristles absent; ocellus with ocellar and postvertical bristles; vertical and outervertical bristles present; prevertical bristles absent; parafacialia yellowish, bare; face luteous, bare; facial carina absent; epistome, medianae, jowls, genae and postgenae yellowish, with

pale hair at genae and postgenae; vibrissae present well above oral margin; peristomal bristles well developed; postorbit yellowish, bare; occiput metallic black with yellow and black hair; antennae fulvous; length of 3rd segment about 2.5X that of 2nd; arista brown, bare; palpi fulvous with bristles present all over.

Thorax: Greenish-cupreous thickly silver dusted; humerus and postalar callus rather thickly silver dusted than dorsum; prothoracic spiracle yellow; propleuron bare; prosternum with fine yellow hair; postalar declivity bare; supraspiracular convexity bare; suprasquamal ridge bare.

Chaetotaxy (Fig. 4) : Acrostichals 2+3; dorsocentrals 2+4; intra-alars 1+2; presutural present; humerals 2; posthumeral 2; supra-alars 3; post-alars 2; notopleurals 2; lateroscutellars 2; apicoscutellar and discoscutellar 1 each; sternopleurals 1+1; propleural and prostigmatic present.

Wings: Clear; veins brown; stem vein (R) setulose; R₁ bare; R₄₊₅ setulose at basal node on both dorsal and ventral sides; first posterior cell (R₅) open; epaulet and basicosta brown; subcostal sclerite brown, bare; alar and thoracic squamae whitish; halteres yellow.

Legs: Blackish or brownish; fore- and hind femora with bristles present on

both dorsal and ventral sides while midfemur with bristles present on ventral side only; fore tibia with 2 bristles at middle and 2 at apex; midtibia with 1 bristle each at middle and apex; hind tibia with series of bristles.

Abdomen: Pale yellowish, thickly silver dusted with black median stripe; tergites 2-4 yellowish and with strong marginal bristles; tergite 5 black with marginal bristles along with numerous long black hair; hypopygium inconspicuous.

Male genitalia: Fifth sternite (Fig. 5); Cerci and paralobi (Fig. 6); Aedeagus and parameres (Fig. 7)

FEMALE: Body length 5.0-6.0 mm.

Similar to male except : eyes dichoptic, frons parallel sided, fronto-orbital bristles present, fore- and hind tibiae with a series of bristles, tergite 5 yellowish. Sternites 1-5 (Fig. 3).

Female genitalia: Dorsal view of ovipositor (Fig. 1); Ventral view of ovipositor (Fig. 2)

Material examined: *Himachal Pradesh:* Dharamshala-1830M (7♂♂, 3♀♀) 10.III.2002; Coll. Inderpal Singh Sidhu.

Holotype depository: ZSI, Calcutta, India

Distribution: India (Chandigarh, Haryana, Himachal Pradesh, Maharashtra, Tamil Nadu, Uttar Pradesh), Sri Lanka and China.

Remarks: Members of this species are unique due to very strong dusting all over the body. It also differs from other species because of the presence of bare arista, which is pubescent in most of the other cases.

***Rhyncomya divisa* (Walker, 1856)**

(Figs. 8-14)

Musca cuprea Walker, 1856. *Dipt. Saund.*, **1** : 331.

Musca divisa Walker, 1856. *Dipt. Saund.*, **1** : 333.

Musca collecta Walker, 1860. *Proc. Linn. Soc. Lond.*, **4** : 139.

Rhynchomyia pallicept Bigot, 1887. *Bull. Soc. Zool. Fr.*, **12** : 594.

Metallea nigrofemorata Senior-White, 1923. *Mem. Dep. Agric. India, (Ent. Ser.)*, **8** : 46.

Metallea divisa (Walker) : Senior-White *et al.*, 1940. *Faun. Brit. India, Dipt.*, **6** : 180.

Rhyncomya divisa (Walker) : James, 1977. *Cat. Dipt. Orient. Reg.*, **3** : 554.

MALE: Body length 5.8-7.5 mm.

Head: Eyes bare, subholoptic, facets uniform; frons yellowish, bare, forms a thin line as it approaches vertex; parafrontalia yellowish with silver tomentum, wider than frons; frontal bristles well developed; fronto-orbital bristles absent; ocellus with ocellar and postvertical bristles; vertical and outervertical bristles absent, prevertical bristles present; parafacialia yellowish

with silvery tomentum, bare; face yellowish, bare; facial carina absent; epistome and medianae greyish black, bare; jowls, genae and postgenae brownish black, with black hair; vibrissae present well above oral margin; peristomal bristles well developed; postorbit greyish with silver tomentum, bare; occiput metallic black, with black and grey hair; antennae yellow, length of 3rd segment about 3X that of 2nd; arista brown, pubescent; palpi yellow, with bristles present all over.

Thorax: Brownish with purplish tinge, silver dusted; humerus and postalar callus concolorous with dorsum, heavily silver dusted; prothoracic spiracle brown; propleuron bare; prosternum with black hair; postalar declivity bare; supraspiracular convexity bare; suprasquamal ridge bare.

Chaetotaxy (Fig. 11) : Acrostichals 2+3; dorsocentrals 2+4; intra-alars 1+2; presutural present; humerals 2; posthumeral 3; supra-alars 3; post-alars 2; notopleurals 2; lateroscutellars 2; apicoscutellar and discoscutellar 1 each; sternopleurals 1+1; propleural and prostigmatic present.

Wings: Hyaline with yellowish tinge; stem vein (R) setulose; R₁ bare; R₄₊₅ setulose at basal node on both dorsal and ventral sides; first posterior cell (R₅) open; epaulet and basicosta

yellowish brown; subcostal sclerite orange, pubescent; alar and thoracic squamae yellowish brown, bare on dorsal surface; halteres brown.

Legs: Black with tibiae and first tarsal joints yellowish brown; fore- and hind femora with bristles present on both dorsal and ventral sides while midfemur with bristles present on ventral side only; foretibia with 3 bristles at middle and 2 at apex; midtibia with 1 bristle each at middle and apex; hindtibia with 2 bristles at middle and 1 at apex.

Abdomen: Yellow, with black median stripe; tergites 1-3 yellow; tergites 4-5 purplish at centre, all tergites with discal marginal bristles except tergites 4; tergites 2-5 with strong marginal bristles; sternites 1-5 with numerous long black hair; hypopygium inconspicuous.

Male genitalia: Fifth sternite (Fig. 12); Cerci and paralobi (Fig. 13); Aedeagus and parameres (Fig. 14)

FEMALE: Body length 6.0-8.0 mm.

Similar to the male except: eyes dichoptic, frons wider than parafrontalia, with parallel sides, fronto-orbital bristles present, mid tibia with a series of bristles. Sternites 1-5 (Fig. 10).

Female genitalia : Dorsal view of ovipositor (Fig. 8); Ventral view of ovipositor (Fig. 9)

Material examined: *Punjab* : Jalandhar-250M (3♂♂, 4♀♀) 1.VIII.2002; Coll. Inderpal Singh Sidhu.

Holotype depository: MNHN, Paris, France.

Distribution (Map 13): India (Bihar, Madhya Pradesh, Punjab, Uttar Pradesh, West Bengal), Celebes, Indonesia, Sri Lanka and Australia.

Remarks: This species is well distributed all over India and is very similar to *R. flavibasis* (Senior-White), however, the external genitalia and

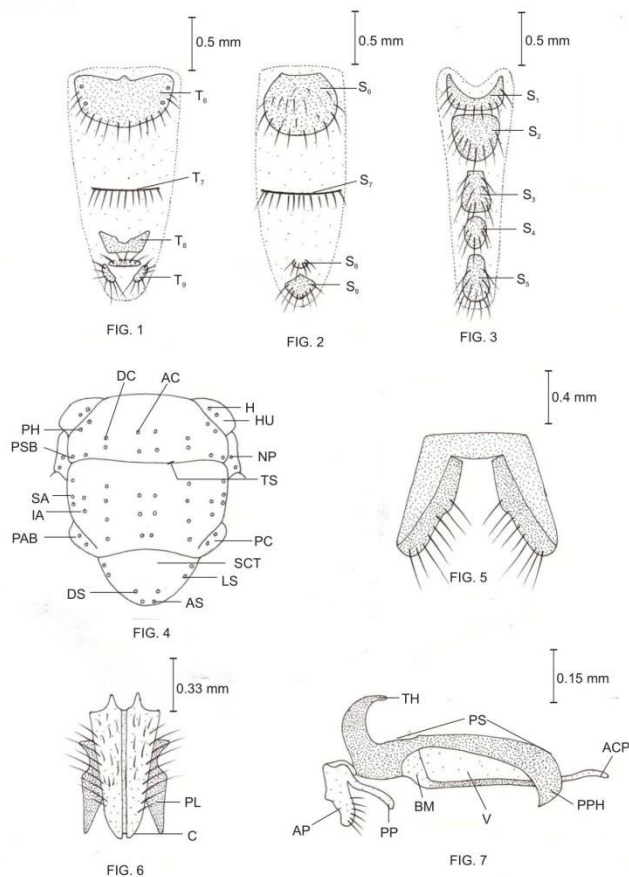
characters shown in the key are sufficient to differentiate the two.

***Rhyncomya flavibasis* (Senior-White, 1922)**

(Figs. 15-21)

Metallea flavibasis Senior-White, 1922. *Mem. Dept. Agric. India (Ent. Ser.)*, **7** : 168.

Metallea nigrifemorata Senior-White, 1923. *Mem. Dept. Agric. India, (Ent. Ser.)*, **8**:46.



Figs. 1-7 (*Rhyncomya pollinosa*)

- Fig. 1 Dorsal view of ovipositor
Fig. 2 Ventral view of ovipositor
Fig. 3 Sternites I-V of female
Fig. 4 Dorsal view of chaetotaxy of thorax (Diagramatic)
Fig. 5 Sternite V of male
Fig. 6 Cerci and paralobi
Fig. 7 Aedeagus and parameres

Metallea flavibasis Senior-White *et al.*, 1940. *Fauna Brit. India, Dipt.*, **6** : 182.

Rhyncomya flavibasis (Senior-White) : Fan *et al.*, 1992. *Key Common Flies China* : 565-566 pp.

MALE : Body length 6.0-6.8 mm.

Head : Eyes bare, subholoptic, facets uniform; frons yellow, bare, wider at base but narrows as it approaches vertex; parafrontalia brown with golden tomentum, wider than frons; frontal bristles well developed; fronto-orbital bristles absent; ocellus with ocellar and postvertical bristles; vertical bristles present, prevertical and outervertical bristles absent; parafacialia brown with golden tomentum, bare; face, epistome, medianae yellow, bare; facial carina weak; epistome slightly projecting, jowls, genae and postgenae brown with golden tomentum, covered with yellow hair; vibrissae present well above oral margin; peristomal bristles well developed; postorbit with golden tomentum, bare; occiput black on dorsal side with black hair while yellow on ventral side with yellow hair; antennae orange, 3rd segment white dusted, its

length about 3X that of 2nd; arista brown, pubescent; palpi orange with bristles present all over.

Thorax : Metallic green, heavily silver dusted, with coppery reflections; black spots present at bases of bristles; humerus and postalar callus concolorous with dorsum; prothoracic spiracle yellow; propleuron bare; prosternum covered with yellow hair; postalar declivity bare; supraspiracular convexity bare; suprasquamal ridge bare.

Chaetotaxy (Fig. 18) : Acrostichals 2+3; dorsocentrals 2+4; intra-alars 1+2; presutural present; humerals 2; posthumerals 2; supra-alars 3; post-alars 2; notopleurals 2; lateroscutellars 2; apicoscutellar and discoscutellar 1 each; sternopleurals 1+1; propleural and prostigmatic present.

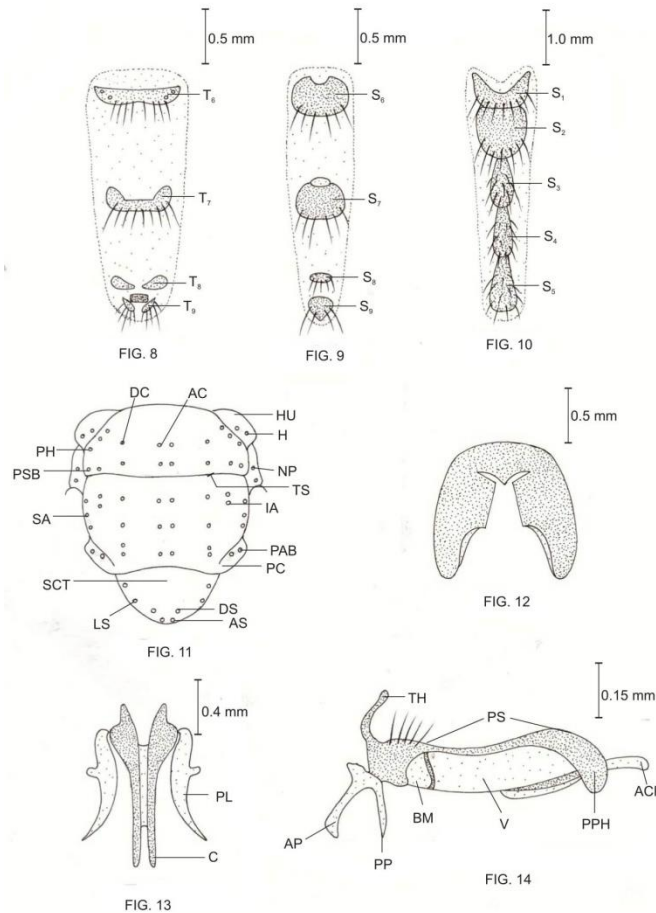
Wings : Yellowish hyaline; veins brown; stem vein (R) setulose; R₁ bare; R₄₊₅ setulose at basal node on both dorsal and ventral sides; first posterior cell (R₅) open; epaulet and basicosta brown; subcostal sclerite brown with

fine black hair; alar and thoracic squamae yellowish brown, bare on dorsal surface, with yellow marginal cilia; halteres brown.

Legs : Brown except apex of femora and pulvilli yellow; fore- and hindfemora with bristles on both dorsal and ventral sides while midfemur with bristles on ventral side only; foretibia with 1 bristle at base, 1 at middle and 3 at apex; midtibia with 1 bristle at base, 3

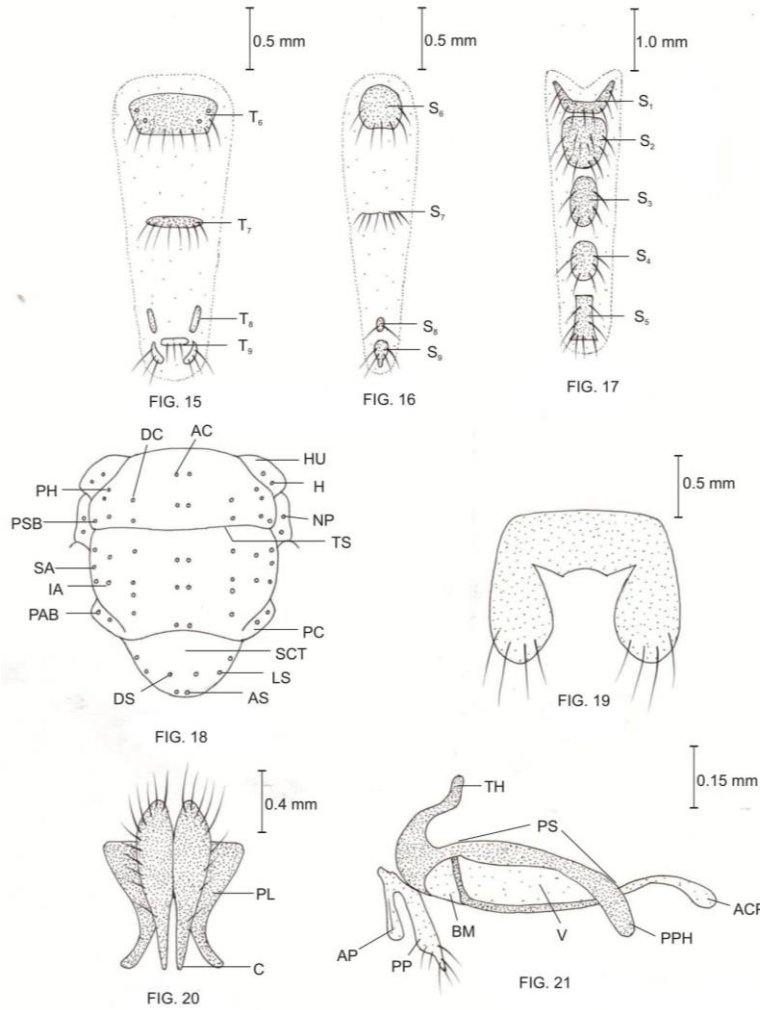
at middle and 2 at apex; hindtibia with 2 bristles at base, 3 at middle and apex each.

Abdomen : Yellowish brown; tergites 2-3 yellow; tergite 4 brownish yellow, with weak discal bristles; tergite 5 dull green with silver dusting, black spots present at base of bristles, tergites 2-5 with decumbent marginal bristles; sternites 1-5 with black bristle like hair; hypopygium conspicuous.



Figs. 8-14 (*Rhyncomya flavibasis*)

- Fig. 8 Dorsal view of ovipositor
 Fig. 9 Ventral view of ovipositor
 Fig. 10 Sternites I-V of female
 Fig. 11 Dorsal view of chaetotaxy of thorax (Diagramatic)
 Fig. 12 Sternite V of male
 Fig. 13 Cerci and paralobi
 Fig. 14 Aedeagus and parameres



Figs. 15-21 (*Rhyncomya flavibasis*)

- Fig. 15 Dorsal view of ovipositor
Fig. 16 Ventral view of ovipositor
Fig. 17 Sternites I-V of female
Fig. 18 Dorsal view of chaetotaxy of thorax (Diagramatic)
Fig. 19 Sternite V of male
Fig. 20 Cerci and paralobi
Fig. 21 Aedeagus and parameres

Male genitalia: Fifth sternite (Fig. 19); Cerci and paralobi (Fig. 20); Aedeagus and parameres (Fig. 21)

FEMALE: Body length 7.0-7.4 mm.

Similar to the male except : eyes dichoptic, frons parallel sided, fronto-orbital bristles present, outervertical bristles present. Sternites 1-5 (Fig. 17).

Female genitalia: Dorsal view of ovipositor (Fig. 15); Ventral view of ovipositor (Fig. 16)

Material examined: *Chandigarh* : 300M (2♂♂, 2♀♀) 29.IX.2002; Coll. Inderpal Singh Sidhu.

Distribution (Map 14): India (Chandigarh, Uttar Pradesh), Sri Lanka and China.

Holotype depository: BMNH, London, England.

Remarks: *R. flavibasis* (Senior-White) was reported from North-west India for the first time by Singh and Sidhu (2004). Though very similar to *R. divisa* (Walker) this species can easily be differentiated from the latter as depicted in the key.

KEY TO THE STUDIED SPECIES OF GENUS *RHYNCOMYA*

1. Arista bare; wings clear; squamae whitish; frons and

face luteous.....*R. pollinosa* (Townsend)

- Arista pubescent; wings yellowish hyaline; squamae yellowish brown; frons and face yellowish.....2

2. Femora black; palpi and antennae yellow; thorax brownish with purplish tinge; legs black with tibiae and first tarsal joints yellowish brown; abdomen with black median stripe.....*R. divisa* (Walker)

- Femora with basal half yellowish brown; palpi and antennae orange; thorax metallic green with coppery reflection; legs brown; abdomen yellowish brown without black median stripe.....*R. flavibasis* (Senior-White)

ABBREVIATIONS USED

AC - Acrostichal bristles; ACP - Acrophallus; AP - Anterior paramere; AS - Apicoscutellar bristles; BM - Basal membrane; C - Cerci; DC - Dorsocentral bristles; DS - Discoscutellar bristles; H - Humeral bristles; HU - Humerus; IA - Intra-alar bristles; LS - Lateroscutellar bristles; NP - Notopleural bristles; PAB - Postalar bristles; PC - Postalar callus; PH - Posthumeral bristles; PL - Paralobi; PP - Posterior paramere; PPH - Paraphallus; PS - Phallosome; PSB - Presutural bristles; S₁ - Sternite 1; S₂ - Sternite 2; S₃ - Sternite 3; S₄ - Sternite 4; S₅ - Sternite 5; S₆ - Sternite 6; S₇ - Sternite 7; S₈ - Sternite 8; S₉ - Sternite 9; SA - Supra-alar bristles; SCT - Scutellum; T₆ -

Tergite 6; T₇ - Tergite 7; T₈ - Tergite 8; T₉ - Tergite 9; TH - Theca; TS - Transverse suture; V - Ventralia

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