

Description of the Male of *Aedes (Verrallina) agrestis*
(Diptera: Culicidae) With Notes on the Female

By S. C. Tewari and J. Hiriyani¹

ABSTRACT. The male of *Aedes (Verrallina) agrestis* Barraud is illustrated and described for the first time.

INTRODUCTION

The type female of *Aedes (Verrallina) agrestis* was originally described by Barraud (1931). Reinert (1974) described and illustrated the female genitalia of *agrestis*, noting that the mounted female genitalia were the only part remaining of the holotype in the British Museum (Natural History). He stressed the need for obtaining additional specimens to add information to the original description of Barraud (1931). We have collected males and females of this species in the Western Ghats, India and provide the descriptions.

The terminology of the structural parts largely follows that of Harbach and Knight [1980, 1981 (1982)].

Aedes (Verrallina) agrestis Barraud 1931

MALE. Head. Antenna plumose, brown, slightly shorter than proboscis, pedicel dark brown ventrally and pale dorsally, scales and setae absent; clypeus dark brown, bare; palpus dark brown scaled, about 0.1 length of proboscis; proboscis dark brown, slightly longer than forefemur; eyes very narrowly separated in front, margins with pale narrow scales; vertex covered mainly with decumbent broad pale scales except the pair of submedian triangular patches of broad dark scales and a few narrow pale scales on median region, the extent of dark scales varies; 5-7 vertical and 2-3 temporal well developed dark setae; occiput with few, dark, erect forked scales. Thorax. Scutal integument reddish-brown; scutum covered with narrow curved dark scales; few anterior promontory and acrostichal dark setae; numerous dorsocentral setae; numerous long, stout, dark supraalar setae; few narrow, curved pale scales on the following areas: anterior promontory extending towards humeral region, supraalar and prescutellar bare space; scutellum with fine narrow, curved pale scales on all lobes with 5-8 long and short dark bristles on each; pleural integument pale brown; antipronotum well

¹ Centre for Research in Medical Entomology, Madurai - 625 003, India.

separated, 5-7 long and short dark setae, scales absent; postpronotum with very few narrow pale scales, 3-5 long and short dark setae posteriorly; propleuron with a patch of broad pale scales and 3-5 dark setae; prosternum bare; postspiracular area with 6 fine brown setae, without scales; a portion of antepronotum and postspiracular area having pale sheen which appear to be patches of pale scales; prealar knob with 6-9 dark brown setae; paratergite and subspiracular area bare; sternopleuron area with a patch of broad pale scales on upper and lower caudal area, 6-7 dark brown setae on upper area, 2-5 brown setae on lower part and 1-2 brown stout setae in the middle; mesepimeron with a patch of flat pale scales on upper area with numerous fine pale-brown setae posteriorly extending to the lower margin also; usually most of the pleural setae appear to be pale golden while observing in some angles. Legs. Coxae I-III each with several setae, I broad brown scaled with an apical and a basal small patch of broad pale scales dorsally, II broad brown scaled with a larger patch of broad pale scales only on dorsoapical area, III without scales; femora I and II each with dark brown scales anteriorly, I with an indistinct pale stripe posteriorly, II pale posteriorly, III mainly pale with a dark brown scaled stripe on its whole length of dorsal border; tibiae and tarsi otherwise covered with dark brown scales; tarsal claws I and II toothed and III simple. Wing. Dorsal and ventral veins with dark scales on the margin; remigium with a large blackish-brown spot. Halter. Pedicel pale, capitellum dark brown scaled. Abdomen. Terga with blackish-brown scales, I-VII each with a small laterobasal patch of white scales, usually larger and appearing on the dorsum of VI-VII; sterna mainly pale with dark scales apically; sternum VIII with long, distinct pale golden setae. Genitalia (Fig. 1). Tergum IX moderately pigmented, band-like with lateral areas broader, without setae, fused with tergum X, connected laterally to sternum IX; gonocoxite short, broader apicomeresally and narrow basally, extended dorsoapically into a short heavily pigmented lobe with curved bifid (in one specimen trifid on one side) spiniform-like tip and mesolaterally to a membranous, spiculate lobe with short fine setae, a small stout, knob-like spine laterad of subapical area, several long stout and short setae usually on apical half of dorsal, ventral and lateral surfaces; gonostylus attached subapically to gonocoxite, shape as in illustration, apex broader extended into a heavily pigmented blunt projection and with two groups of setae, one group with 1-3 setae at about middle and another with 2-5 setae on folded inner margin, without claw; basal mesal lobe consists of a membranous, spiculate club shaped lobe with several short and moderately long fine setae, apex lightly pigmented and attached to the mesal area of gonocoxite, lobe connected mesally with its mate by a band covered with minute spicules; proctiger with paraproct heavily pigmented, basally articulated into two unequal tapering arms; phallosome complex, opisthophallus - moderately pigmented, cephalic margin slightly concave, caudal margin laterally curved and a deep groove mesally forming two distinct lobes; phallus - composed of a pair of long aedeagal sclerites which are fused together, apex of each phallic arm blunt, prosophallus - composed of a pair of long, laterally curved widely separated arms, curved basomesal portion somewhat expanded and attached to paramere; paramere - short, basal piece - lightly pigmented, short, attached to the base of gonocoxites; sternum IX large, broad, heavily pigmented laterally, median caudal area bearing a patch of long and short setae with slightly concave margin.

FEMALE. Essentially as in the male but with following minor differences: Head. Flagellum slightly shorter than proboscis with very narrow pale scales, Flagellomere I with pale basal area and about 1.5 length of II; pedicel with short fine hairs and small brown scales mesally; palpus about 0.12 length of proboscis; sternum VIII without long setae. Genitalia. As described by Reinert (1977).

VOUCHER SPECIMENS. One male (No.A501), one male (No.A504) with mounted genitalia (No.G49) and one female (No.A499), Noolpuzha, Sulthan's Battery, Wynad District (Kerala State), South India, collected during outdoor resting in day time inside the forest. Deposited in the U.S. National Museum of Natural History. One male with mounted genitalia deposited in National Institute of Virology, Pune, India. One male with mounted genitalia deposited in National Institute of Communicable Diseases, Delhi, India.

DISTRIBUTION AND BIOLOGY. Specimens examined: 13 males and 5 females, Noolpuzha, Sulthan's Battery, Wynad District, Kerala State (1100 m altitude). Adults of *Ae. agrestis* were collected resting during the day time in undergrowth of bamboo stands on the bank of a stream. Two females were collected biting man, but attempts to obtain eggs from a fully fed female in the field laboratory failed.

TAXONOMIC DISCUSSION. The male and the female of *Ae. agrestis* possess the main characters of the subgenus *Verrallina*, as described by Reinert (1974, 1984), viz., (1) decumbent scales of vertex all broad, (2) dorsocentral and acrostichal setae present, (3) scutum and scutellum with only narrow scales, (4) mesepimeron without anterior lower setae, but with numerous fine hairs caudad of scale patch, (5) subspiracular area and paratergite bare, (6) male maxillary palpus short. On the basis of the characters of male, female and female genitalia, *Ae. agrestis* belongs to Section A and Series III of Reinert (1974, 1984). The male genitalia are easily separated from those of other species in the subgenus including *Ae. (Ver.) unicus* which was considered by Barraud (1934) to be closest to it. It can be easily distinguished by the structure of gonostylus, gonocoxite, basal mesal lobe, prosophallus, paramere and paraproct. The prosophallus is long and paramere is short, as in species of Section A of the subgenus. This species fits in all respects with Series III (the gonocoxite has one well developed dorsoapical lobe, gonostylus attached subapically).

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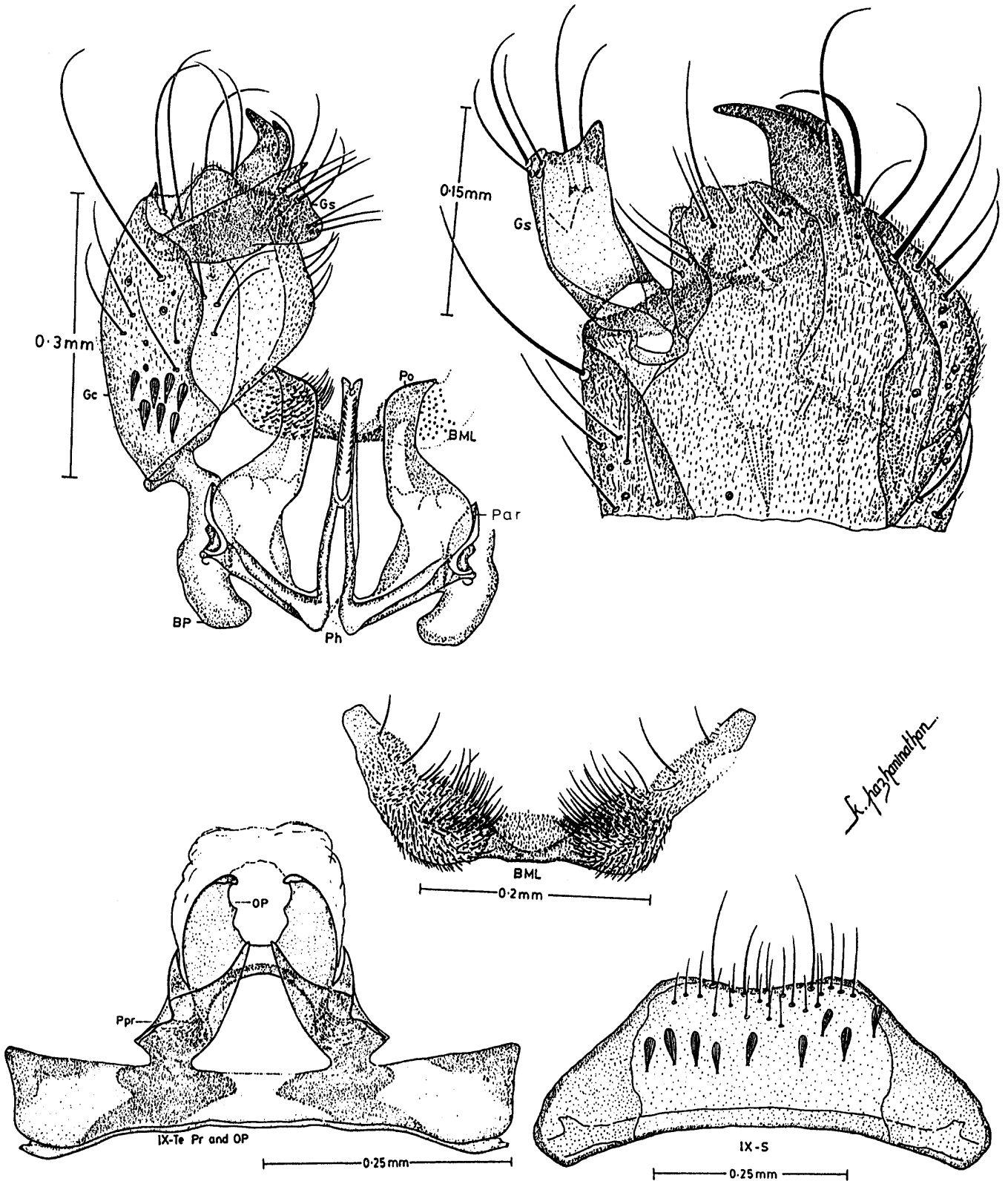
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LIST OF FIGURE ABGREGIATIONS

BML	=	Basal mesal lobe
BP	=	Basal piece
Gc	=	Gonocoxite
Gs	=	Gonostylus
IX-5	=	Sternum 9
IX-Te	=	Tergum 9
OP	=	Opisthophallus
Par	=	Paramere
Ph	=	Phallus
PO	=	Prosophallus
Ppr	=	Paraproct
Pr	=	Proctiger

Fig : 1



Aedes (Verrallina) agrestis Barraud