Description of a New Species of *Aedes (Verrallina)* from Sri Lanka (Diptera: Culicidae)[1,2]

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ABSTRACT. The male and male genitalia of *Aedes (Verrallina) srilankensis*, a new mosquito species from Sri Lanka, are described and the genitalia illustrated. The new species is compared to related species.

Introduction

The following new species in the subgenus *Verrallina* Theobald, genus *Aedes* Meigen, was found in material collected by the Lund University Ceylon Expedition of 1962. Brinck, Andersson and Cederholm (1962) present background information on the Expedition and a description of Sri Lanka which includes: morphology and geology, climate, terrestial habitats, inland aquatic habitats, and land use.

Nomenclature used for the male and male genitalia (except for the phallosome) follows Knight (1970) and Knight and Laffoon (1970a, 1970b, 1971). Terminology of the phallosome of the male genitalia follows Belkin (1968). The development of the phallosome is quite complex and appears to be developed similarly to members of the subfamily Dixinae (Reinert 1974).

Aedes (Verrallina) srilankensis New Species
(Fig. 1)

MALE. *Head.* Antenna with 13 flagellomeres, plumose, 1.24 length of proboscis; clypeus bare; maxillary palpus 0.17 length of proboscis; proboscis 1.07 - 1.09 length of femur I; eyes separated in front; several ocular setae; scales on head apparently all broad and decumbent except for a very few narrow curved ones along coronal suture and a small patch of erect forked scales on occiput. *Thorax.* Scutum with narrow curved scales (rubbed); setae on following areas: 2-3(?) median anterior promontory, several acrostichal (anterior and posterior), numerous dorsocentral (anterior and posterior), scutal fossal (2 anterior and 2-3 lateral), numerous supraalar, 1 postalar callar and scutellar (3-5 on lateral

[1]The opinions contained herein are the private ones of the author and do not purport to reflect the views of the Department of the Army.

[2]Report No. 44 from the Lund University Ceylon Expedition in 1962 (Per Brinck, Hugo Andersson and Lennart Cederholm).

lobe, 4 on median lobe); antepronotum with scales (one broad scale remaining and several alveoli), 5-6 setae; postpronotum with 2 setae; propleuron with a few broad scales, 6-8 setae; prosternum, subspiracular area, paratergite, mesomeron and metameron bare; postspiracular area with 1-3 setae; mesepisternum with an upper and a small lower patch of broad scales, 2 upper and 6-8 posterior setae; prealar knob with 3-5 setae; mesepimeron with a patch of broad scales near center, 6-8 setae dorsad of scale patch. *Legs*. Coxae I-III each with several setae, I with a large patch of broad scales on anterior surface; posttarsi I-III each with 2 ungues, I and II each with ungues unequal in size, each ungue with a tooth, III with ungues equal, both with a tooth. *Wing*. One or 2 remigial setae. *Abdomen*. Terga and sterna with a number of short setae, mostly along posterior margins. *Genitalia* (Fig. 1). Tergum IX moderately to heavily pigmented, formed into a narrow band mesally and expanded laterally into a pair of long, heavily pigmented, blunt, thumb-like processes, bases of processes fused to tergum X, setae absent, connected laterally to sternum IX by a narrow heavily pigmented band; gonocoxite short, broad, heavily pigmented, tergobasal portion membranous, dorsal surface with apex extended into a moderately long lobe which bears 3-4 moderately long, heavily pigmented, blunt or pointed, flattened spiniforms, several long stout setae basad of lobe, ventral surface produced into a large apicomesal lobe which is heavily pigmented on both tergal and sternal areas, tergal area of lobe with a few scattered short fine setae, sternal area of lobe with numerous short fine setae which extend basad onto apical 0.5 of ventral surface, ventral surface also with several long stout setae on outer margin and a few broad scales; gonostylus heavily pigmented, moderately long, approximately 0.56 length of gonocoxite, basal 0.22 moderately broad, middle 0.33 expanded and with 20-23 short thin setae, apical 0.45 narrow, recurved and with apex very heavily pigmented and folded back, gonostylar claw absent, attached subapically to gonocoxite; basal mesal lobe broad, moderately to lightly pigmented, covered with small spicules, 8-10 very short fine setae near basomesal area, 2 heavily pigmented short spine-like structures near middle of tergomesal margin, lobes connected mesally by a moderately broad band which forms a shallow trough ventrad of apical portion of prosophallic arms, sternomesal margin of basal mesal lobe fused with gonocoxite; proctiger with paraproct heavily pigmented, formed into a long, caudally projected, strongly curved arm which is moderately broad basally and apical portion acuminate and curved mesad, sternobasal area of paraproct formed into a small broad projection which extends ventrad and articulates at a point on the dorsomesal surface of the parameral apodeme near base of opisthophallus, proctiger strongly fused with tergum X, cercus membranous and without cercal setae; tergum X heavily pigmented, formed into a plate between proctiger and caudomesal portion of tergum IX, connected by a small very heavily pigmented strip mesally; phallosome complex, opistophallus--consists of a moderately pigmented tergal transverse bridge between the parameral apodemes, caudal margin produced into a moderately long flap, cephalic margin concave, base attached to a dorsomesal extension of the caudal portion of parameral apodeme, located dorsad of phallus and prosophallus and ventrad of proctiger, phallus -- consists of a pair of short heavily pigmented narrowly separated arms which are fused at the base, sternolateral area extended into a tapered arm which is fused with prosophallus base, apex of phallus formed into a tergal penis filament which extends cephalad, prosophallus -- consists of a pair of long heavily pigmented acuminate arms which have their bases widely separated and their apices nearly contiguous, base of arm attached to tergomesal

portion of paramere and located ventrad and laterad of phallus, apical portion of arm projecting caudad of phallus, prosophallic arm approximately 2.29 length of phallic arm (measured along midline of genitalia), paramere -- heavily pigmented, broad, long (approximately 1.32 length of phallic arm), most inner point of apodeme attached to sternobasal area of prosophallic arm, parameral apodeme -- heavily pigmented, very long (approximately 1.92 length of paramere), attached just basad of middle of outer surface with tergobasal apodeme of gonocoxite; sternum IX moderately to heavily pigmented, large, broad, strongly attached along lateral surface to sternomesal areas of gonocoxites, 11-12 short setae near center of caudal area.

FEMALE, PUPA AND LARVA. Not known.

TYPE-DATA. The holotype male bears the following information on the labels: SRI LANKA (Ceylon), Western Province, Yakkala, 18 miles NE of Colombo, 1-14 Feb. 1962, collection locality 10, sweepnet, Per Brinck, Hugo Andersson and Lennart Cederholm collectors, Lund University Ceylon Expedition 1962, genitalia preparation number T77.13, *Aedes (Verrallina) srilankensis* Det. John F. Reinert. The paratype male possesses the same data as the holotype except the genitalia preparation number (T77.11). Brinck, Andersson and Cederholm (1971: XXIII) list the following additional data for collection locality 10: Dambuwa Estate, altitude 30 m, cultivated area (coconut, paddy fields, fruit gardens) with interspersed grass and brush areas and a lower moist part with ponds. The holotype (adult and genitalia mounted in Canada balsam on 2 slides) is deposited in the United States National Museum (Natural History) and the paratype (adult and genitalia mounted on 2 slides) is deposited in the University of Lund Museum, Lund, Sweden.

DISTRIBUTION. Known only from the type-locality.

BIONOMICS. As recorded for the holotype in the type-data.

DISCUSSION. The above description is based on the holotype and paratype. Both these specimens had been collected using a sweep net, were preserved in alcohol, and later mounted in Canada balsam on microscope slides. Unfortunately, the adult specimens were badly rubbed and a number of scales and setae were missing, therefore setae and scale alveoli were used to supplement the description. Both genitalia are in excellent condition.

Aedes srilankensis clearly belongs to Section B of the subgenus *Verrallina* (as described by Reinert 1974). The adult possesses posttarsi III with the ungues toothed, eyes separated in front, mesepimeron without hairs caudad or below scale patch, postpronotum without scales, and antepronotum with broad scales. The male genitalia also are characteristic of Section B and have the prosophallus very long, phallus short and 0.44 length of prosophallus, paramere very long, and parameral apodeme very long.

The male genitalia of *srilankensis* are most similar to those of *uniformis* (Theobald), especially in the development of the caudally projected thumb-like processes of tergum IX, paraproct, phallosome and gonostylus; however, *srilankensis* is very distinct in the development of the tergoapical lobe and sternoapical area of the gonocoxite and the basal mesal lobe. Male genitalia of this new species differ from the other members of Section B (except *uniformis*) in the development of tergum IX and the tergoapical lobe of the gonocoxite.

Because of the rubbed condition of the adults no distinctive habitus features were found at this time for separating *srilankensis* from other members of Section B.

Acknowledgments

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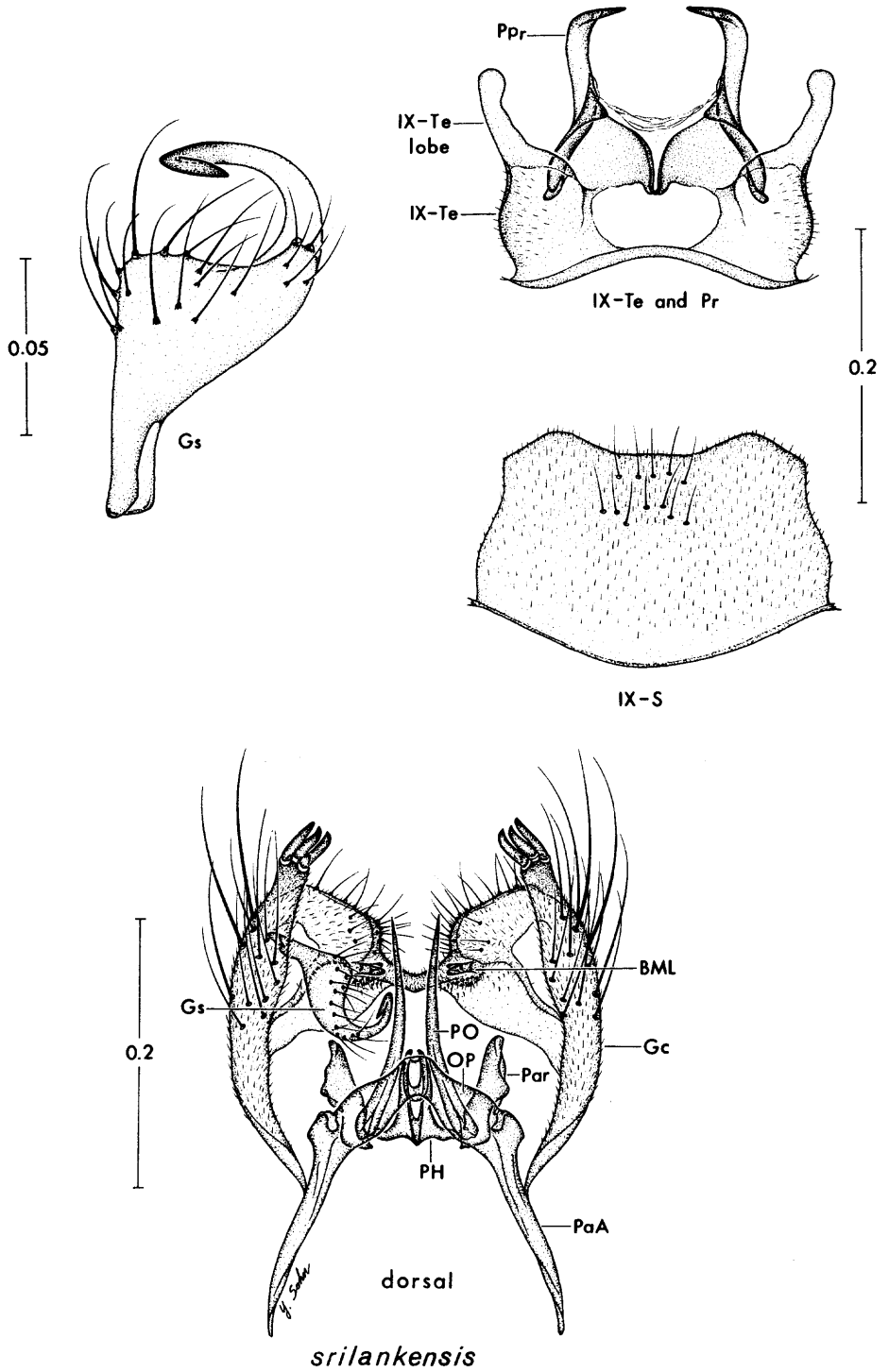
List of Figure Abbreviations

BML	= Basal mesal lobe	PaA	= Parameral apodeme
Gc	= Gonocoxite	Par	= Paramere
Gs	= Gonostylus	PH	= Phallus
IX-S	= Sternum 9	PO	= Prosophallus
IX-Te	= Tergum 9	Ppr	= Paraproct
OP	= Opisthophallus	Pr	= Proctiger

Fig. 1


Ppr
IX-Te lobe
IX-Te
IX-Te and Pr
0.05
Gs
0.2
IX-S
BML
Gs
PO
OP
Par
Gc
0.2
PH
PaA
dorsal
srilankensis