

**COMPARATIVE ANATOMY OF THE FEMALE GENITALIA OF
GENERIC-LEVEL TAXA IN TRIBE AEDINI (DIPTERA: CULICIDAE).
PART XXXVI. GENUS *POLYLEPTIOMYIA* THEOBALD**

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Abstract. A morphological analysis of the female genitalia of species included in genus *Polyleptiomyia* Theobald was conducted. Treatment of the genital morphology of the genus includes a description of the genus, a detailed description and illustration of the type species, *Po. albocephala* (Theobald), a list of the species examined, a list of published illustrations and descriptions of included species with their literature citations, and a discussion. The discussion section contains a list of the most distinctive female genital features of *Polyleptiomyia*, a comparison of these with other aedine genera, and other pertinent information.

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INTRODUCTION

This is the thirty-sixth in a series of papers by the author that describe the female genitalia of the generic-level taxa included in tribe Aedini of family Culicidae. Part I of the series (Reinert 2000a) included an introduction to the series, a brief historical background of published papers dealing with the subject, preparation techniques and anatomical terminology, part II (Reinert 2000b) dealt with genus *Psorophora* Robineau-Desvoidy, part III (Reinert 2000c) with genus *Udaya* Thurman, part IV (Reinert 2000d) with genus *Zeugomyia* Leicester, part V (Reinert 2000e) with genus *Aedes* Meigen, part VI (Reinert 2001a) with genus *Ayurakitia* Thurman, part VII (Reinert 2001b) with genus *Opifex* Hutton, part VIII (Reinert 2001c) with genus *Verrallina* Theobald, part IX (Reinert 2001d) with genus *Eretmapodites* Theobald, part X (Reinert 2002a) with genus *Heizmannia* Ludlow, part XI (Reinert 2002b) with genus *Haemagogus* Williston, part XII (Reinert 2002c) with genus *Armigeres* Theobald, part XIII (Reinert 2002d) with genus *Ochlerotatus* Lynch Arribalzaga, part XIV (Reinert 2002e) provided a key to genera recognized at that time, part XV (Reinert 2008a) with genus *Georgecraigius* Reinert, Harbach and Kitching, part XVI (Reinert 2008b) with genus *Phagomyia* Theobald, part XVII (Reinert 2008c) with genus *Dahlia* Reinert, Harbach and Kitching, part XVIII (Reinert 2008d) with genus *Hulecoeteomyia* Theobald, part XIX (Reinert 2008e) with genus *Danielsia* Theobald, part XX (Reinert 2008f) with genus *Rampamyia* Reinert, Harbach and Kitching, part XXI (Reinert 2008g) with genus *Patmarksia* Reinert, Harbach and Kitching, part XXII (Reinert 2008h) with genus *Downsiomyia* Vargas, part XXIII (Reinert 2008i) with genus *Tanakaius* Reinert, Harbach and Kitching, part XXIV (Reinert 2008j) with genus *Vansomerenis* Reinert, Harbach and Kitching, part XXV (Reinert 2008k) with genus *Dobroworskyius* Reinert, Harbach and Kitching, part XXVI (Reinert 2008l) with genus *Collessius* Reinert, Harbach and Kitching, part XXVII (Reinert 2009a) with genus *Hopkinsius* Reinert, Harbach and Kitching, part XXVIII (Reinert 2009b) with genus *Luius* Reinert, Harbach and Kitching, part XXIX (Reinert 2009c) with genus *Jihlienius* Reinert, Harbach and Kitching, part XXX (Reinert 2009d) with genus *Gilesius* Reinert, Harbach and Kitching, part XXXI (Reinert 2010a) with genus *Sallumia* Reinert, Harbach and Kitching, part XXXII (Reinert 2010b) with genus *Jarnellius* Reinert, Harbach and Kitching, part XXXIII (Reinert 2010c) with genus *Lewnielsenius* Reinert, Harbach and Kitching, part XXXIV (Reinert 2010d) with genus *Catageiomyia* Theobald, and part XXXV (Reinert 2010e) with genus *Elpeytonius* Reinert, Harbach and Kitching. Reinert et al. (2004, 2006, 2008 and 2009) conducted phylogenetic analyses of tribe Aedini and revised the classification of generic-level taxa. This paper covers the female genitalia of genus *Polyleptiomyia* Theobald, which was resurrected from synonymy by Reinert et al. (2009).

A morphological analysis of the female genitalia of *Polyleptiomyia* Theobald was conducted, a characterization is given, and a discussion including a comparison with other aedine taxa is provided. The format used includes a genus description, a description and illustration of the type species, *Po. albocephala* (Theobald), a list of the species examined, a list of published illustrations and/or descriptions of species with their literature citations, and a discussion including the most distinctive features and other pertinent information.

MATERIALS AND METHODS

Female genitalia of genus *Polyleptiomyia* are considered here to include all structures caudad of abdominal segment VII. Segment VIII is included since its tergum and sternum are often modified in development and shape, and possess specialized setae.

Terminology used in the descriptions and illustration follows Reinert (2000a, 2008a) and the abbreviations used are found in the “List of Abbreviations Used in the Text and/or Figure” that precedes the figure. The morphological description is based on slide-mounted genitalia that were dissected from dead, dried females. Measurements and descriptions of female genital structures are based on specimens that were cleared, dissected, arranged in a dorsoventrally flattened position, and mounted in Canada balsam under glass cover slips on microscope slides. Ranges are based on the species (listed under “species examined” section) and specimens that I have examined, therefore some variation may occur in species not seen. A phase contrast microscope was used because this was usually necessary to determine some structures, e.g., spermathecal eminence on the roof of the vagina. Measurements of structures (e.g., length and width of terga VIII and IX, sternum VIII, cercus, etc.) include only the pigmented and sclerotized areas and were visible at 400X magnification. Measurements were made using an ocular micrometer having a linear scale of 100 divisions that had been calibrated using a stage micrometer. The scale used in the illustration is in millimeters.

The method of preparation of specimens followed Reinert (2000a). During dissection of the genitalia, extra care was taken when separating the insula and lower vaginal lip from sternum VIII as the insula often breaks off and remains attached to the apical intersegmental membrane of the sternum. To avoid this, the intersegmental membrane of sternum VIII can be separated from the apical margin of the sternum and mounted with the insula and lower vaginal lip.

FEMALE GENITALIA OF GENUS *POLYLEPTIOMYIA* THEOBALD

Genus description. *Segments VII and VIII.* Dorsoventrally flattened; intersegmental membrane between VII-Te and VIII-Te relatively long. *Tergum VIII.* Width greater than length; covered with minute spicules; moderately pigmented; base slightly concave mesally, basolateral areas expanded outward; apex straight, with few moderately long and several short, relatively straight setae; setae on distal 0.71-0.86; basolateral seta absent; scales absent; VIII-Te index 0.72-0.78; VIII-Te/IX-Te index 1.84-2.11; length 0.22-0.23 mm; width 0.30-0.33 mm. *Sternum VIII.* Width greater than length; covered with minute spicules; moderately pigmented with distal lobes slightly darker pigmented; base gently concave on median area; apex with numerous short, slightly curved setae (median area with few shorter setae), and moderate, median emargination separating moderately broad, rounded lobes; several moderately long and short setae on distal 0.88-0.92; setae 1,2-S present, seta 1-S inserted relatively near basal margin, seta 2-S inserted posterior and lateral to seta 1-S; basolateral seta absent; scales absent; VIII-S index 0.61-0.75; length 0.25-0.29 mm; width 0.34-0.45 mm. *Tergum IX.* Moderately long; moderately wide; covered with minute spicules; comprised of single moderately pigmented sclerite; apex with 2 rounded lobes each with 3 or 4 short, slender setae; 6-8 total setae; IX-Te width/length ratio 0.98-1.12; length 0.11-0.13 mm; width 0.11-0.14 mm; dorsal spheres small. *Insula.* Tonguelike; covered with minute to short spicules; lightly pigmented; setae absent; with 4-7 small tuberculi on distal area. *Lower vaginal lip.* Covered with minute to short spicules; moderately pigmented; narrow; hinge relatively narrow; without lower vaginal sclerite; ventral tuft present, small. *Upper vaginal lip.* Covered with minute to short spicules; heavily pigmented; narrow laterally and curved outward, caudal part narrow with posterior margin relatively straight; upper vaginal sclerite moderately pigmented, moderately large. *Spermathecal eminence.* Membranous; ill-defined but somewhat oblong in outline; with minute spicules. *Postgenital lobe.* Covered with short spicules; moderately long; relatively narrow; apex with moderate, median emargination; basal mesal apodeme somewhat oblong, moderately pigmented; setae on distal 0.36-0.40 of ventral surface; PGL ventral index 1.41-1.63; PGL ventral width/Ce dorsal width ratio 0.82-0.91. *Proctiger.*

Membranous; with minute spicules in short rows. *Cercus*. Covered with minute to short spicules; moderately long; proximal approximately 0.50 moderately wide and distal 0.50 narrower; apex narrowly rounded, with few short and few relatively long setae; setae on distal 0.77-0.86 of dorsal surface; dorsal surface without scales; cercus index 2.13-2.62; Ce/dorsal PGL index 3.13-3.95; length 0.19-0.21 mm; width 0.07-0.10 mm. *Spermathecal capsules*. One large and 2 slightly smaller ones; heavily pigmented; spherical; with several small, spermathecal capsule pores near orifice. *Accessory gland duct*. Basal area narrow, darkly pigmented, moderately long.

Type species description (*Po. albocephala*, Figure 1). The above genus description is based on the type species.

Species examined. *Polyleptiomysia albocephala*.

Discussion. The following combination of features is most distinctive for the female genitalia of species belonging to genus *Polyleptiomysia*. Insula is tongue-like, without setae, but with 4-7 small tuberculi on the distal area. The cercus is moderately long, moderately wide on the proximal approximately half, the distal half is narrower, the apex is narrowly rounded, scales are absent, and the dorsal surface has setae on the distal 0.77-0.86. The postgenital lobe is moderately long, relatively narrow, and the apex has a moderately deep, median emargination. Sternum VIII is moderately pigmented with the distal lobes slightly darker pigmented, the width is greater than the length, the apex has a moderately deep, median emargination separating moderately broad, rounded lobes, and scales are absent. Tergum VIII lacks scales, the width is greater than the length, the apex is straight with a few moderately long and several short setae, the base is slightly concave mesally and the basolateral areas are expanded outward, and scales are absent.

Female genitalia of *Polyleptiomysia* bear some similarity to some other aedine genera with a tongue-like insula without setae and with one large and two slightly smaller spermathecal capsules. They are somewhat similar to species of genus *Bifidistylus* Reinert, Harbach and Kitching but are easily separated from these by the absence of scales on both tergum VIII and sternum VIII, tergum VIII with basolateral areas expanded outward and an index of 0.72-0.78, sternum VIII with only setae 1,2-S present (other S setae absent), and the cercus is longer and narrower with the apex narrowly rounded, and with an index of 2.13-2.62. Development of tergum VIII resembles some species of *Aedimorphus* Theobald but these species differ from *Polyleptiomysia* in numerous other characters.

Published illustrations (1) and/or descriptions (2) of female genitalia. *Polyleptiomysia albocephala*: Reinert et al. (2009) (2); *Po. gandarai* da Cunha Ramos, Capela and Ribeiro: da Cunha Ramos et al. (1994) (1, 2).

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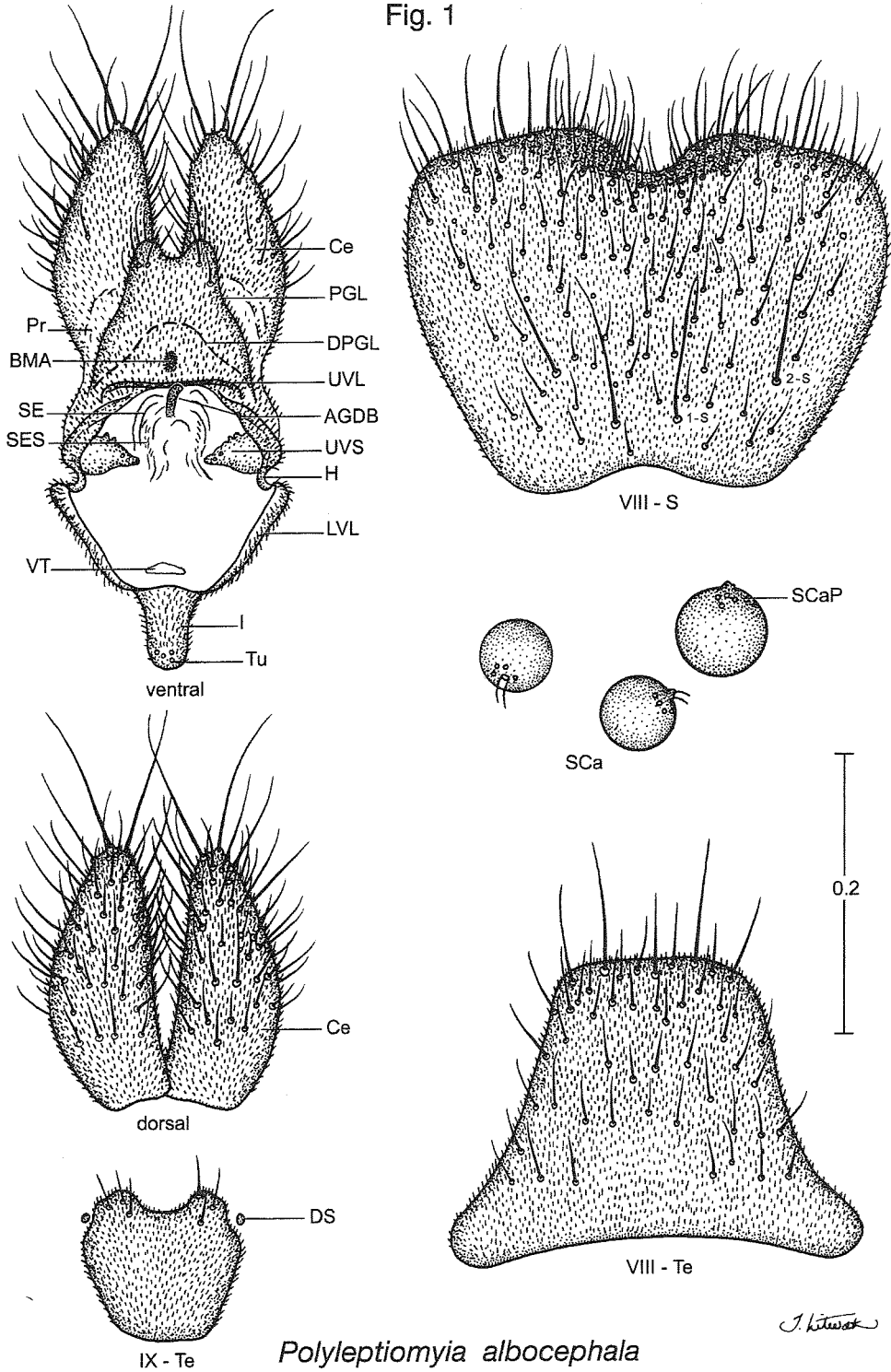
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FIGURE 1. FEMALE GENITALIA OF *POLYLEPTIOMYIA ALBOCEPHALA***LIST OF ABBREVIATIONS USED IN THE TEXT AND/OR FIGURE**

AGDB	= accessory gland duct base
BMA	= basal mesal apodeme
Ce	= cercus
DPGL	= line of attachment of Pr to dorsal surface of PGL
H	= hinge
I	= insula
IX-Te	= tergum IX
LVL	= lower vaginal lip
mm	= millimeter
PGL	= postgenital lobe
Pr	= proctiger
SCa	= spermathecal capsule
SCaP	= spermathecal capsule pore
SE	= spermathecal eminence
SES	= spermathecal eminence spicule
Tu	= tuberculus
UVL	= upper vaginal lip
UVS	= upper vaginal sclerite
VIII-S	= sternum VIII
VIII-Te	= tergum VIII
VT	= ventral tuft
1,2-S	= setae 1,2-S

Fig. 1



SYSTEMATIC INDEX

Valid generic and specific taxa are italicized, other taxa are in Roman type. Boldface page numbers are those which began the primary treatment of the taxon.

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