

SCIENTIFIC NOTE

TRANSFER OF *HEIZMANNIA THELMAE* FROM SUBGENUS *MATTINGLYIA* TO SUBGENUS *HEIZMANNIA* OF GENUS *HEIZMANNIA* AND NEW CHARACTERS FOR SEPARATING THE TWO SUBGENERA

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ABSTRACT. *Heizmannia thelmae* is formally transferred from subgenus *Mattinglyia* and assigned to subgenus *Heizmannia*. Rationale for this action is provided. New characters of the adults, female genitalia, and pupae are listed for separating the 2 subgenera of *Heizmannia*.

KEY WORDS Culicidae, *Heizmannia*, *Heizmannia thelmae*, *Mattinglyia*, mosquito

Mattinglyia was described as a new genus of Culicidae (Diptera) by Lien (1968), and his new species, *catesi*, was designated the type species. He also included in the genus all species belonging to Group B (genus *Heizmannia* Ludlow of Mattingly 1957). Lien indicated that *Mattinglyia* differed from genus *Heizmannia* in having strongly toothed fore- and midtarsal unguis in the female, no setae on the mesopostnotum, and no lower mesepimeral setae.

The mosquito genus *Heizmannia* was reviewed and revised by Mattingly (1970). In this revision, he included *Mattinglyia* as a subgenus along with subgenus *Heizmannia* and provided the following characters for separating the 2 subgenera. The nominotypical subgenus was distinguished in the female by antepnota almost contiguous in most species; mesopostnotum with a group of small setae posteriorly and occasionally mixed with a few broad scales in some species; fore- and midtarsal unguis simple in most species; and tergum IX comprised of 2 separate plates. Subgenus *Mattinglyia* was characterized in the female by the antepnota well separated; mesopostnotal setae and scales absent; fore- and midtarsal unguis toothed (except in *H. thelmae* Mattingly); and tergum IX with lateral plates fused (except in *H. thelmae*).

Reinert (2002), in a comparative, morphological analysis of the female genitalia of genera and subgenera in tribe Aedini, reported the following features that readily distinguish the 2 subgenera of *Heizmannia*. Species of the subgenus *Heizmannia* possess the following: sternum VIII with apex with moderately deep, median emargination separating a broadly rounded lobe on each side of the midline; numerous short, nearly straight setae (occasionally

some species also with few setae with apices curved) borne on the apical margin, and seta 1-S located basomesad but some distance from the basal margin; tergum IX comprised of 2 relatively narrow, heavily pigmented, elongate, lateral plates separated by a membrane but connected mesally by narrow, moderately (occasionally lightly) pigmented, basal band, and normally a truncated apex of each plate with 1–4 short setae (setae absent in *H. complex* (Theobald)); insula tongue-like and with 3–6 very short setae on the apex; cercus with 4 (rarely 5) long, stout setae on the margin of apex; tergum VIII with several short and moderately long, stout setae apically; and an accessory gland duct with the basal area often long (occasionally moderately long) and heavily pigmented. In contrast, species of subgenus *Mattinglyia* possess: sternum VIII with the apex with a small to very small lobe on each side of midline and sloped caudolaterad forming moderately large lobes on each caudolateral margin; numerous short, stout setae with curved apices situated along the apical margin, and seta 1-S very long and located basomesad near the basal margin; tergum IX comprised of a single, somewhat shield-shaped, heavily pigmented and sclerotized plate, and with 1–3 short setae on a pair of small, sharply rounded, apical lobes; insula tongue-like with 1 or 2 small tuberculi near the apical margin present or absent; cercus with 5 or 6 long, stout setae on the margin of apex; tergum VIII with several long and moderately long, stout setae apically; and the accessory gland duct with the basal area short and heavily pigmented. Based on characters of the female genitalia, Reinert (2002) noted the similarity of *H. thelmae* to the other species of subgenus *Heizmannia*.

Other useful characters for separating adults of the subgenera are the presence of scales on the postprocoxal and prealar areas in most, if not all (?), species of the nominotypical subgenus, whereas scales are absent on these areas in *Mattinglyia*.

Additional, previously unreported characters for

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separating the 2 subgenera are the development of pupal setae 11-CT and 9-VII. In subgenus *Heizmannia*, seta 11-CT is shorter than, equal to, or very slightly longer than seta 10-CT (except 11-CT is noticeably longer than 10-CT in *H. complex* and *H. greenii* (Theobald) (see illustration of the latter species in Amerasinghe (1989)) and seta 9-VII is single (occasionally 2-branched and rarely with 3–5 branches in 4 species), whereas in subgenus *Mattinglyia* seta 11-CT is noticeably longer than seta 10-CT and seta 9-VII has 4–6 (very rarely 2 or 3) branches.

Heizmannia thelmae is known only from the holotype female. Based on examination of the holotype female (mounted on a paper point attached to an insect pin), genitalia, and associated pupal and fourth-stage larval exuviae (all previously mounted on microscope slides), I formally transfer this species to subgenus *Heizmannia* from subgenus *Mattinglyia* based on the following criteria. The female genitalia, as noted above, provide distinctive features for separating the 2 subgenera. The genitalia of *H. thelmae* show the following important features of subgenus *Heizmannia*: tergum IX comprised of 2 relatively narrow, heavily pigmented, elongate, lateral plates, each with 2 short setae apically; the insula is tongue-like and with 1 very short seta and 3 small, clear spots (most likely where setae were broken off) on the apex; cercus with 4 long, stout setae on the apical margin, lateral most seta shortest; and the accessory gland duct with the basal area moderately long and heavily pigmented. Unfortunately, tergum VIII and sternum VIII are missing from the genitalia slide and were apparently discarded when the genitalia were dissected and mounted. The female mesopostnotum is rubbed but has what appears to be 2 setal alveoli on the posterior median area that were apparently overlooked previously. The anteprepecta are close together, the postprocoxal and lower prealar areas have broad, silvery scales, and the fore- and midtarsal ungues are simple. Pupal seta 11-CT is 0.86 of the length of seta 10-CT, and seta 9-VII is

single. Therefore, as listed above, *H. thelmae*, on reexamination, possesses the primary features of subgenus *Heizmannia*. Mattingly (1970) recognized the uncertainty in his subgeneric placement of this species as indicated in his comment on page 49, "It shares with subgenus *Heizmannia* s. st. the simple fore and mid tarsal claws of the female and the separate lateral plates of the female IXth tergum. It is thus annectent between the two subgenera though some striking resemblances in ornamentation, particularly to *catesi*, suggest that it is closer to *Mattinglyia*."

Terminology used follows Harbach and Knight (1980).

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