

**Selection of a lectotype for *Aedes refiki* Medschid (Diptera: Culicidae)  
and redescription of the male, females and fourth-instar larvae of the type series**

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**Abstract**

A lectotype is designated for *Aedes refiki*, which is the type species of subgenus *Rusticoidus*. Detailed descriptions of the adults (including male and female genitalia) and fourth-instar larvae of the type specimens of *Ae. refiki* are provided.

**Introduction**

During revisionary studies of genus *Aedes* Meigen an expanded definition of subgenus *Rusticoidus* Shevchenko & Prudkina, 1973 was provided by Reinert (1999a). In addition to the definition, which covered the adults, female and male genitalia, pupae, fourth-instar larvae, and eggs, the report provided a chronology of published articles used in resolving the confusion regarding which species should be included in subgenus *Rusticoidus*. Reinert (2000) transferred two North American species (*Ae. bicristatus* Thurman & Winkler and *Ae. provocans* (Walker)) from subgenus *Ochlerotatus* Lynch Arribalzaga to *Rusticoidus*. During these studies it was found that *Aedes refiki* Medschid, the type species of the subgenus, did not have a primary type designated. To rectify this, a lectotype is selected from the syntype series. A revised and expanded redescription of the type specimens of *Ae. refiki* is provided. Anatomical terminology used follows Harbach & Knight (1980, 1982), except for terminology proposed by Reinert (1990, 1999b). Information on each specimen label is enclosed between a pair of double diagonal slash marks and explanatory information is enclosed in square brackets.

**Lectotype selection**

Medschid (1928) described *Aedes refiki* as a new species based on a series of specimens (syntypes). Townsend (1990) listed three adult syntypes of this species that are in The Natural History Museum (NHM), London, United Kingdom. I examined the specimens labelled as syntypes in the NHM and found one male and two females, and three larval exuviae (each exuviae is mounted on a separate microscope slide). The syntype male is herewith selected as the lectotype in order to fix a primary type for *Aedes refiki*. The male is glued on its left side to a white paper triangle (with a thin black longitudinal line on the dorsal surface near the anterior edge) and is attached to a headless insect pin. The genitalia, missing one claspette, had been previously removed from the abdomen and mounted in a drop of balsam on a small rectangular piece of transparent yellow plastic attached to the insect pin. The lectotype is in fair condition and has the thorax with a few small, rubbed areas on the scutum and pleural surfaces, and is missing the right halter, left maxillary palpus, left wing (except the basal portion), left foretarsomeres 2-5, left midtibia and tarsus, and left hindleg. Also, the right maxillary palpus (missing palpomere 5), the right hindleg (missing tarsomeres 2-5), and the right wing are detached from the specimen and glued to the upper, basal area of the paper triangle. Seven labels are attached to the insect pin and include the following data “// Turkey: Angora, D. Medjid., B.M. 1927-282. [white paper rectangular label] // 387 [thin white paper square label folded in half] // Syn-type [small white paper circular label with blue border] // *Aedes refiki* Medschid, SYNTYPE, det. B.C. Townsend, 1984 [white paper elongate rectangular label] // T00.61 Term. [small white paper elongate rectangular label; genitalia preparation number] // LECTOTYPE, *Aedes refiki*, By John F. Reinert [upper surface of label]; John F. Reinert [my handwritten signature on underside of label][white paper rectangular label with red border] //.” The balsam on the plastic rectangle was dissolved and the genitalia were dissected and remounted in Canada balsam on a microscope slide which contains two white, red-bordered, paper labels with the data from the adult labels.

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## Paralectotypes

Five paralectotypes of *Ae. refiki* are as follows: one female, in fair condition, is glued on its left side to a white paper triangle attached to a headless insect pin and bearing the following data on four labels attached to the pin "// Turkey: Angora, D. Medjid, B.M. 1927-282. [white paper rectangular label] // 387 [thin white paper square label folded in half] // Syn-type [small white circular label with blue border] // T00.62 Term. [small white paper elongate rectangular label; genitalia preparation number] //"; one female, in fair condition, is glued on its left side to a white paper triangle attached to a headless insect pin and bearing the following data on two labels attached to the pin "// Turkey, ? Angora, 1927, D. Medjid. [white paper rectangular label] // Syn-type [small white circular label with blue border] //"; one slide-mounted fourth-instar larval exuviae with the following data on two labels "// Ochler. Refiki Medjid, Angora, IV.927, Dr. Medjid, B.M. 1928-403. [white paper elongate rectangular label with red patterned border on three sides] // Syn-type [small white circular label with blue border] //"; two slide-mounted fourth-instar larval exuviae each with two labels bearing identical data as follows "// *Aedes Refiki* "Medjid", Angora, April 927 [slightly rectangular white paper label with two submarginal black lined border and margin perforated (similar to a postage stamp) on three sides] // Syn-type [small white circular label with blue border] //". The three larval exuviae are in fair condition (see below). Each of these specimens has a label with the following information: "PARALECTOTYPE, *Aedes refiki*, By John F. Reinert [on the upper surface][white paper rectangular label with blue border] and John F. Reinert [my handwritten signature on underside of label]". All labels of the above specimens (except Syn-type, genitalia preparation, and paralectotype labels) were hand-written in the same manner. The genitalia of the first-mentioned female were dissected and mounted in Canada balsam on a microscope slide bearing the same label data as the adult on two white paper labels with blue borders.

## Description of the type specimens of *Aedes (Rusticoides) refiki* Medschid, 1928

The following is a revised and more detailed redescription of *Ae. refiki* and is based on the specimens of the type series.

**MALE** (lectotype). *Head*: Antenna dark brown, noticeably shorter than proboscis, pedicel dark brown with patch of small broad overlapping white scales on medial surface (lateral surface obscured), flagellomere 1 with few broad brown scales on medial surface, flagellar whorls with dark setae directed dorsally and ventrally; clypeus dark brown, bare; maxillary palpus dark brown-scaled, palpomere 4 and apical part of palpomere 3 with numerous long dark setae on ventral and ventrolateral surfaces, palpomere 4 slightly down-turned, (palpomere 5 missing); proboscis dark brown-scaled, long, narrow, noticeably longer than forefemur, about 1.35 times length; interocular space with curved narrow white scales, about 12 long white setae; vertex with curved narrow white scales, numerous along coronal suture, sparsely scattered on remainder of area, numerous erect forked golden-white scales; lateral surface of head covered with broad white scales except for small patch of broad brown scales on area anterior to antepnotum; occiput obscured by glue; venter of head with narrow curved white scales anteriorly. *Thorax*: Scutal integument dark brown; scutum covered with curved narrow scales, scales white except for pair of broad stripes of reddish-brown scales (scales less curved and arranged linearly), one stripe on each side of acrostichal area and medial to dorsocentral setae, extending from anterior margin to prescutellar space; dark-scaled stripes separated by narrow white-scaled stripe on acrostichal area; small patch of brown scales on anteromedial part of supraalar area; prescutellar space with curved narrow white scales; parascutellar area rubbed; scutal setae numerous (many setae rubbed off but alveoli remain), on following areas: few anterior promontory, numerous acrostichal (anterior and posterior), few antedorsocentral, numerous dorsocentral (anterior and posterior), several scutal fossal (anterior, lateral, median, and posterior), several antealar, numerous supraalar, 1 parascutellar; scutellum with curved narrow white scales on each lobe, numerous setae on median and lateral lobes; setae relatively short and brown except long and paler on antealar, supraalar, prescutellar, and scutellar areas; pleural integument dark brown; antepnota widely separated, partially rubbed but with several broad white scales, 4 narrower white scales on ventroposterior area, numerous (30+ setae and alveoli) long brown setae; postpronotum with row of moderately broad white scales on dorsal margin, large patch of dark brown moderately broad scales on upper area ventrad of row of white scales, large patch of broad white scales on ventral area, 7 long golden-brown posterior setae; upper proepisternum with numerous moderately broad to broad white scales, 45+ golden-white setae; subspiracular area with large elongate patch of broad white scales; hypostigmal area with small patch of broad white scales; postspiracular area with several broad white scales, 10 golden-white setae (and alveoli); paratergite moderately broad, with moderately broad white scales on ventral margin; mesokatepisternum with broad white scales forming dorsal band, narrow

on anterior margin and becoming broader and apparently covers most of upper and lower posterior areas (posterior area partially rubbed), few upper and several posterior golden setae; prealar area rubbed but 1 broad white scale and numerous alveoli of setae, scales or both remain; mesepimeron with most of surface apparently covered with broad white scales (median area rubbed), 14+ long golden upper setae, and at least 3 alveoli of setae on anterior lower area; mesomeron with dorsal surface well separated dorsally from bases of mid- and hindcoxae; metameron covered with broad white scales; metepisternum apparently without scales on lower area; mesopostnotum with 1 narrow curved white scale and several alveoli (scales, setae or both) on median posterior area; membrane posteromedial to metapostnotum with patch of broad white scales. *Legs*: Fore-, mid- and hindcoxae each with several long setae, brown on forecoxa, golden on mid- and hindcoxae; forecoxa with antecoxal and postcoxal membranes with broad white scales; trochanters with broad white scales, few short setae; forefemur with anterior surface with off-white scales except for brown scales on ventral area of about distal 0.7, few brown scales on proximal area but increasing in number distally to form indistinct stripe (few pale scales intermixed) and brown-scaled band apically with only 2,3 pale scales intermixed, few white scales at apex, posterior surface white-scaled except for narrow brown-scaled stripe ventrally extending from near base to apex; midfemur with anterior surface brown-scaled with several off-white scales intermixed, off-white scales forming narrow stripe ventrally on about proximal 0.8, indistinct basal band and few at apex, posterior surface white-scaled except for narrow brown-scaled apical band; hindfemur having anterior surface with off-white scales but some brown scales intermixed (anterior surface glued to paper triangle and mostly obscured), posterior surface with off-white scales except about distal 0.12 brown-scaled, few off-white scales at apex; femora and tibiae with short dark brown setae; foretibia with anterior surface brown-scaled with narrow white-scaled stripe ventrally extending from near base to apex, posterior surface white-scaled with brown-scaled stripe dorsally extending from base to near apex; midtibia with anterior surface brown-scaled with dorsal half white-scaled from near base to apex, posterior surface white-scaled with few brown scales on proximal area dorsally and distally; hindtibia with anterior surface brown-scaled with white-scaled stripe dorsally on most of length except for short distal area, posterior surface mostly brown-scaled except for some off-white scales intermixed; fore-, mid- and hindtarsi brown-scaled, except foretarsomere 1 with posterior surface mostly white-scaled on about proximal 0.8, midtarsomere 1 with posterior surface mostly white-scaled on about proximal 0.7, and hindtarsomere 1 with posterior surface mostly white-scaled on about proximal 0.8 but with some brown scales intermixed; posttarsi I and II each with 2 unguis, unequal in size, larger unguis with 2 teeth, smaller unguis with one tooth. *Wing*: Glued to paper point with dorsal surface downward making it difficult to observe dorsal scale patterns; dorsal veins brown-scaled except for numerous white scales on proximal part of costa, subcosta, remigium, intermixed on radius, media (proximal part), and possibly few intermixed on proximal parts of cubitus and anal veins; alula with row of pale scales on margin; upper calypter with number of long golden setae on margin. *Halter*: Pedicel pale; capitellum dark with few white scales. *Abdomen*: Tergum I rubbed but with few brown and white scales; terga II-VII brown-scaled with white scales on basal, lateral, median and apical areas, white scales fewer on II but increasing in number on following segments to form band basally and more or less indistinct triangle-shaped patch (brown scales intermixed) on median apical area; numerous long golden setae along lateral margins and few short and moderately long golden setae on posterior margins of terga I-VII; sterna white-scaled with small apicolateral brown-scaled patches (seen on sterna IV-VI); segment VII previously removed and mounted with genitalia in balsam on rectangular piece of transparent yellow plastic).

**MALE GENITALIA** (lectotype). Prerotation sense. *Tergum IX*: Heavily pigmented; posterior margin with 2 widely separated narrow lobes projecting caudally, each bearing 7 short, stout, flattened, slightly curved, pointed, dark setae on distal area, and 2 longer, thinner setae basolateral to stout setae; areas lateral to lobes covered with minute spicules. *Gonocoxite*: Length 0.62 mm; relatively narrow in dorsal view of specimen prior to dissection, but moderately wide in lateral and medial views; moderately to heavily pigmented; covered with minute spicules; medial margin membranous, non-spiculate; dorsal surface with apicomedial, more or less, acute lobe bearing several short thin setae and 3,4 longer, longitudinally striated, stout setae, remainder of dorsal surface with several short thin and few long stout setae on basal area, few moderately long setae laterally near midlength, few short and several long stout setae on distal area, dorsomedial margin with large lobe projecting medioventally, posterobasal margin of lobe 0.46 from apex of gonocoxite, 2 long, longitudinally striated, stout setae at base, midlength wrinkled and bearing numerous short thin setae, distal area with several longer and stouter setae, distal margin more or less straight and with 15 long, lanceolate, curved setae with distal portion having thin annulations, anterior setae longer and broader, setae gradually decrease in length and thickness posteriorly; ventral surface with several moderately long and long stout setae located mostly on medial area, numerous moderately broad scales (as indicated by several remaining and numerous alveoli). *Gonostylus*: Long, length (minus claw) 0.54 of gonocoxite; narrow but about distal 0.27 narrower and curved medially, numerous spicules on proximal 0.85 except basal area, 3 short setae subapically (2 on lateral margin and 1 on medial margin); gonostylar claw relatively long, 0.25 length of gonostylus, narrow throughout, slightly curved, apex blunt, attached at apex on gonostylus. *Claspette*: Long; proximal portion narrow and

bearing 2 short and 3 minute setae, about basal 0.35 with minute spicules, apical portion expanded and bearing 2 short setae subapically; claspette filament short, thick, with about 12 transverse annulations, apex slightly curved. *Phallosome*: Aedeagus heavily pigmented, simple, more or less troughlike, relatively long and narrow, median area narrower than basal and apical portions, base with more or less circular opening bearing short triangular flap laterally on each side and tiny basomedian lobe, apex with median lobe separating short flattened area with few tiny stout spicules on each side; paramere long, slightly longer than aedeagus, moderately pigmented, articulated with basal piece near midlength; basal piece moderately long, heavily pigmented. *Proctiger*: Length slightly shorter than aedeagus; paraproct heavily pigmented, apex curved into short blunt point; 2,3 tiny cercal setae on distal area; cercal sclerite relatively long, moderately pigmented. *Tergum X*: Heavily pigmented; distal portion attached to ventrobasal area of each caudally projected lobe of tergum IX. *Sternum IX*: Relatively short; wide; mostly covered with minute spicules; with heavily pigmented rounded median caudal area (bearing 2 short setae and 2 large and 2 small setal alveoli) and connected to moderately broad basal band expanded caudolaterally as short triangular projection on each side; connected basolaterally to tergum IX by narrow heavily pigmented band.

**FEMALE** (2 paralectotypes). Composite description with supplemental features or differences or both from male. *Head*: Antenna pedicel with small broad overlapping white scales forming contiguous dense patch on medial, dorsal and lateral margins, flagellomere 1 with white scales, flagellomeres usually with 6 dark setae in each whorl pointing in all directions; maxillary palpus slender, about 0.24-0.28 length of proboscis; occiput with numerous erect forked white scales and with similar scales extending over vertex; lateral surfaces of head white-scaled. *Thorax*: Parascutellar area with 1,2 curved narrow white scales, 1 long golden seta; pleural white-scaled patches somewhat larger, prealar area (upper and lower) with numerous moderately broad white scales; mesepimeron with 4 long golden-white setae on anterior lower area; mesopostnotum with 4-9 narrow curved white scales and 1-3 short white setae in posterior median patch; metepisternum with small patch of moderately broad white scales on lower area. *Legs*: Femora and tibiae with scaling somewhat variable, somewhat more white-scaled; foretibia white-scaled except for dorsal surface brown-scaled; midtibia white-scaled except for brown-scaled basal area and anteroventral narrow stripe; hindtibia white-scaled on most of anterior and posterior surfaces, some light brown scales in narrow median posterior stripe; fore-, mid- and hindposttarsi each with 2 ungues, equal in size, each with one tooth. *Wing*: Dorsal surface of veins with white-scaled areas more extensive but variable between the 2 specimens; costa of one specimen with basal area and posterior margin for entire length pale-scaled, remainder brown-scaled, other specimen with only basal area pale-scaled, remainder brown-scaled; subcosta and remigium pale-scaled; radius of one specimen with basal part, anterior and posterior margins pale-scaled, dorsomedian area brown-scaled, other specimen with basal part pale-scaled, remainder brown-scaled; media (M) of one specimen pale-scaled, M<sub>1</sub> and M<sub>2</sub> brown-scaled with few pale scales intermixed, M<sub>3</sub> and M<sub>4</sub> brown-scaled, other specimen with basal part of media pale-scaled, remainder brown-scaled; cubitus of one specimen with basal part pale-scaled, apical part with intermixed pale and brown scales, other specimen without pale scales intermixed on apical part; anal vein with base pale-scaled, remainder brown-scaled with few pale scales intermixed; wing fringe with light brown scales; 1 golden remigial seta. *Abdomen*: Terga I-VIII and sterna II-VIII covered with off-white scales except sterna IV-VII with about 2-5 brown scales intermixed on apicolateral areas.

**FEMALE GENITALIA** (1 paralectotype). *Tergum VIII* (VIII-Te): Covered with minute spicules; base slightly concave; apex nearly straight, wide, with few short and few moderately long setae; lightly pigmented; pale scales on distal 0.80; seta on distal 0.87; VIII-Te index 0.95; VIII-Te/IX-Te index 2.01; length 0.30 mm; width 0.31 mm. *Sternum VIII* (VIII-S): Covered with minute spicules; lightly pigmented; apex with very small (0.06 of VIII-S length) median emargination separating broadly rounded lobes, with short setae medially and increasing somewhat in length laterally; pale scales on distal 0.92; setae on distal 0.95; VIII-S index 0.94; length 0.40 mm; width 0.42 mm. *Tergum IX* (IX-Te): Covered with minute spicules; moderately pigmented; moderately long; moderately wide; apex with moderately deep median emargination, 7,8 short setae and 1-4 broad scales distally on each side of midline, 15 total setae; lateral margins rounded; IX-Te index 0.80; length 0.15 mm; width 0.18 mm. *Insula*: Covered with tiny spicules; lightly pigmented; liplike; with 2 moderately long setae laterally on each side. *Lower vaginal lip*: Covered with short to moderately long spicules; lightly pigmented; narrow; lower vaginal sclerite absent. *Upper vaginal lip*: Covered with short to moderately long spicules; moderately pigmented; narrow; upper vaginal sclerite absent. *Spermathecal eminence*: Membranous; ill-defined but more or less circular in outline; patch of short thin simple spicules on basal area. *Postgenital lobe* (PGL): Covered with short spicules; moderately pigmented; moderately long; wider than dorsal length; apex with small (0.05 of dorsal length) median emargination; 7,8 setae distally on each side of midline, 15 total setae; ventral PGL/cercus index 0.51; dorsal PGL index 0.76; ventral PGL index 1.34; ventral length 0.13 mm. *Cercus* (Ce): Covered with minute spicules; moderately long; moderately wide; apex sharply rounded, with 2 long stout setae; dorsal surface with numerous scales on distal 0.95, setae on distal 0.90; ventral surface with

numerous short setae on distal 0.62; cercus index 2.63; Ce/dorsal PGL index 3.45; length 0.26 mm; width 0.10 mm. *Spermathecal capsules*: One large- and 2 medium-sized; moderately pigmented; spherical; few small spermathecal capsule pores near orifice. *Accessory gland duct*: Basal area lightly pigmented.

**FOURTH-INSTAR LARVA** (3 paralectotypes). Composite description. *Head*: Setae 0,3-C single, short; 1-C single, stout, long, curved medially; 4-C with 4-6 thin branches, short, medial and slightly anterior to 6-C; 5-C with 4,5 long stout aciculate branches, posterior to 4,6-C, slightly medial to 6-C and slightly lateral to 4-C; 6-C with 2 long stout aciculate branches, usually slightly longer than 5-C; 7-C fanlike, with 6-9 long stout aciculate branches, lateral to 4-6-C and slightly anterior to 4,6-C, shorter than 5,6-C; 8-C with 2-4 thin branches; 9-C with 4-6 thin branches; 10-C with 3-5 thin branches; 11-C with 10-16 thin branches, moderately long; 12-C with 7-12 thin branches, short; 13-C single, moderately long; 14-C single to 3-branched, short, stout; 15-C with 4-7 thin branches, short; 18-C single, minute. *Mouthparts*: Dorsomentum heavily pigmented, with 23 or 24 more or less blunt teeth; seta 6-Mx single or 2-branched, short. *Antenna*: Relatively short; shaft 0.43-0.45 mm; heavily pigmented with numerous short stout spicules over entire length; seta 1-A with 5-9 stout aciculate branches, inserted 0.39-0.49 from antennal base, branches not reaching apex of shaft; setae 2-6-A inserted at apex of shaft. *Thorax*: Setae 1-3,5-7,10-P, 1,5-10,12-M, 7,9,10-T long, stout, aciculate; 0-P with 10-16 branches; 1-P with 3-5 branches; 2,10,12-P single, 12-P very long; 3,14-P with 2,3 branches; 4,6,8-P single or 2-branched; 5-P with 3 branches; 7-P with 4-6 branches; 9-P with 2 branches; 11-P with 5-8 branches; 1-M with 2 branches; 2-M with 2-5 branches; 3,5,7,10,12-M single; 4-M with 3-5 branches; 6-M with 7-12 branches; 8-M with 12 branches; 9-M with 9-12 branches; 11-M with 2,3 branches; 13-M with 17-25 branches; 14-M with 25-33 branches; 1-T with 4 branches; 2-T with 2-4 branches; 3-T with 11-13 branches; 4-T with 3-5 branches; 5-T single or 3-branched; 6-T single or 2-branched; 7-T with 10-14 branches; 8-T with 16-21 branches; 9-T with 7-10 branches; 10-12-T single; 13-T with 16-20 branches. *Abdomen*: Setae 1-III-V,VII, 6-I-V, 7-I, 13-III-V long, stout, aciculate; 2,7-I, 0,10-II, 1,8,10,13-III, 4-VII single or 2-branched; 2,9,14-II, 0,2,9,14-III-V, 0,2,12,14-VII single; 1-I with 5-7 branches; 3-I,VII, 5-III, 4-IV with 3-5 branches; 4-I with 17-19 branches; 5-I, 1-II with 4-6 branches; 6,10-I, 3,6-II, 3-III, 11-IV, 12-V with 3,4 branches; 9-I, 12-II,IV, 6-III, 13-V with 2,3 branches; 11-I with 2-6 branches; 12-I,III, 8,11-II, 11-III, 1-VII with 2-4 branches; 13-I single to 3-branched; 4-II with 11-19 branches; 5-II,V with 4,5 branches; 7-II with 4-7 branches; 13-II with 16-25 branches; 4-III with 4-8 branches; 7-III with 6-10 branches; 1,6,8,10,13-IV, 1,3,6,8,10-V, 7-VII with 2 branches; 3-IV with 3 branches; 4-IV, 5-VII with 3-5 branches; 7-IV with 8,9 branches; 7-V with 8-10 branches; 6-VII with 9 branches; segment VIII with comb of 10-12 scales in one irregular row, scales with long stout median apical spine and few short denticles basolaterally; setae 0,14-VIII single, tiny; 1-VIII with 5-8 stout aciculate branches, moderately long; 2-VIII usually single, or 2-branched, slightly longer than 1-VIII; 3-VIII with 6-9 long stout aciculate branches; 4-VIII single, shorter than 5-VIII; 5-VIII with 3,4 long stout aciculate branches; saddle heavily pigmented, without acus, incompletely encircling segment X, without stout spicules but covered with numerous rows of 6-10 minute spicules; seta 1-X with 2,3 long stout aciculate branches; 2-X with 7-9 moderately long branches; 3-X single, long; 4-X comprised of 16,17 moderately long setae each with 5-10 branches attached to well developed grid with both transverse and lateral bars (lateral bar enlarged on posterodorsal portion) and 2,3 shorter precratal setae each with 3-5 branches, 18-20 total setae; 4 short broad anal papillae with broadly rounded apices, dorsal pair slightly longer than ventral pair and approximately equal to dorsal length of saddle. *Siphon*: Heavily pigmented; with well developed acus attached; index 2.05-2.94 (dorsal length to width at 0.5 length) or 2.86-3.24 (dorsal length to basal width); pecten on basal 0.29-0.35, consisting of 12-18 spines, proximal 1,2 spines more widely spaced than others, distal spines smaller, spines with 1-3 stout basoventral denticles except usually absent in distal 1-3; seta 1-S with 5-10 long stout aciculate branches, attached 0.35-0.39 from base of siphon distal to pecten; one accessory seta laterally on siphon slightly above pecten and proximal to 1-S, with 3-5 short branches, 3 moderately long stout aciculate accessory setae dorsolaterally on siphon, usually single but occasionally 2-branched; 2-S short, near distal end of siphon; 6-S single, long; 8-S with 3-5 short branches; 9-S developed as moderately stout hook; 11-13-S single, tiny. The three paralectotype exuviae are damaged, twisted and segments V-VII are tightly compressed and folded so that most setae on these segments could not be examined.

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## References

- Harbach, R.E. & Knight, K.L. (1980) *Taxonomist's Glossary of Mosquito Anatomy*. Plexus Publishing, Incorporated. Marlton, New Jersey. 415 pp.
- Harbach, R.E. & Knight, K.L. (1982) Corrections and additions to *Taxonomists' Glossary of Mosquito Anatomy*. *Mosquito Systematics* (1981) **13**, 201-217.
- Medschid, E. (1928) Über *Aedes lepidonotus* Edw. und *Aedes Refiki* n. sp. *Archiv für Schiffs- und Tropen Hygiene, Leipzig* **32**, 306-315.
- Reinert, J.F. (1990) Medical entomology studies - XVII. Biosystematics of *Kenknightsia*, a new subgenus of the mosquito genus *Aedes* Meigen from the Oriental Region (Diptera: Culicidae). *Contributions of the American Entomological Institute (Gainesville)* **26(2)**, 1-119.
- Reinert, J.F. (1999a) The subgenus *Rusticoidus* of genus *Aedes* (Diptera: Culicidae) in Europe and Asia. *European Mosquito Bulletin* **4**, 1-7.
- Reinert, J.F. (1999b) Descriptions of *Zavortinkius*, a new subgenus of *Aedes*, and the eleven included species from the Afrotropical Region (Diptera: Culicidae). *Contributions of the American Entomological Institute (Gainesville)* **31(2)**, 1-105.
- Reinert, J.F. (2000) Assignment of two North American species of *Aedes* to subgenus *Rusticoidus*. *Journal of the American Mosquito Control Association* **16**, 42-43.
- Townsend, B.C. (1990) Culicidae, pp. 35-152. In: *A Catalogue of the Types of Bloodsucking Flies*. Occasional Papers on Systematic Entomology, Number 7. Natural History Museum, London, United Kingdom. 371 pp.



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