Albuginosus, A New Subgenus of *Aedes* Meigen (Diptera: Culicidae) Described from the Afrotropical Region

John F. Reinert[1,2]

ABSTRACT. *Albuginosus* is described as a new subgenus of the genus *Aedes* Meigen and includes 9 species previously assigned to the subgenus *Aedimorphus* Theobald. The subgenus is described, discussed, and compared to other subgenera. Its distribution in the Afrotropical Region and bionomics are given. A table provides the current status of descriptions and illustrations for all species of the subgenus. Illustrations of the female and male genitalia of *Ae. marshallii* (Theobald), the subgenus type species, are included.

INTRODUCTION

The new subgenus, *Albuginosus*, is herein described and placed in the genus *Aedes* Meigen. The following 9 species, *Ae. capensis* Edwards, *Ae. gilliesi* van Someren, *Ae. haworthi* Edwards, *Ae. kapretwae* Edwards, *Ae. kennethi* Muspratt, *Ae. marshallii* (Theobald), *Ae. ngong* van Someren, *Ae. stokesi* Edwards and *Ae. teesdalei* van Someren, previously assigned to the subgenus *Aedimorphus* Theobald are included in the new subgenus. The current status of descriptions and illustrations for all known life stages (including female and male genitalia) are listed in Table 1. Distinguishing features of *Albuginosus* are presented in the following description and discussion. Illustrations (Figs. 1 and 2) of the female and male genitalia of *Ae. marshallii*, the type species of the subgenus, are provided and are representative of the subgenus. No specimens of the immature stages of species placed in the subgenus were available for study, therefore they are not included in the description. Adults of *Ae. grjebinei* also were not available for examination, but there is no doubt this species should be included in *Albuginosus* based on the information provided in the original description. Since only small numbers of specimens were examined for some species, the range for setal counts and other characters may increase slightly when greater numbers of specimens are studied. Nomenclature used for the stages and structures of Culicidae follow Harbach and Knight [1980, 1981(1982)]. The suggested abbreviation for the subgenus *Albuginosus* is *Alb*.

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[1]Colonel, Medical Service Corps, U.S. Army Medical Materiel Development Activity, ATTN: SGRD-UMB, Fort Detrick, Frederick, MD 21701-5009; and Consultant, Walter Reed Biosystematics Unit, Smithsonian Institution, Washington, DC.

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GENUS *AEDES* MEIGEN

SUBGENUS *ALBUGINOSUS* REINERT, NEW SUBGENUS

Type species: *Stegomyia marshallii* Theobald

Stegomyia in part of Theobald 1901:310; *in part* of Blanchard 1905:260; of Graham 1910:54.

Ochlerotatus in part of Edwards 1912:376; of Bacot 1916:135 (cited by Edwards 1941); *in part* of Ingram and Macfie 1917:144, 1922:169.

Scutomyia in part of Theobald 1905:19, 1907:196, 1910:202.

Aëdes (Aedimorphus) in part of Edwards 1923:499.

Aedes (Ecculex) of Edwards 1924:162.

Aëdes (Aëdimorphus) in part of Edwards 1925:267, 1932:167, 1941:160; *in part* of Evans 1929:522; *in part* of de Meillon et al. 1945:95; of van Someren 1950:7; *in part* of Hopkins 1952:162; *in part* of Muspratt 1953:89, 1955:163, 1956:38.

Aedes (Aedimorphus) in part of Evans 1926:99; *in part* of Ingram and de Meillon 1928:103; *in part* of van Someren 1946:118; *in part* of Hamon and Rickenbach 1954:934; of van Someren 1954:104, 1962:24; *in part* of Horsfall 1955:516; *in part* of Stone et al. 1959:191; *in part* of Pao and Knight 1970:102; *in part* of Knight and Stone 1977:74; *in part* of Knight 1978:16; *in part* of White 1980:125; *in part* of Medler 1980:381; *in part* of Huang and Ward 1981(1982):138.

Aëdes in part of Kumm 1931:65.

FEMALE. *Head.* Antennal pedicel with a large patch of broad overlapping silvery-white scales on mesal surface, short fine setae absent; maxillary palpus dark scaled, 4-segmented; proboscis long, slender, dark scaled; clypeus without scales; eyes contiguous; vertex covered with broad and/or narrow dark or light scales mesally, pale narrow curved scales on lateral areas and on occiput, numerous long erect forked dark scales on vertex and occiput, a patch of overlapping broad silvery scales on each side posterior to eye; postgena with broad decumbent dark scales except for a patch of broad white ones anterior to antepronotum. *Thorax.* Scutum covered with narrow curved dark scales except for a patch of broad silvery-white scales on anterior-lateral scutal fossal areas, broad or narrow silvery-white scales on supraalar area and a stripe along lateral margins of prescutellar space (some species also with silvery-white or pale scales forming patches on median anterior promontory area, posterior scutal fossal area, narrow lines along lateral margins of posterior dorsocentral setae and prescutellar setae, and on posterior medial scutal area), prescutellar space bare mesally; scutellum with

broad white scales on all 3 lobes (*Ae. kapretwae* with narrow curved pale scales on midlobe and broad pale scales on lateral lobes); anterior and posterior acrostichal setae present (several to numerous); anterior and posterior dorsocentral setae present (several to numerous); setae present on median anterior promontory, scutal fossal, posterior medial scutal, prescutellar, antealar, and supraalar areas, one seta on parascutellar area; mesopostnotum bare; antepronotum with broad silvery-white scales, several setae (9-16); postpronotum usually with a few narrow curved dark scales dorsally (*Ae. gilliesi* and *Ae. marshallii* also with a few broad pale scales posteroventrally), 4-7 posterior setae; proepisternum with broad silvery-white scales on upper area and several (9-11) setae, lower area bare; subspiracular area with a patch of broad silvery-white scales; postspiracular area with a few setae (3-6), no scales seen; paratergite covered with overlapping broad silvery-white scales; mesokatepisternum with a small to medium sized patch of overlapping broad silvery-white scales on both upper and lower areas, 2-4 upper and 6-12 lower (posterior) setae; prealar knob without scales, 10-15 setae; mesepimeron with a moderately large patch of broad overlapping silvery-white scales on anterior area, numerous (10-18) upper setae, lower setae absent; hypostigmal, metameral and metepisternal areas bare. *Legs.* Coxae I-III each with a patch of broad silvery-white scales; femora I-III each usually with a dorsoapical white scaled spot (absent in *Ae. teesdalei);* tibiae I-III each with a dorsoapical patch or short apical band of white scales; tarsus III with tarsomeres 1-3 (and usually 4) each with a broad apical band of white scales (van Someren, 1962, indicated tarsomere 4 of *Ae. gilliesi* was entirely dark scaled), tarsomere 5 white scaled. *Wing.* Dorsal and ventral veins dark scaled except for a patch of white scales at base of costa (patch may be reduced to 1-3 scales in *Ae. teesdalei);* alula with a single row of narrow to moderately broad dark scales on margin; remigial setae usually absent. *Halter.* Capitellum with silvery-white scales (may also have some dark scales). *Abdomen.* Terga dark scaled, except for a laterobasal patch of silvery-white scales on I-VII *(Ae. marshallii* usually with a few dorsobasal pale scales on I, IV and V); sterna with basal areas pale scaled and remainder dark scaled. *Genitalia* (Fig. 1 of *Ae. marshallii).* Tergum VIII with basal 0.55-0.90 retracted into segment VII, base broad and nearly straight or slightly concave, apex broad and straight or very slightly concave, moderately broad scales few (0-4 in *Ae. haworthi* and *Ae. kennethi)* or numerous on apical 0.28-0.78 *(Ae. capensis, Ae. kapretwae, Ae. marshallii, Ae. ngong, Ae. stokesi* and *Ae. teesdalei),* several short and very few moderately long setae on apical 0.45-0.87, apical margin with several short and a few moderately long thin setae, VIII-Te index 0.62-0.81, VIII-Te/IX-Te index 1.86-2.27; sternum VIII moderately pigmented with median apical and/or apical margin heavily pigmented, base moderately broad and slightly concave or nearly straight, apex broad and convex with a moderately deep (0.07-0.15 of length) median indentation and gently sloping to lateral margin, moderately broad scales few (0-8) or several (10-27 in *Ae. kapretwae, Ae. marshallii* and *Ae. teesdalei),* several short and a very few moderately long setae scattered over apical 0.84-0.98, setae absent from laterobasal areas, apical margin with numerous short and a very few moderately long thin setae, setae 1-3-S moderately long and moderately stout, located in a more or less diagonal line on approximately basal 0.7, 1-S mesal and removed from base, VIII-S index 0.62-0.79; tergum IX

moderately to heavily pigmented, median area lighter pigmented, consists of 2 elongate lateral plates which are broadly connected mesally, apex with a moderately deep median indentation, 2-6 setae apically on each side of midline, 6-11 total setae, IX-Te index 0.68-0.97, dorsal spheres present; insula long, tongue-like, 3-11 (usually 4-6) small tuberculi on apical 0.25-0.30, each usually with a minute spicule; lower vaginal lip narrow, lower vaginal sclerite absent, ventral tuft present; upper vaginal lip narrow, upper lateral area sharply convex, posterior margin flat with squared lateral angles, upper vaginal sclerite moderately to heavily pigmented, large, moderately wide throughout length, fenestrated on mesal and caudal areas; spermathecal eminence membranous, lightly pigmented, formed into a large median more or less triangular structure with angles broadly rounded, basal 0.7 with numerous short to moderately long simple spermathecal eminence spicules, triangular structure with a long finger-like lobe projected caudad from each laterobasal angle; postgenital lobe moderately long and moderately wide to wide, apex with a moderately deep to deep (0.14-0.44 of dorsal length) median indentation, basal mesal apodeme well developed, 5-14 (usually 6-10) setae on each side of midline, 11-27 (usually 14-20) total setae, ventral PGL/cercus index 0.62-0.73, dorsal PGL index 0.68-0.97, ventral PGL index 1.23-1.59; cercus short and moderately wide, apex broadly rounded, basal area widest, dorsal surface with scales absent, 5-7 long or moderately long stout setae on apical area, several moderately long and a few short setae on apical 0.70-0.88, ventral surface with a few short setae on lateroapical margin, cercus index 1.83-2.16, cercus/dorsal PGL index 2.24-3.24 (usually 2.45-2.73); 3 spermathecal capsules, one large and 2 medium sized, heavily pigmented, spherical, accessory gland duct base heavily pigmented, short.

MALE. Essentially as in the female. *Head.* Antennae shorter than proboscis, plumose, setae directed primarily dorsally and ventrally; maxillary palpus long, approximately equal to length of proboscis, apical 2 segments short and downturned, apical portion of palpomere 3 slightly swollen with several long ventrally directed setae, palpomere 4 with several long ventrally directed setae, palpomere 5 with a basal pale scaled band and a few moderately long to long setae; proboscis dark scaled *(Ae. teesdalei* paler scaled near middle); vertex usually with narrow curved scales anteriorly (broad in *Ae. haworthi, Ae. stokesi* and *Ae. teesdalei). Thorax.* Scutellum with broad pale scales on all 3 lobes (all species including *Ae. kapretwae);* number of setae on pleural areas usually fewer than female. *Abdomen.* Terga with a number of long curved setae along lateral margins. *Genitalia* (Fig. 2 of *Ae. marshallii).* Tergum IX bilobed, each lobe broadly rounded, with 3-8 (usually 4-6) moderately long stout setae apically and separated by a deep and rounded indentation; gonocoxite moderately long and moderately wide, tergal surface somewhat narrowed basally and with a number of short and moderately long setae over most of surface, long setae on lateral margin, sternal surface with numerous moderately long setae over most of area, several short setae primarily on basomesal area, long setae on lateral and apical areas, lateral and ventral surfaces with numerous broad scales; gonostylus moderately long, approximately 0.44-0.66 length of gonocoxite, attached at apex of gonocoxite, basal portion moderately broad to about middle of length, apical portion tapering into a narrow, mesally curved, bluntly pointed apex, gonostylar claw

a long, heavily pigmented, bluntly rounded spiniform which is attached on mesal margin near middle (0.49-0.61) of length, a few (5-7) stout moderately long setae on tergal area from slightly basad of spiniform to approximately 0.75 of gonostylar length, several long setae-like spicules on mesal and sternal areas from spiniform to approximately 0.75 of length, sternal ones thinner and shorter; basal mesal lobe on basal 0.5 of gonocoxite, connected along narrow basal area to mesal membrane of gonocoxite, apical portion somewhat expanded and bearing minute spicules, several (9-16, usually 9-12) short thin setae and several (4-9, usually 4-6) short stout lanceolate setae, basal mesal lobe connected mesally with its mate by a band that is covered with minute spicules; proctiger with paraproct moderately long, narrow, heavily pigmented, apex blunt, base broadened, cercus membranous, setae absent; phallosome with aedeagus divided into 2 lateral plates each with several (5-8) well defined posteriorly directed teeth on apical 0.5, apical teeth curved tergally, dorsal flap present, paramere narrow, slightly shorter than lateral aedeagal plate, basal piece moderately long and moderately broad; and sternum IX moderately long, a few (2-8, usually 4, 5) short to moderately long setae on median apical area.

DISCUSSION. The name selected for this new subgenus, *Albuginosus*, represents the "white spotted" vestiture of the adults as pointed out in the above description. The species placed in *Albuginosus* were previously assigned to the subgenus *Aedimorphus* in Group II by Edwards (1925) and later by him in Group A (Edwards 1932) and Group 1 (Edwards 1941); subsequent authors (van Someren 1950, 1954, 1962; Muspratt 1956) who described new species placed them in Edwards' Group 1. Pao and Knight (1970), while studying the fourth instar larval mandible and maxilla of *Aedimorphus*, placed these species in the Marshallii Group.

The following features are most distinctive for *Albuginosus* and they can be used to separate this subgenus from the others in the genus *Aedes:* in the adults by the combination of (1) antennal pedicel with a large mesal patch of overlapping silvery-white scales, setae absent, (2) tarsus III with tarsomeres 1-3 each with a large apical white scaled band, tarsomere 5 white scaled, (3) scutum with a patch of *broad* silvery-white scales on anterior-lateral scutal fossal area, (4) female maxillary palpus and proboscis dark scaled, (5) acrostichal (anterior and posterior) setae present and well developed, (6) head with numerous long erect forked scales on vertex and occiput, (7) subspiracular area with a patch of silvery-white scales, (8) male maxillary palpus long, apical 2 segments short and downturned, ventroapical portion of palpomere 3 and ventral surface of palpomere 4 with several long setae, palpomere 5 with a basal pale scaled band; in the female genitalia by the combination of (1) tergum VIII shape, (2) sternum VIII shape and index, (3) insula tongue-like with 3-11 tuberculi, (4) upper vaginal lip shape and upper vaginal sclerite large, moderately wide throughout length and fenestrated, (5) spermathecal eminence development, (6) postgenital lobe moderately long, moderately wide, and with a moderately deep to deep median indentation, and (7) cercus short, moderately wide, apex broadly rounded, basal area widest, and scales absent; in the male genitalia by the combination of (1) tergum IX bilobed with each lobe broadly rounded and with 3-8 stout setae apically, (2) gonostylus approximately 0.44-0.66 length of gonocoxite, basal portion

moderately broad to about middle of length, apical portion tapering to narrow, mesally curved, bluntly pointed apex, gonostylar claw a long, heavily pigmented, bluntly rounded spiniform which is attached on mesal margin near middle of length, (3) basal mesal lobe with apical portion bearing several short thin setae and 4-9 short stout lanceolate setae, and (4) aedeagus divided into 2 lateral plates each with 5-8 posteriorly directed teeth on apical 0.5, dorsal flap present; and the immature habitat in plant containers (e.g., tree holes).

Adult features of *Albuginosus* show the most similarity to those of subgenera *Aedimorphus, Diceromyia* Theobald, *Stegomyia* Theobald, and to some extent, *Scutomyia* Theobald; however, from these subgenera they are easily distinguished by tarsus III with tarsomeres 1-3 each with a *broad apical* white scaled band. Other characters that can be used to separate this subgenus from the others follow: from *Aedimorphus* and *Diceromyia* they differ by the antennal pedicel with a large median patch of overlapping silvery-white scales and short fine setae absent *[Ae. (Adm.) insolens* Edwards with a median patch of silvery-white scales, but subspiracular area without scales], and scutum with a patch of *broad* silvery-white scales on anterior-lateral scutal fossal area *[Aedimorphus* with a few species having this character, e.g., *Ae. argenteopunctatus* (Theobald), *Ae. domesticus* (Theobald), *Ae. mutilus* Edwards and *Ae. punctothoracis* (Theobald), but they have the subspiracular area without scales and the antennal pedicel without a median patch of overlapping silvery-white scales]; from *Diceromyia* they also differ in the development of the male maxillary palpus which has the ventroapical portion of palpomere 3 and the ventral area of palpomere 4 with numerous ventrally directed long setae; and from *Stegomyia* and *Scutomyia* they differ by the vertex of the head with numerous long erect forked scales present, the scutum with a patch of *broad* silvery-white scales on the anterior-lateral scutal fossal area, anterior and posterior acrostichal setae present and well developed, and the development of the male maxillary palpus. *Scutomyia* and *Stegomyia* species also have a large median patch of broad overlapping white scales on the antennal pedicel; however, this patch extends onto the dorsal and ventral areas of the antennal pedicel in *Stegomyia. Aedes apicoannulatus* (Edwards) and *Ae. simulans* (Newstead and Carter) are similar to *Albuginosus* species in the apical white scaled bands of tarsus III, but they are easily distinguished by the absence of a white scaled patch on the antennal pedicel, by lacking the anterior-lateral scutal fossal patch of *broad* white scales, by the subspiracular area without scales, and the markedly different male genitalia.

The female genitalia of *Albuginosus* have some similarity to representatives of *Diceromyia* and *Stegomyia,* but they are easily separated from these by the shape of sternum VIII, development of the spermathecal eminence, shape of the upper vaginal lip and the size and shape of the cercus. The female genitalia of *Albuginosus* resemble those of *Ae. apicoannulatus* and *Ae. simulans,* but are easily separated by the one large and 2 medium sized spermathecal capsules while the latter 2 species each have a single large spermathecal capsule. Other differences from these 2 species are the shape of the upper vaginal lip, shape of tergum IX and shape of the cercus. The female

genitalia of *Albuginosus* are quite different from those of *Aedimorphus* in the development of tergum VIII, sternum VIII, upper vaginal lip, spermathecal eminence and cercus.

The male genitalia of all species within the subgenus appear to be very similar and most species are difficult to separate from each other. The male genitalia, as a group, are very distinctive in the shape of the gonostylus with its long, heavily pigmented, bluntly rounded, gonostylar claw which is attached near midlength of the mesal margin, and the basal mesal lobe which bears 4-9 short, stout, lanceolate setae on the apical area. Other important features are listed above. The gonostylus of this subgenus has some similarity to those of species of *Aedimorphus* included in Edwards' (1941) Dentatus Group (No. 7) and Vexans Group (No. 8); however, the development and placement of the gonostylar claw and the overall shape of the gonostylus are different, as well as differences in the basal mesal lobe and paraproct. The lanceolate setae on the basal mesal lobe resemble those of *Scutomyia*, but the genitalia of this subgenus are markedly different in the development of the phallosome, proctiger, basal piece and gonostylus. Male genitalia of *Albuginosus* are notably different from those of *Diceromyia* and *Stegomyia*.

Hopkins (1952) reported the following concerning the larval stage of species in this subgenus "...has a characteristic general facies which is unlikely to allow confusion with any other members of the genus. The sclerotization of head and siphon is so marked as to give a superficial resemblance to the subgenus *Stegomyia*, but from this subgenus (except *vittatus*) they differ in the possession of spiculate antennae, multiple head setae and median unpaired tufts proximal to the barred area of the ventral brush. No other members of the subgenus *[Aedimorphus]* (except *A. lamborni**), or of the other subgenera which possess these characters, have their head and siphon sclerotized to anything approaching the same degree. In all members of the group the head-setae are multiple, the comb-teeth, if spines, are not sharp-pointed, the siphon has convex sides, the subventral tuft consists of branches which are nearly or quite as long as the diameter of the siphon, and the pecten is composed of dark-colored spines, none of which are markedly wider spaced than the others." The asterisk above after *lamborni* refers to a footnote by P.F. Mattingly which also includes *Ae. boneti* Gil Collado as an exception. In a comparative study of the mandible and maxilla of the fourth instar larvae, Pao and Knight (1970) noted differences between *Ae. simulans* and the group of species *Ae. capensis*, *Ae. haworthi*, *Ae. kennethi* and *Ae. marshallii*. In a key to the species of the genus *Aedes* from the Ethiopian Region, Hopkins (1952) includes *Ae. capensis*, *Ae. haworthi*, *Ae. kapretwae*, *Ae. marshallii*, *Ae. ngong* and *Ae. stokesi*. Immatures of *Albuginosus* inhabit plant containers (e.g., tree holes) which is similar to species of *Diceromyia*, *Stegomyia* and *Scutomyia*, but unlike the ground pool breeding *Aedimorphus*.

Descriptions in the literature of *Albuginosus* species include, in most cases, very incomplete narratives and only partial illustrations of the life stages and genitalia. The following list includes the published descriptions and/or illustrations (F = female, M = male, P = pupa, L = larva and * indicates that at least part of stage or structure has been illustrated):

Ae. capensis, F (Edwards 1924); F, F*, M, M* (Edwards 1941); L, L* (van Someren 1946); L, L* (Hopkins 1952); M, L, L* (Muspratt 1953); L, L* (Pao and Knight 1970); *Ae. gilliesi*, F, M (van Someren 1962); *Ae. haworthi*, F, M, M* (Edwards 1923); F* (Haworth 1924); F, F*, M, M* (Edwards 1941); P (de Meillon et al. 1945); L* (van Someren 1946); M, F (van Someren 1950); L (Hopkins 1952); L, L* (Pao and Knight 1970); *Ae. kapretwae*, F, M (Edwards 1941); L, L* (van Someren 1946); L, L* (Hopkins 1952); *Ae. kennethi*, F, M, L (Muspratt 1956); L, L* (Pao and Knight 1970); *Ae. marshallii*, F, F*, M, M* (Theobald 1901); L (Edwards 1912); M* (Edwards 1923); F, M (Edwards 1941); P, P* (de Meillon et al. 1945); L (Hopkins 1952); L* (Muspratt 1953); L, L* (Pao and Knight 1970); F, L (Ribeiro and da Cunha Ramos 1973); *Ae. ngong*, F, M, P, L (van Someren 1950); L (Hopkins 1952); *Ae. stokesi*, P* (Bacot 1916 cited by Edwards 1941); L, L* (Ingram and Macfie 1917); F (Macfie and Ingram 1922); M* (Edwards 1925); F, M, M* (Evans 1926); L, L* (Kumm 1931); F, M, P (Edwards 1941); F, M (van Someren 1950); L, L* (Hopkins 1952); M* (Hamon and Rickenbach 1954); F* [Huang and Ward 1981(1982)]; and *Ae. teesdalei*, F, M, P, P*, L (van Someren 1954).

DISTRIBUTION. Species within the subgenus have their distribution restricted to the Afrotropical Region. Knight and Stone (1977), Knight (1978) and White (1980) list the following distributions for *Albuginosus* species: *Ae. capensis*, Cameroun, Central African Republic, Kenya, Malawi, Mozambique, South Africa and Uganda; *Ae. gilliesi*, Tanzania; *Ae. haworthi*, Burkina Faso, Cameroun, Central African Republic, Ethiopia, Ivory Coast, Kenya, Mozambique, South Africa, Tanzania, Uganda, Zambia and Zimbabwe; *Ae. kapretwae*, Kenya; *Ae. kennethi*, Cameroun and South Africa; *Ae. marshallii*, Angola, Botswana, Kenya, Mozambique, Nigeria[1], South Africa, Uganda, Zaire, Zambia and Zimbabwe; *Ae. ngong*, Kenya and Tanzania; *Ae. stokesi*, Benin, Burkina Faso, Cameroun, Central African Republic, Ethiopia, Ghana, Ivory Coast, Nigeria, Senegal, Sierra Leone, Sudan and Uganda; and *Ae. teesdalei*, Kenya.

BIONOMICS. The usual immature habitats of *Albuginosus* species are plant containers such as tree holes, rot holes, etc. For each species of the subgenus the immature habitats are listed below.

Aedes capensis: tree holes in forest zone, bored and cut bamboos (Edwards 1941); tree holes (van Someren 1946, Hopkins 1952, Muspratt 1953); commonly collected in shaded rock holes in deep forest, twice in axils of wild bananas, and in natural and artificial (bamboo) containers up to 60 feet (Garnham et al. 1946); tree holes in forest, occasionally (Haddow et al. 1951); tree holes chiefly in indigenous timber forests (Muspratt 1955); and tree holes and bamboos (Leeson 1958).

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[1]Reported from Lagos, Nigeria, by Graham (1910:54).

Aedes gilliesi: no information available.

Aedes haworthi: from water collected at the top of coconut palms (Edwards 1923, Haworth 1924); rot hole in a paw-paw tree (Ingram and de Meillon 1928); one record from a cement tank (McHardy 1928 cited *in* Hopkins 1952); tree holes, once from a barrow pit, fairly numerous in sections of bamboo used for traps (Harris 1942); tree holes (Muspratt 1945, van Someren 1950); steps cut in coconut palms, tree holes (van Someren 1955); common in tree holes of *Trachylobium* forest (Lumsden 1955); reared from eggs deposited in bamboo pots filled with water (Muspratt 1956); tree holes and bamboos (Leeson 1958); from axils of *Pandanus rabaiensis* (Lounibos 1979); and bamboos (Lounibos 1981).

Aedes kapretwae: tree hole (Edwards 1941); and tree holes at altitudes over 7500 feet (van Someren 1946).

Aedes kennethi: cavities in wild fig trees (*Ficus* sp.) growing along the Pangola River (Muspratt 1956).

Aedes marshallii: rot hole in a tree (Ingram and de Meillon 1928); tree holes (Muspratt 1945, Hopkins 1952, Ribeiro and da Cunha Ramos 1973); chiefly a brush-veld tree hole inhabiting species in the Transvaal but it also occurs in indigenous montane forests in Natal (Muspratt 1955); Marula tree holes (Steyn et al. 1955); reared from eggs deposited in bamboo pots filled with water (Muspratt 1956); and tree holes and bamboos (Leeson 1958).

Aedes ngong: tree holes (van Someren 1950, Mattingly *in* Hopkins 1952); larvae obtained by filling dry tree holes in a forest with water (van Someren 1955); and common in tree holes of *Trachylobium* forest (Lumsden 1955).

Aedes stokesi: twice from rot holes in living trees (various), twice from rot holes in living mango trees, twice from rot holes in living cotton trees, once in pool formed by roots of cotton trees (Evans 1926); tree holes including the flamboyant, *Poinciana regia* (Kumm 1931); tree holes (van Someren 1950, Haddow et al. 1951); tree holes, once from a discarded tin (Hopkins 1952); rot hole in a mangrove (Mattingly *in* Hopkins 1952); tree holes in *Mangifera indica, Parkia filicoidea, Newbouldia laevis, Psidium guajava* and gourds (Service 1965); tree holes, also from artifical containers at 1 and 10 meters above ground (Neri et al. 1968); tree holes and bamboo cups (Hamon et al. 1971); depressions or holes in stems of cactus-like *Euphorbia kamerunica* (Lee 1974); and 31 times from tree holes and 9 times from fruit shells during August and September (Raymond et al. 1976).

Aedes teesdalei: bamboo pots in forest (van Someren 1954); steps cut in coconut palms (not uncommon), tree holes and bamboo pots (scarce), plant axils and seed pods (exceptional), once from bamboo pots indoors (van Someren et al. 1955); tree holes (Lounibos 1980); and 2345 larvae from tree holes at 0-2 m and 98 larvae from bamboos at 1 m (Lounibos 1981).

Information on the adult females of species included in the subgenus are as follows.

Aedes capensis: biting man very rarely (Garnham et al. 1946); biting man (Haddow et al. 1951); and biting man at ground level (Metselaar et al. 1973).

Aedes gilliesi: no information available.

Aedes haworthi: biting man between 0600-1400 hours (Haddow et al. 1947); biting man in the bush (very rare), biting man indoors (once) (van Someren et al. 1955); biting man outdoors (Leeson 1958); net catches in bush (Teesdale 1959); and biting man in a house (Metselaar et al. 1973).

Aedes kapretwae: no information available.

Aedes kennethi: no information available.

Aedes marshallii: collected during February and March (Theobald 1901); taken frequently biting man (Muspratt 1955); biting man outdoors (Leeson 1958); and collected on human bait during April between 0900-1100 hours (Neri et al. 1968).

Aedes ngong: no information available.

Aedes stokesi: attacks man (Edwards 1941); biting man on forest floor (Lumsden 1951); collected from pig baited Magoon traps (Service 1964); collected on human bait during months of January through December and at 0900-1100 and 1800-2000 hours (Neri et al. 1968); biting man in forest (Hamon et al. 1971); taken during the day and night on human bait (Cordellier and Geoffroy 1974); collected on human bait and in light traps in a relict forest in the Sudanese savannah (Gayral et al. 1975); taken on human bait in a relict forest (Bang et al. 1979); and collected on human bait and in light trap and spray collections (Lee 1979).

Aedes teesdalei: no information available.

In Cameroun, Bunyamwera virus was isolated from a mixed pool of *Ae. capensis, Ae. kummi* Edwards, *Ae. mutilus, Ae. simulans* and *Ae. tarsalis* group of species (Brottes et al. 1966). Two hundred fifty-three adults of *Ae. kennethi* and 14 of *Ae. marshallii* from Tongaland, South Africa, were negative when tested for infection with arboviruses (McIntosh et al. 1972). Middleburg virus was isolated once from *Ae. marshallii* collected in Natal, South Africa (Berge 1975). *Aedes stokesi* was reported to be able to transmit yellow fever virus through biting in laboratory experiments (Bauer 1928a, 1928b, Lewis 1947). *Aedes stokesi* was considered by Cordellier and Geoffroy (1974) to be a potential vector of yellow fever in the Ivory Coast and Ardoin et al. (1976) considered it a potential vector of yellow fever in the lowlands of Arba-Minch District of Ethiopia. This species in Senegal also was considered a potential vector of yellow fever by Cornet et al. (1978).

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LITERATURE CITED

Ardoin, P., F. Rodhain and C. Hannoun. 1976. Epidemiological study of arboviruses in the Arba-Minch District of Ethiopia. Trop. Geograph. Med. 28: 309-315.

Bang, Y. H., D. N. Bown, A. O. Onwubiko and F. L. Lambrecht. 1979. Prevalence of potential vectors of yellow fever in the vicinity of Enugu, Nigeria. Cah. O.R.S.T.O.M., Ser. Entomol. Med. Parasitol. 17: 139-147.

Bauer, J. H. 1928a. The transmission of yellow fever by mosquitoes other than *Aedes aegypti*. J. Am. Med. Assn. 90: 2091-2092.

Bauer, J. H. 1928b. The transmission of yellow fever by mosquities other than *Aedes aegypti*. Am. J. Trop. Med. 8: 261-282.

Berge, T. O. 1975. Editor. International catalogue of arboviruses including certain other viruses of vertebrates. 2nd Ed. Dept. Hlth. Education Welfare Publ. No. (CDC) 75-8301, 789 p.

Blanchard, R. 1905. Les moustiques histoire naturelle et medicale. F. R. de Rudeval, Paris, 673 p.

Brottes, H., A. Rickenbach, P. Bres, J-J. Salaun and L. Ferrara. 1966. Les arbovirus au Cameroun, isolements a partir de moustiques. Bull. Wld. Hlth. Org. 35: 811-825.

Cordellier, R. and B. Geoffroy. 1974. Contribution a l'etude des Culicides de la Republique Centrafricaine rythmes d'activites en secteur preforestier. Cah. O.R.S.T.O.M. Ser. Entomol. Med. Parasitol. 12: 19-48.

Cornet, M., R. Chateau, M. Valade, P. L. Dieng, H. Raymond and A. Lorand. 1978. Donnees bio-ecologiques sur les vecteurs potentiels du virus amaril au Senegal oriental. Role des differentes especes dans la transmission du virus. Cah. O.R.S.T.O.M. Ser. Entomol. Med. Parasitol. 16: 315-341.

de Meillon, B., M. Parent and L. O'C. Black. 1945. Descriptions of new larvae and pupae of Ethiopian Culicini. Bull. Entomol. Res. 36: 85-101.

Edwards, F. W. 1912. Revised keys to the known larvae of African Culicinae. Bull. Entomol. Res. 3: 373-385.

Edwards, F. W. 1923. Mosquitoes reared by Dr. W. E. Haworth from coconut palms in East Africa. Trans. R. Soc. Trop. Med. Hyg. 16: 498-501.

Edwards, F. W. 1924. Some mosquitos from Ovamboland, S. W. Africa, and from the Cape Province. Ann. S. Afr. Mus. 19: 159-163.

Edwards, F. W. 1925. Mosquito notes. - V. Bull. Entomol. Res. 15: 257-270.

Edwards, F. W. 1932. Diptera, Fam. Culicidae. *In* P. Wytsman, Genera Insectorum. Desmet-Verteneuil, Brussels, Fasc. 194, 258 p.

Edwards, F. W. 1941. Mosquitoes of the Ethiopian region III. - Culicine adults and pupae. Br. Mus. (Nat. Hist.), London, 499 p.

Evans, A. M. 1926. Notes on Freetown mosquitos, with descriptions of new and little-known species. Ann. Trop. Med. Parasitol. 20: 97-106.

Evans, A. M. 1929. *Aedes (Aedimorphus) apicoannulatus* Edwards and yellow fever: A correction. Ann. Trop. Med. Parasitol. 23: 521-522.

Garnham, P. C. C., J. O. Harper and R. B. Highton. 1946. The mosquitoes of the Kaimosi Forest, Kenya Colony, with special reference to yellow fever. Bull. Entomol. Res. 36: 473-496.

Gayral, P., G. Pichon and J. Hamon. 1975. Etudes ecologiques sur la faune culicidienne d'une relique forestiere en zone de savane Africaine: 1 re Partie. Ann. Soc. Entomol. France (New Series) 11: 143-171.

Graham, W. M. 1910. List of mosquitoes found at Lagos, up to November 1909. Bull. Entomol. Res. 1: 54.

Haddow, A. J., J. D. Gillett and R. B. Highton. 1947. The mosquitoes of Bwamba County, Uganda. V. - The vertical distribution and biting-cycle of mosquitoes in rain-forest, with further observations on microclimate. Bull. Entomol. Res. 37: 301-330.

Haddow, A. J., E. C. C. van Someren, W. H. R. Lumsden, J. O. Harper and J. D. Gillett. 1951. The mosquitoes of Bwamba County, Uganda. VIII. - Records of occurrence, behaviour and habitat. Bull. Entomol. Res. 42: 207-238.

Hamon, J., G. Pichon and M. Cornet. 1971. La transmission du virus amaril en Afrique occidentale. Ecologie, repartition, frequence et controle des vecteurs, et observations concernant l'epidemiologie de la fievre jaune. Cah. O.R.S.T.O.M., Ser. Entomol. Med. Parasitol. 9: 3-60.

Hamon, J. and A. Rickenbach. 1954. Contribution a l'etude des Culicides d'Afrique occidentale. Description d'*Aedes (Aedimorphus) mattinglyi* sp.n., *Aedes (Banksinella) jamoti* sp.n. notes complementaires sur *Aedes (Aedimorphus) stokesi* Evans, *Aedes (Banksinella) bolensis* Edwards. Bull. Soc. Pathol. Exot. 47: 930-941.

Harbach, R. E. and K. L. Knight. 1980. Taxonomists' glossary of mosquito anatomy. Plexus Publishing, Inc., Marlton, New Jersey, 415 p.

Harbach, R. E. and K. L. Knight. 1981 (1982). Corrections and additions to *Taxonomists' Glossary of Mosquito Anatomy*. Mosq. Syst. 13: 201-217.

Harris, W. V. 1942. Notes on culicine mosquitos in Tanganyika Territory. Bull. Entomol. Res. 33: 181-193.

Haworth, W. E. 1924. Mosquitoes and coconut palms. A mosquito survey of palm trees in east Africa and the problems resulting therefrom. Tran. R. Soc. Trop. Med. Hyg. 18: 162-196.

Horsfall, W. R. 1955. Mosquitoes, their bionomics and relation to disease. Ronald Press Co., New York, 723 p.

Hopkins, G. H. E. 1952. Mosquitoes of the Ethiopian Region I. - Larval bionomics of mosquitoes and taxonomy of culicine larvae. 2nd Ed. With notes and addenda by P. F. Mattingly. Br. Mus. (Nat. Hist.), London, 355 p.

Huang, Y-M. and R. A. Ward. 1981(1982). A pictorial key for the identification of the mosquitoes associated with yellow fever in Africa. Mosq. Syst. 13: 138-149.

Ingram, A. and B. de Meillon. 1928. A mosquito survey of certain parts of South Africa, with special reference to the carriers of malaria and their control. (Part II.). Publ. S. Afr. Inst. Med. Res. 4: 83-170.

Ingram, A. and J. W. S. Macfie. 1917. The early stages of certain west African mosquitos. Bull. Entomol. Res. 8: 135-154.

Knight, K. L. 1978. Supplement to a catalog of the mosquitoes of the world (Diptera: Culicidae). Thomas Say Found., Entomol. Soc. Am., Suppl. to vol. VI, 107 p.

Knight, K. L. and A. Stone. 1977. A catalog of the mosquitoes of the world (Diptera: Culicidae). Thomas Say Found., Entomol. Soc. Am., vol. VI, 611 p.

Kumm, H. 1931. Studies on *Aedes* larvae in south-western Nigeria and in the vicinity of Kano. Bull. Entomol. Res. 22: 65-74.

Lee, V. H. 1974. *Aedes (Stegomyia)* spp. utilizing *Euphorbia kamerunica* as larval habitat in Nigeria. Mosq. News 34: 229-231.

Lee, V. H. 1979. Further observations on possible mosquito vectors (Diptera: Culicidae) of yellow fever on the Jos Plateau, Nigeria. Bull. Entomol. Res. 69: 255-265.

Leeson, H. S. 1958. An annotated catalogue of the culicine mosquitoes of the Federation of Rhodesia and Nyasaland and neighbouring countries, together with locality records for Southern Rhodesia. Trans. R. Entomol. Soc. London, 110: 21-51.

Lewis, D. J. 1947. General observations on mosquitos in relation to yellow fever in the Anglo-Egyptian Sudan. Bull. Entomol. Res. 37: 543-566.

Lounibos, L. P. 1979. Mosquitoes occurring in the axils of *Pandanus rabaiensis* Rendle on the Kenya coast. Cah. O.R.S.T.O.M. Ser. Entomol. Med. Parasitol. 17: 25-29.

Lounibos, L. P. 1980. The bionomics of three sympatric *Eretmapodites* (Diptera: Culicidae) at the Kenya coast. Bull. Entomol. Res. 70: 309-320.

Lounibos, L. P. 1981. Habitat segregation among African treehole mosquitoes. Ecol. Entomol. 6: 129-154.

Lumsden, W. H. R. 1951. Probable insect vectors of yellow fever virus, from monkey to man, in Bwamba County, Uganda. Bull. Entomol. Res. 42: 317-330.

Lumsden, W. H. R. 1955. Entomological studies, relating to yellow fever epidemiology, at Gede and Taveta, Kenya. Bull. Entomol. Res. 46: 149-183.

Macfie, J. W. S. and A. Ingram. 1922. On the genital armature of the female mosquito. Ann. Trop. Med. Parasitol. 16: 157-188.

McIntosh, B. M., P. G. Jupp and J. de Sousa. 1972. Further isolations of arboviruses from mosquitoes collected in Tongaland, South Africa, 1960-1968. J. Med. Entomol. 9: 155-159.

Medler, J. T. 1980. Insects of Nigeria--Check list and bibliography. Memoirs Am. Entomol. Inst. (Ann Arbor), No. 30, 919 p.

Metselaar, D., E. C. C. van Someren, J. H. Ouma, H. K. Koskei and W. Gemert. 1973. Some observations on *Aedes (Aedimorphus) dentatus* (Theo.) (Dipt., Culicidae) in Kenya. Bull. Entomol. Res. 62: 597-603.

Muspratt, J. 1945. Observation on the larvae of tree-hole breeding Culicini (Diptera: Culicidae) and two of their parasites. J. Entomol. Soc. S. Africa 8: 13-20.

Muspratt, J. 1953. Research on South African Culicini (Diptera, Culicidae) II. - Taxonomy relating to eight species of *Aedes*. J. Entomol. Soc. S. Africa 16: 83-93.

Muspratt, J. 1955. Research on South African Culicini (Diptera, Culicidae). III. - A check-list of the species and their distribution, with notes on taxonomy, bionomics and identification. J. Entomol. Soc. S. Africa 18: 149-207.

Muspratt, J. 1956. Research on South African Culicini (Diptera, Culicidae). IV. - Additional distribution records, taxonomic descriptions and miscellaneous notes. J. Entomol. Soc. S. Africa 19: 37-46.

Neri, P., C. Serie, L. Andral and A. Poirier. 1968. Etudes sur la fievre jaune en Ethiopie 4. Recherches entomologiques a la station de Manera. Bull. Wld. Hlth. Org. 38: 863-872.

Pao, B. and K. L. Knight. 1970. The fourth instar larval mandible and maxilla of selected *Aedes (Aedimorphus)* species (Diptera, Culicidae). Mosq. Syst. Newsletter 2: 98-131.

Raymond, H. L., M. Cornet and P. Y. Dieng. 1976. Etudes sur les vecteurs sylvatiques du virus amaril. Inventaire provisoire des habitats larvaires d'une foret-galarie dan le foyer endemique du Senegal oriental. Cah. O.R.S.T.O.M. Ser. Entomol. Med. Parasitol. 14: 301-306.

Ribeiro, H. and H. da Cunha Ramos. 1973. Research on the mosquitoes of Angola VIII - The genus *Aedes* Meigen, 1818 (Diptera: Culicidae). Check-list with new records, keys to females and larvae, distribution and taxonomic and bioecological notes. Inst. Hyg. Med. Trop. An. 1: 107-138.

Service, M. W. 1964. The attraction of mosquitoes by animal baits in the northern Guinea savannah of Nigeria. J. Entomol. Soc. S. Africa 27: 29-36.

Service, M. W. 1965. The ecology of the tree-hole breeding mosquitoes in the northern Guinea savannah of Nigeria. J. Appl. Ecol. 2: 1-16.

Steyn, J. J., R. R. Innes and K. H. Schulz. 1955. A culicine mosquito survey of the upper Limpopo River Valley. J. Entomol. Soc. S. Africa 18: 238-246.

Stone, A., K. L. Knight and H. Starcke. 1959. A synoptic catalog of the mosquitoes of the world (Diptera, Culicidae). Thomas Say Found., Entomol. Soc. Am., vol. VI, 358 p.

Teesdale, C. 1959. Observations on the mosquito fauna of Mombasa. Bull. Entomol. Res. 50: 191-208.

Theobald, F. V. 1901. A monograph of the Culicidae or mosquitoes, mainly compiled from the collections received at the British Museum from various parts of the world. Br. Mus. (Nat. Hist.), London, vol. I, 424 p.

Theobald, F. V. 1905. Diptera, Fam. Culicidae, *In* P. Wytsman, Genera Insectorum. M. P. Wytsman, Brussels, Fasc. 26, 50 p.

Theobald, F. V. 1907. A monograph of the Culicidae or mosquitoes, mainly compiled from collections received at the British Museum. Br. Mus. (Nat. Hist.), London, vol. IV, 639 p.

Theobald, F. V. 1910. A monograph of the Culicidae or mosquitoes, mainly compiled from collections received at the British Museum. Br. Mus. (Nat. Hist.), London, vol. V, 646 p.

van Someren, E. C. C. 1946. Ethiopian Culicidae: Notes and descriptions of some new species and hitherto unknown larvae and pupae (Diptera). Trans. R. Entomol. Soc. London 96: 109-124.

van Someren, E. C. C. 1950. Ethiopian Culicidae: Description of a new *Aedes* from east Africa and notes on two known *Aedes* with which it might be confused. Proc. R. Entomol. Soc. London (B) 19: 7-10.

van Someren, E. C. C. 1954. New Culicini from the Kenya coast. Proc. R. Entomol. Soc. London (B) 23: 103-109.

van Someren, E. C. C. 1962. Ethiopian Culicidae: Three new *Aedes* from Tanganyika, with a description of the male of *Aedes usambara* Mattingly and the female of *Uranotaenia henrardi* Edwards. Proc. R. Entomol. Soc. London (B) 31: 19-26.

van Someren, E. C. C., C. Teesdale and M. Furlong. 1955. The mosquitos of the Kenya coast; records of occurrence, behaviour and habitat. Bull. Entomol. Res. 46: 463-493.

White, G. B. 1980. Family Culicidae, p. 114-148. *In* R. W. Crosskey, Ed., Catalogue of the Diptera of the Afrotropical Region. Br. Mus. (Nat. Hist.), London.

LIST OF FIGURE ABBREVIATIONS

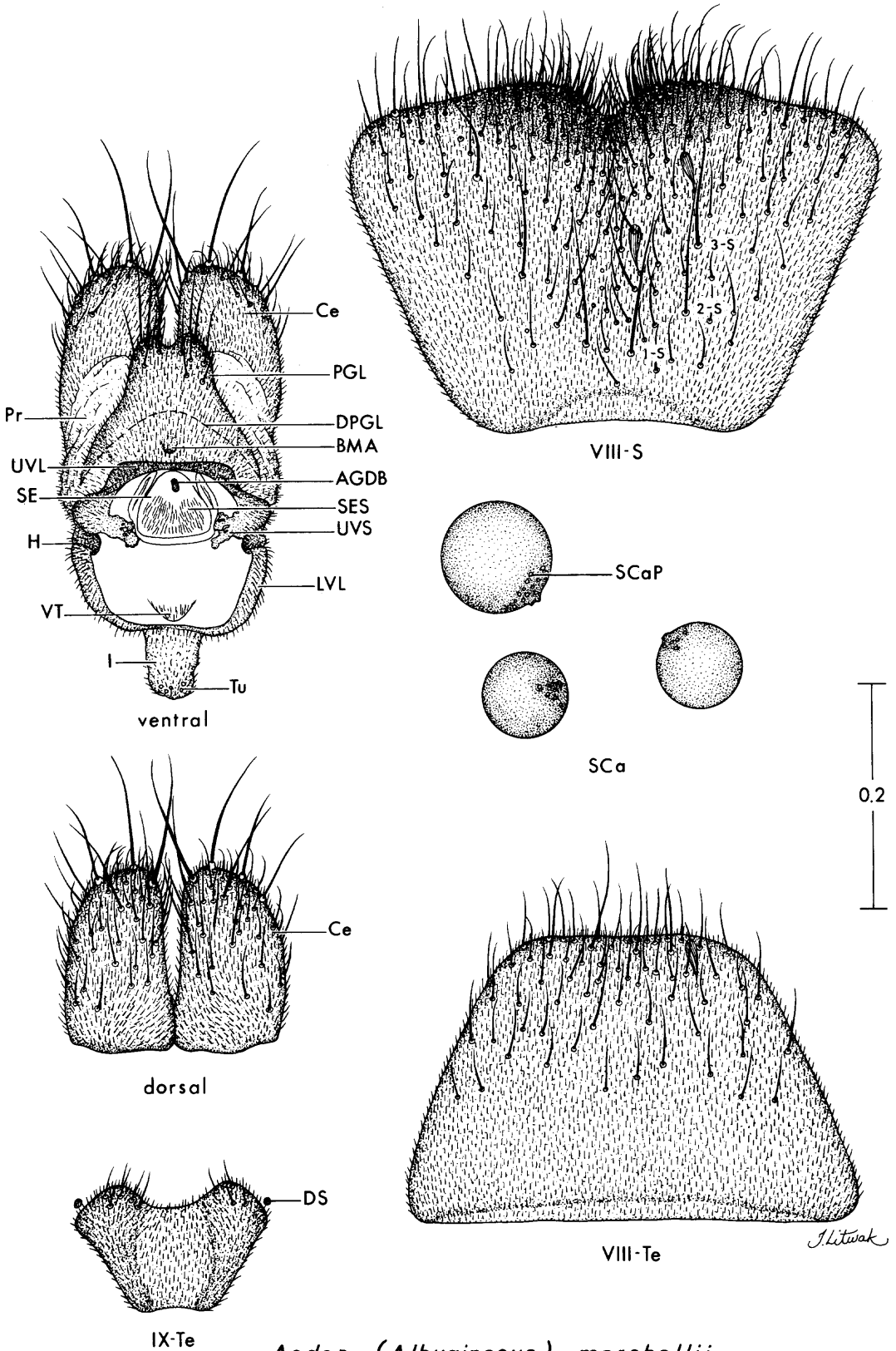
Female Genitalia

AGDB	=	Accessory gland duct base
BMA	=	Basal mesal apodeme
Ce	=	Cercus
DPGL	=	Line of attachment of protiger to dorsal surface of PGL
DS	=	Dorsal sphere
H	=	Hinge
I	=	Insula
IX-Te	=	Tergum IX
LVL	=	Lower vaginal lip
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-Te	=	Tergum VIII
VIII-S	=	Sternum VIII
VT	=	Ventral tuft
1-3-S	=	Setae 1-3

Male Genitalia

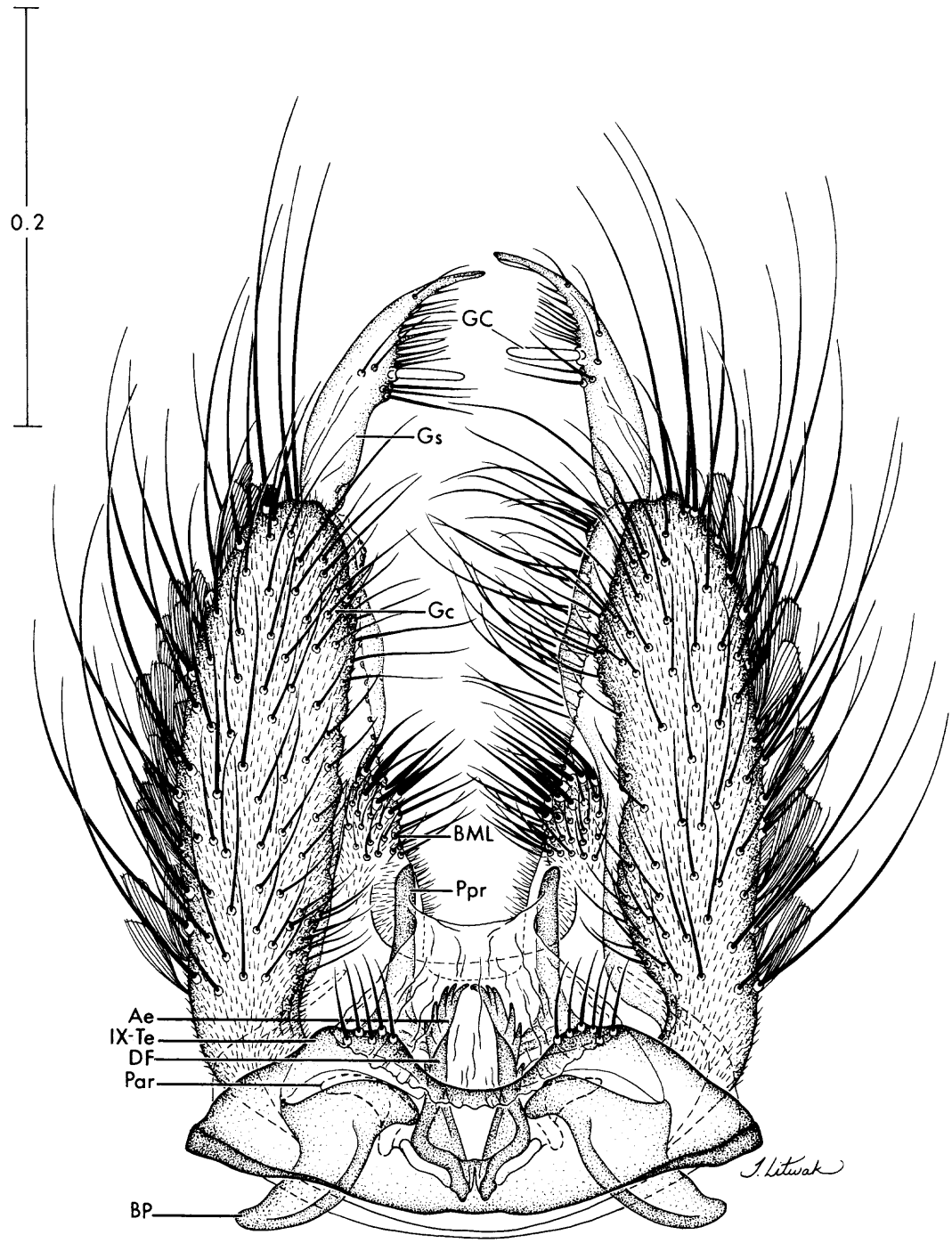
Ae	=	Aedeagus
BML	=	Basal mesal lobe
BP	=	Basal piece
DF	=	Dorsal flap of aedeagus
Gc	=	Gonocoxite
GC	=	Gonostylar claw
Gs	=	Gonostylus
IX-Te	=	Tergum IX
Par	=	Paramere
Ppr	=	Paraproct

Fig. 1



Aedes (Albuginosus) marshallii

Fig. 2



Aedes (Albuginosus) marshallii

Table 1. Species of *Aedes (Albuginosus)* and status of known stages/structures.

SPECIES	F	FG	M	MG	P	L	E
Ae. capensis	X*	-	X	X*	-	X*	-
Ae. gilliesi	X	-	X	X	-	-	-
Ae. haworthi	X*	-	X	X*	-	X*	-
Ae. kapretwae	X	-	X	X	-	X*	-
Ae. kennethi	X	-	X	X	-	X*	-
Ae. marshallii	X*	X*	X*	X*	X*	X*	-
Ae. ngong	X	-	X	X	X	X	-
Ae. stokesi	X*	X	X	X*	X*	X*	-
Ae. teesdalei	X	-	X	X	X*	X	-

X = Indicates stage or structure has been described.
X* = Indicates stage or structure has been illustrated.
- = Indicates stage or structure has not been described or illustrated.
F = Female
FG = Female genitalia
M = Male
MG = Male genitalia
P = Pupa
L = Larva
E = Egg