

ACHILIXIUS, A NEW GENUS, CONSTITUTING A NEW
FAMILY OF THE FULGOROIDEA (HOMOPTERA)

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ONE PLATE

In 1914 Melichar described a Philippine homopteron as *Syn-tames tubulifer*.¹ In 1917 I rejected this species from the Derbidae² because of the long apical joint of the rostrum and suggested that it represented a new genus of Cixiidae.

I have recently been reconsidering the classification of the Fulgoroidea, with the result that I am unable to place this species in either the Cixiidae or the Achilidae, although it has certain characters of both of these families. The venation of the tegmen would place it in the Achilidae, the claval vein running into the apex of the clavus which is roundly closed; but the male genitalia are quite different from all of the Achilidae with which I am acquainted. The general facies of the insect also differs considerably from that of the Achilidae, the body not being flattened, and the tegmina are fairly steeply tectiform. While the male genitalia might find a place in the Meenoplinae (Cixiidae) and the abdominal appendages are similar to those found in *Benna* and *Bennaria*, the venation is not of the cixiid type. The type of male genitalia found in the Derbidae is distinct from that of all other fulgorids and will not allow of the species under consideration being placed therein. To place it in any one of these three families would only lead to confusion by breaking down good family characters. Therefore, I consider it better to place it in a family by itself whose nearest relationship would be with the Meenoplinae (Cixiidae).

Family ACHILIXIIDÆ novum

Genus ACHILIXIUS novum

Vertex and face in profile forming a curve without any division between them; in dorsal view the vertex is much wider

¹ Philip. Journ. Sci. § D 9 (1914) 269.

² Philip. Journ. Sci. § D 12 (1917) 59.

than long; the median and lateral carinæ continued on to the face, which is but very slightly narrowed between the eyes. Clypeus tricarinate, the median carina obscure. Antennæ reaching to base of clypeus, first segment as wide as long, second narrow at base, thickened on apical portion. Posterior margin of pronotum very shallowly emarginate, obscurely tricarinate, the lateral carinæ widely diverging on posterior half and joining hind margin near tegulæ; the three carinæ of mesonotum straight, parallel, obscure. In the tegmina Sc and R separate about one-third from base of tegmen; four branches of R at apex; Cu1 and Cula touch for a short distance before apex. Near the base of the abdomen there are two pairs of processes arising from the pleura; the first two processes are longer than broad, narrowed at base, slightly flattened, and bear two depressions on apex; the second two are not so long and appear more like swellings on the pleura than processes, and each bears a small depression on apex. The pygofer differs from that of all the Achilidæ with which I am acquainted; it is compressed laterally and has a chitinous bar across the middle to which the base of the ædeagus is attached, thus allowing it movement around the point of attachment but not allowing it to be protruded. I know of no other fulgorid with this feature. In certain respects this type of genitalia approaches the type found in the Meenoplinae of the Cixiidæ.

Type, *Achilixius singularis* sp. nov.

Achilixius singularis sp. nov. Plate 1, fig. 1.

Male.—Length, 2.7 millimeters; tegmen, 4. Brown; frons, vertex, and pronotum dull, with minute punctures, mesonotum shiny, with very few punctures; antennæ, lateral carinæ of frons, lateral portions of pronotum, legs, abdominal pleura, and pleural processes lighter brown or yellow. Tegmina brown, veins same color as membrane, except the apical veins, which are light, no tubercles or macrotrichæ; wings fuscous brown with dark veins.

Pygofer large, compressed laterally, opening longer than broad, lateral margins slightly angular in middle, no anal emargination, basal foramen comparatively small. Anal segment large, much longer than broad, subparallel sided, apex slightly angular in middle, the lateral angles projecting; dorsal surface flattened on basal two-thirds, rounded on apical third, anus at base, ventral surface concave. Genital styles long, slender, subspiniiform, flattened slightly on basal third where there is a subquadrate process and a small curved spine on the outer

margin. *Ædeagus* cultriform, the dorsal margin straight, broad, the ventral edge narrow and formed of two thin laminae between which is the orifice. The bar across pygofer strong, arising from the angulation on the middle of lateral margins.

LUZON, Mountain Province, Baguio (*Baker*), 1 male. Type No. 1045.

Achilixius tubulifer (*Melichar*). Plate 1, figs. 2 and 3.

Syntames tubulifer MELICHAR, Philip. Journ. Sci. § D 9 (1914) 269, pl. 1, fig. 2; MUIR, Philip. Journ. Sci. § D 12 (1917) 59.

Male pygofer small, laterally compressed, margins entire, crossbar not very strong or chitinous. Anal segment short and broad, in dorsal view nearly round, with an obscure emargination at apex. Genital styles small and narrow, apex rounded, with the inner edge drawn out into a small point and a small projection on the outer corner. *Ædeagus* subcultrate, with the orifice down the ventral or anterior edge.

LUZON, Laguna Province, Los Baños, Mount Maquiling, and Mount Banahao (*Baker and Muir*), a number of specimens.

Achilixius sandakanensis sp. nov. Plate 1, fig. 4.

Male.—Length, 2 millimeters; tegmen, 3. In coloration this species is similar to *A. singularis*, but the general color is darker and the legs are marked with obscure fuscous bands.

Pygofer larger than in *A. tubulifer*, the ventral edge produced roundly, the crossbar nearer to the anal segment than in *A. singularis*, lateral margins entire or very slightly sinuous. Anal segment large, anus about one-third from base, in dorsal view much longer than broad, apex rounded. Genital styles flat and broad, subequal in width throughout, apex rounded with a strong, slightly curved spine on the inner surface, on the outer margin near apex slightly rounded. *Ædeagus* strong, chitinous, subcultrate with the base, wide and curved upward nearly at a right angle; apex acute, produced into two fine points; orifice along ventral margin.

Female.—Length, 2.2 millimeters; tegmen, 3. In color similar to male.

BORNEO, Sandakan (*Baker 10172*), 5 males and 2 females. Type No. 1046.

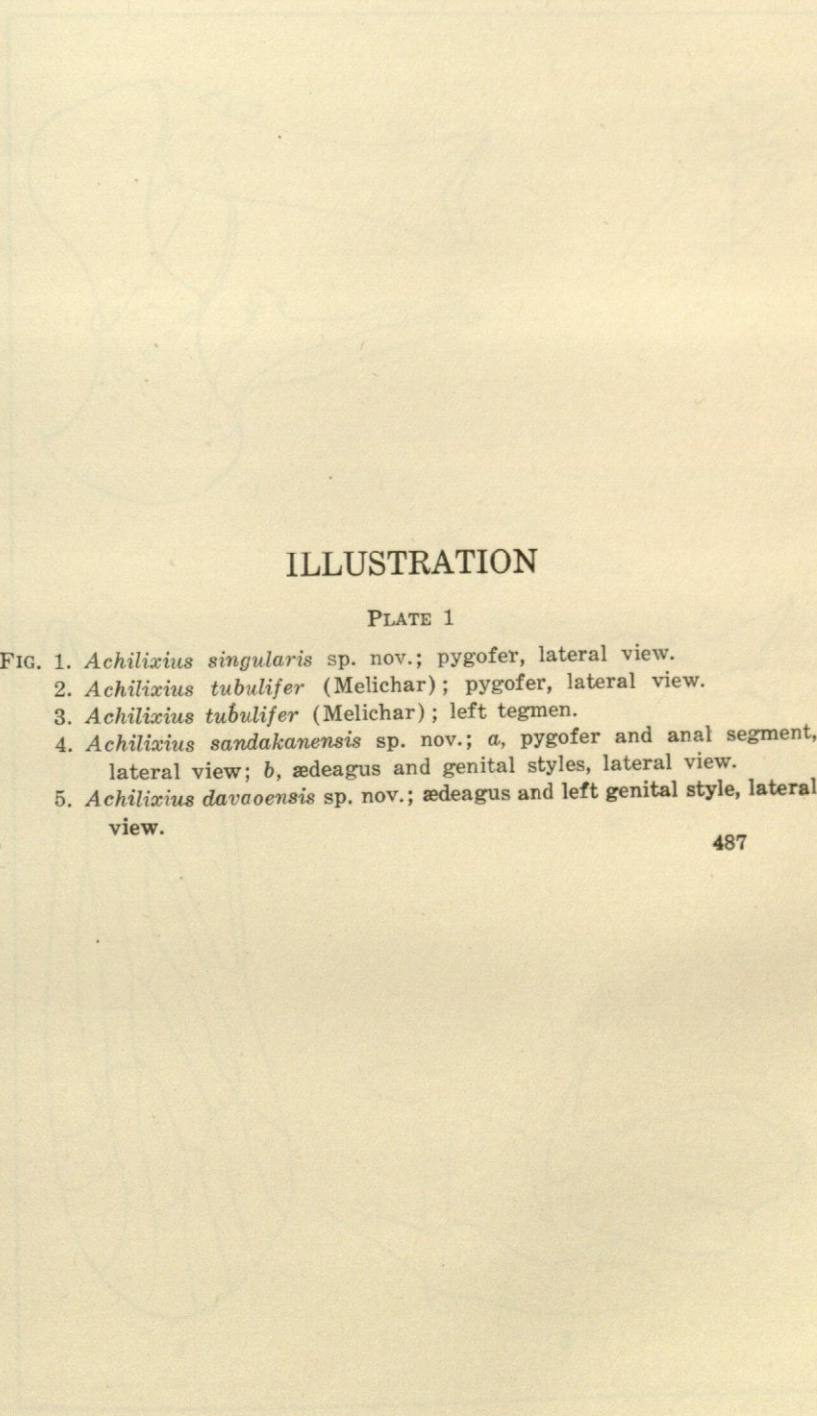
Achilixius davaoensis sp. nov. Plate 1, fig. 5.

Male.—Length, 2.3 millimeters; tegmen, 3.5. In coloration similar to *A. singularis*, but the light color at apex of veins not so distinct.

Pygofer much longer ventrally than dorsally, margin entire, ventral edge straight, not produced. Anal segment fairly large, longer than broad; apex rounded, with a minute emargination in middle. Genital styles flat, width subequal to apex which is rounded; on the dorsal margin near apex there is a small, flattened, slightly curved, pointed projection. Crossbar nearer the anal segment than in *A. singularis*. Ædeagus formed of a single plate, or keel, on ventral half and of two rounded flanges on dorsal half, in profile the dorsal flanges project slightly beyond apex and are rounded in outline, the ventral edge nearly straight to apex which is curved, the base projects dorsad and laterad where it is attached to the crossbar; the orifice appears to be on the dorsal aspect between the flanges.

MINDANAO, Davao (*Baker*), 2 males and 2 females. Type No. 1047.

The types have been deposited in the collection of the Hawaiian Sugar Planters' Experiment Station and bear their type numbers; paratypes are retained in the Baker collection.



ILLUSTRATION

PLATE 1

- FIG. 1. *Achilixius singularis* sp. nov.; pygofer, lateral view.
2. *Achilixius tubulifer* (Melichar); pygofer, lateral view.
3. *Achilixius tubulifer* (Melichar); left tegmen.
4. *Achilixius sandakanensis* sp. nov.; *a*, pygofer and anal segment, lateral view; *b*, ædeagus and genital styles, lateral view.
5. *Achilixius davaoensis* sp. nov.; ædeagus and left genital style, lateral view.

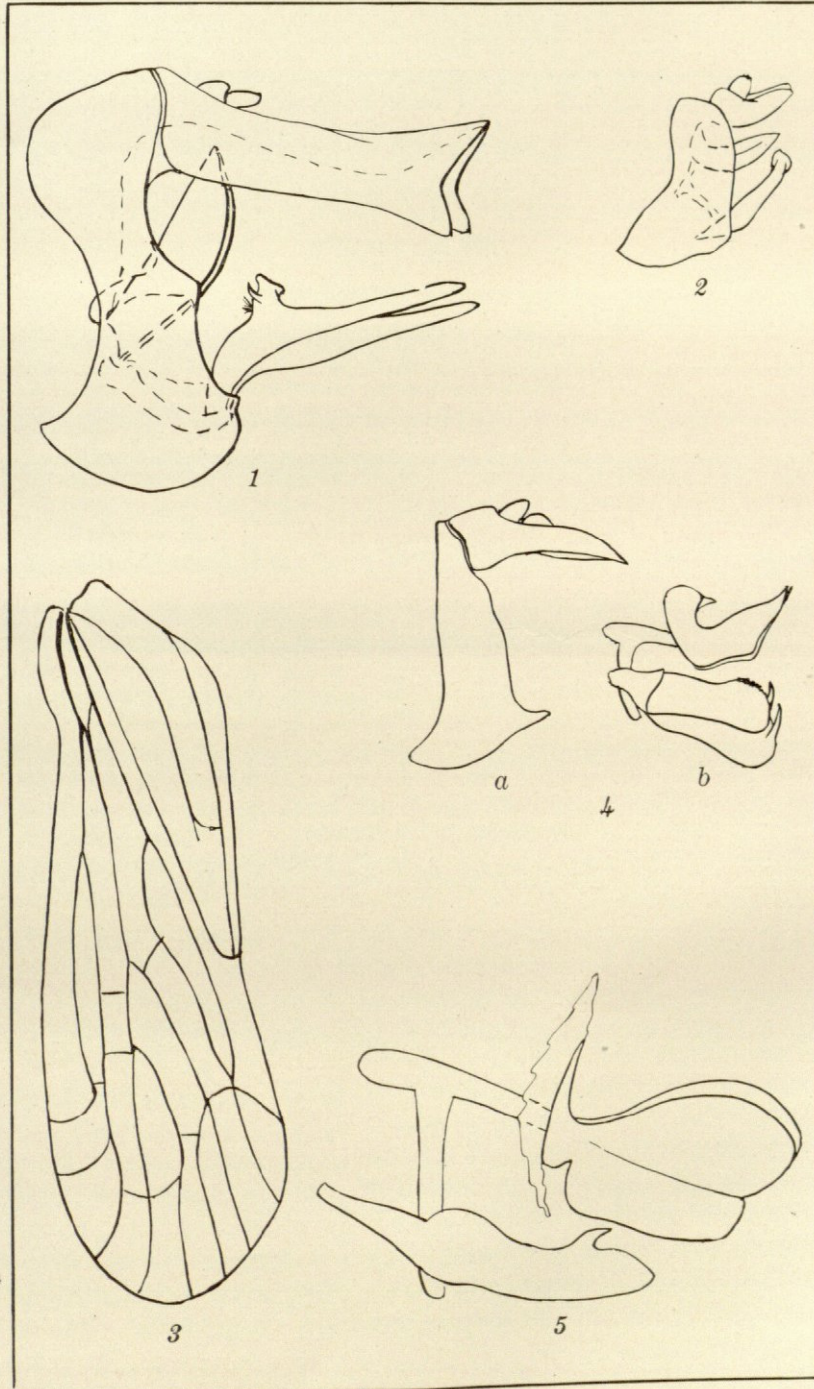


PLATE 1.