

**The male genitalia of *Phalix titan* Fennah
(Homoptera : Tettigometridae)**

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SYNOPSIS

The male genitalia of *Phalix titan* Fennah, a species originally based on a single female, are described, and the variations in colour and size are briefly discussed from new material from Uganda. A new subfamily of Tettigometridae, Phalixinae, is proposed to include this species.

THE description of *Phalix* (Fennah, 1952), with *P. titan* Fennah as type species, was based on a single female specimen. In the absence of a male, the species, and thereby the genus, was provisionally referred to the subfamily Tettigometrinae. Recently, Mr. A. J. P. Goodchild of Makerere College, Uganda, kindly sent me a large series of males and females of *Phalix titan*. The insects were reported to infest an isolated group of *Acacia decurrens* var. *mollis* (Black Wattle), grown as ornamental trees in Kampala, Uganda. A study of the male and female genitalia was made, and the results are presented here. As the specimens exhibit a great variety of colour and size, it is thought advisable to give a description of these characters as well.

Phalix titan Fennah

Colour.—The holotype (female) of the species is a bright yellowish-green specimen and represents an individual or seasonal variation not encountered in the present series of about 100 males and females which, nevertheless, show a general colour variation from dull green to reddish-piceous to brownish-red. The variation is similar to that shown by many other species of Tettigometridae, particularly in the genus *Hilda*. Thus the general ground colour of the tegmen varies from bright yellowish-green with green veins to greenish-red (the punctures being green on the reddish surface, in this case) or is completely red with two broad wavy brown bands (the anterior one passing through the middle of the clavus and reaching the costal margin of the corium, and the posterior passing through the apical area of the corium), with some veins concolourous with the surface and others having only a greenish tinge; the anal area, the posterior half of the base of the wings and the veins are piceous. The head, pronotum and mesonotum vary from bright green to deep green or brown; the one median and two sub-lateral broken whitish lines running percurrently on the vertex, pronotum and mesonotum, which are scarcely visible in bright green specimens, show more prominently in specimens of darker hue. The abdomen above is uniformly deep red or red with piceous areas, the ventral surface being yellowish-green.

Size.—As does the colour, so also does the size vary a great deal. The largest female (larger than the holotype female) is 9 mm. long from the apex of the vertex to the tip of the abdomen, the tegmen being 7.7 mm. long; the smallest is 7 mm. long, with the tegmen 6.7 mm. long. The largest male is 7.7 mm. long, with tegmen 7.2 mm. long and the smallest 6.4 mm. long, with tegmen 5.9 mm. long.

The male genitalia and the anal segment.—The pygofer is well-developed, with a basal sclerotised ridge, lateral walls and a sub-genital plate. The latter is triangular in outline and forms the floor of the pygofer. To the floor of the sub-genital plate

near its anterior margin is hinged, by a membrane that covers the surface of the floor, the rod-like stem of the basal plate (style connective (Muir, 1926)), which stands almost at right angles. The upper part of the basal plate is saddle-shaped, with a deep rectangular emargination separating anteriorly the two anterior lobes, and a deep excavation in the middle on the ventral side leaving the posterior half as a submembranous flap; the anterior lobes articulate with the posterior margin of the basal frame of the aedeagus. The aedeagus is well sclerotised, rod-like, curved slightly upward and pointed; it has a rectangular basal frame and two thin lateral basal flaps. The genital styles are well-developed, rod-like and curved at apex;

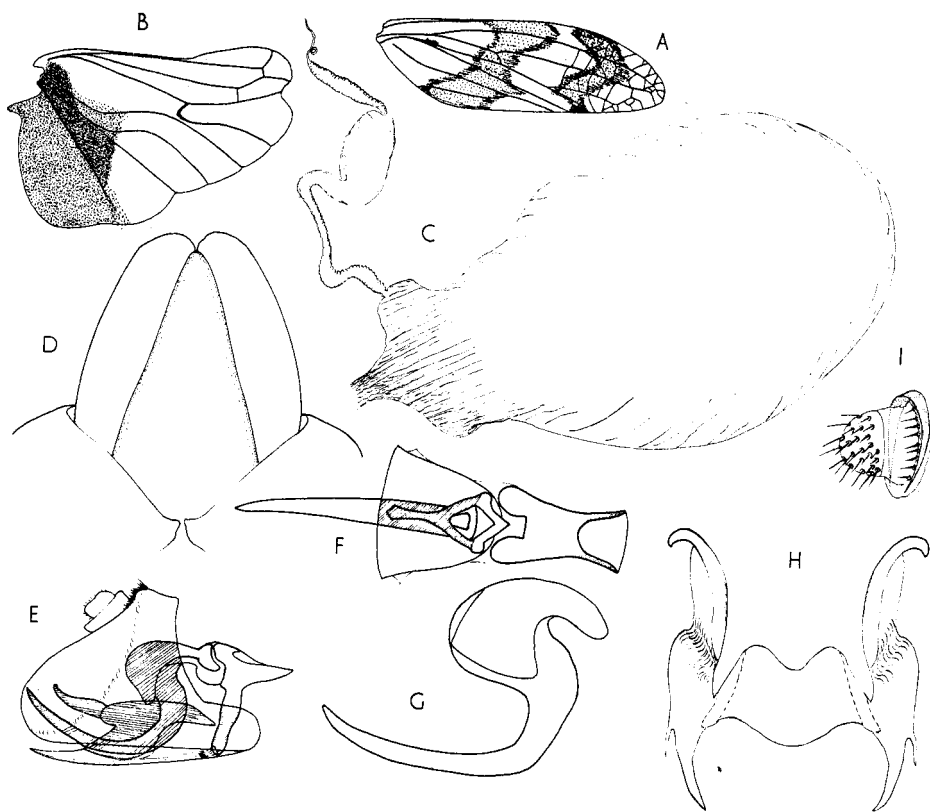


FIG. 1.—*Phalix titan* Fennah: (A) tegmen of female; (B) wing of female; (C) bursa copulatrix and spermatheca, drawn from unmounted material and hence slightly different from those drawn by Fennah (1952); (D) ventral view of pygofer; (E) lateral "transparent" view of pygofer, showing internal structures; (F) dorsal view of basal plate and aedeagus; (G) lateral view of aedeagus; (H) dorsal view of styles with median membrane; (I) ultimate segments of abdomen of male, showing ring-like anal segment.

they are separated by a strong and broad membrane, which is broadly bilobate posteriorly and convex anteriorly. The styles are also joined to the floor of the subgenital plate by the median membrane attached just in front of the basal plate, as well as being attached to the latter. There is a dense growth of setae on the dorsal hind margin of the pygofer, most probably meant for holding the sugary excretion of the insect. Unlike all other Tettigometrids, the anal segment of *Phalix titan* is short and ring-like, almost like a horse-shoe.

It will be seen from the above that, according to the male genital structures, *Phalix titan* does not fit in the key to the subfamilies of Tettigometridae given by Fennah (1952). The genital styles, with connecting membrane broad and bilobate

posteriorly, are like those of Egropinae, whereas the frons not being umbonate can be classified with Tettigometrinae. Since, as already pointed out by Fennah, it is unlike all the other genera in the family in the shape of the head, *Phalix* cannot be ascribed to any existing subfamily of Tettigometridae. Hence a new subfamily, **Phalixinae**, is proposed here for the reception of *Phalix titan* Fennah. The revised key to the subfamilies of Tettigometridae, based on the original one by Fennah (1952), is as follows:—

Key to the Subfamilies of Tettigometridae

- 1 (2) Vertex produced to extend in a cornice over base of frons; genital styles of male fused to form a sclerotised elongate boat-shaped plate with a broad lobe on each side dorsally, near base HILDINAE
- 2 (1) Vertex short or produced, rarely forming a strongly-projecting cornice above frons 3
- 3 (4) Head with eyes wider than pronotum; genital styles with connecting membrane broad, not sclerotised, bilobate on hind margin . . . PHALIXINAE
- 4 (3) Head with eyes narrower than pronotum; genital styles with connecting membrane wide or narrow 5
- 5 (6) Frons in adult distinctly umbonate in middle near frontoclypeal suture or strongly medially carinate, a long upwardly-curved spine in this position in nymph; genital styles with connecting membrane broad, bilobate or convex on hind margin EGROPINAE
- 6 (5) Frons not umbonate or extremely feebly so; head of nymph without a long upcurved medio-frontal spine; genital styles with connecting membrane very delicate, narrow, straight or concave on hind margin
TETTIGOMETRINAE

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