

**Synonymic and taxonomic notes on *Acridoidea*
(Orthoptera)**

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EUMASTACIDAE

***Penichrotes carinicus* Schulthess 1909.**

1909. *Penichrotes carinicus* Schulthess, Mitt. Schweiz. ent. Ges., 12 (1):
9, 2 figs.

The species was described from four female specimens with the same label "Shilouvane, N. Transvaal"; one of them is here designated as the type. Two of the paratypes and the type are in the Entomological Institute, Zurich; one paratype in the British Museum (Natural History).

***Schulthessiella minuta* (Schulthess 1909).**

1909. *Parathericles minutus* Schulthess, Mitt. schweiz. ent. Ges., 12 (1):
9, 2 figs.

One of the five female specimens, all with the label "Shilouvane, N. Transvaal" is designated here as the type. Three paratypes and the type are preserved in the Entomological Institute, Zurich; one paratype is in the British Museum (Natural History).

PYRGOMORPHIDAE

***Pyrgomorphella sphenarioides* I. Bolívar 1904.**

1904. *Pyrgomorphella sphenarioides* I. Bolívar, Bol. Soc. esp. Hist. Nat.,
4: 457, 458.

The species was described on the basis of several male and female specimens in the Museum National d'Histoire Naturelle, Paris, la-

belled "Abissinia". Kevan (Publ. Cult. d. Comp. d. Diamant. d. Angola, n.º 29: 131, 1956) designated one of the females as the type, and reproduced its photograph. Here the male paratype of the species is figured (figs. 1-5).

ACRIDIDAE

Gemeneta Karsch 1892.

1892. *Gemeneta* Karsch, Berl. ent. Z., 37 (1): 71.

1905. *Escalera* I. Bolívar, Mem. Soc. esp. Hist. Nat., 1 (13): 231
(*Syn. nov.*).

The single female type of the only species of the genus *Escalera* preserved in the Instituto Español de Entomología, Madrid, was studied by me and in my view it belongs to the genus *Gemeneta*.

Gemeneta opilionoides (I. Bolívar 1905) Comb. nov.

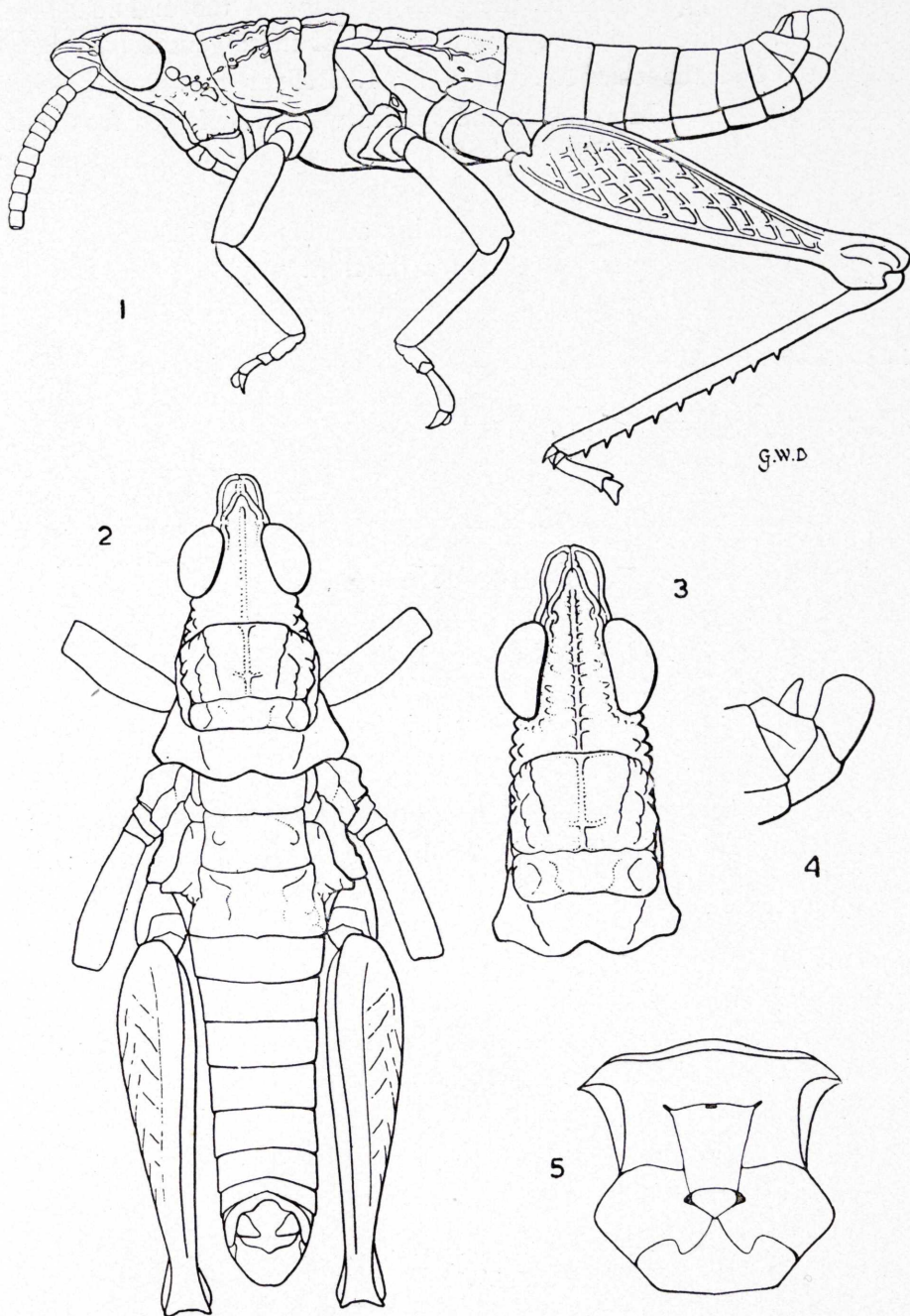
1905. *Escalera opilionoides* I. Bolívar, l. c.: 232. Type ♀. «Spanish Guinea, Biafra». Instituto Español de Entomología, Madrid.

1956. *Gemeneta rostratuberculata* Kevan, Bull. de l'I. F. A. N., 18: 965, f. 3. Type ♂. «French Cameroons, Reserve Forestière du Nyong». Copenhagen Museum (*Syn. nov.*).

The type of *Escalera opilionoides* and a female paratype of *Gemeneta rostratuberculata*, which is preserved in the British Museum (Natural History), were compared and found identical.

Aulacobothrus group.

The three genera of this group: *Aulacobothrus* I. Bolívar 1902, *Dnopherula* Karsch 1896 and *Berengueria* I. Bolívar 1902, represent an extremely confused complex. I. Bolívar (1914, Trab. Mus. Nac. Cienc. Nat., n.º 20) placed *Berengueria* and *Phoremula* (later synonymised with *Aulacobothrus*) into his section *Prostethophymae* because of the different length of the spurs of the hind tibia, while *Aulacobothrus* was referred to the section *Arcypterae* on the basis of shape of discoidal and ulnar area of elytron; genus *Ticra* I. Bolívar 1909 (synonymised with *Dnopherula* by Uvarov 1953) I. Bolívar placed



Figs. 1-5.—*Pyrgomorphella sphenarioides* I. Bolívar ♂, paratype: 1, lateral view; 2, ditto, from above; 3, head and pronotum, from above; 4, end of abdomen, lateral view; 5, meso- and metasternum.

into the section *Pnorisae* on the basis of shape of the discoidal area of elytron. Since then, many more species of these genera have been described, and the characters used by I. Bolívar to separate them became confused. Moreover some species were transferred from one genus to another (see Johnston's Catalogue of African Grasshoppers, Cambridge, 1956).

An attempt is made below, by using another combination of characters, to arrange these genera in a different way.

The three genera might be differentiated by the following key:

- 1 (2) Antenna compressed and noticeably widened in basal half (Asia)
 *Aulacobothrus* I. Bolívar.
 2 (1) Antenna filiform.
 3 (4) Fastigial foveolae deep, smooth with distinct edges (Africa)
 *Phorenula* I. Bolívar.
 4 (3) Fastigial foveolae shallow, almost flat, rugulose, with indistinct edges
 (Africa) *Dnopherula* Karsch.

Aulacobothrus I. Bolívar 1902.

Type-species: *Aulacobothrus strictus* I. Bolívar 1902. Type-locality: Kodai-kanal, India.

Study of the type-species of the genus showed that its antenna is not filiform as described, but in the basal half compressed and noticeable widened. This character separates *strictus* from other known Indian and African species of the genus, which all possess filiform antennae.

I abstain from discussing the status of the Indian species with the filiform antennae, but the African ones I regard as a genus distinct from *Aulacobothrus*, for which the name *Phorenula* I. Bolívar 1909 is available (for the history of these names see Johnston's Catalogue of African Grasshoppers, Cambridge, 1956).

Phorenula I. Bolívar 1909.

Type-species: *Phorenula dorsata* I. Bolívar 1912. Type-locality: Mpika, N. Rhodesia.

In 1926 Uvarov synonymised genus *Phorenula* with genus *Aulacobothrus* because, in his view, *Phorenula dorsata*, the type-species of

the genus had no generic differences from the African representatives of the genus *Aulacobothrus* but he overlooked the difference in the antennae as indicated above.

On the basis of the differences mentioned in the key (see above) the following species examined should be referred to the genus *Phorenula* now (the generic names are quoted as in the original descriptions, and the history of every name can be found in Johnston's Catalogue).

1. *Phorenula dorsata* I. Bolívar 1912. The species was described on the basis of several male and female specimens from different localities. Here I am designating the male specimen from Mpika, N. Rhodesia as the type.
2. *Phorenula vittata* Uvarov 1921.
3. *Phorenula marshalli* Uvarov 1921.
4. *Phorenula rugulosa* Uvarov 1925.
5. *Phorenula aethiopica* I. Bolívar 1922.
6. *Phorenula cruciata* I. Bolívar 1912.
7. *Phorenula gracilis* Uvarov 1921.
8. *Aulacobothrus punctatus* Uvarov 1926 = *Phorenula punctata* (Uvarov 1926). *Comb. nov.*
9. *Aulacobothrus africanus* Uvarov 1921 = *Phorenula africana* (Uvarov 1921). *Comb. nov.*
10. *Aulacobothrus crassipes* Uvarov 1921 = *Phorenula crassipes* (Uvarov 1921).
11. *Aulacobothrus subsinuatus* Miller 1929 = *Phorenula subsinuata* (Miller 1929). *Comb. nov.*
12. *Aulacobothrus emalicus* Uvarov 1941 = *Phorenula emalica* (Uvarov 1941). *Comb. nov.*
13. *Aulacobothrus richardsi* Uvarov 1953 = *Phorenula richardsi* (Uvarov 1953). *Comb. nov.*
14. *Aulacobothrus rhodesianus* Uvarov 1953 = *Phorenula rhodesiana* (Uvarov 1953). *Comb. nov.*
15. *Pnorisa invenusta* Karsch 1893 = *Phorenula invenusta* (Karsch 1893). *Comb. nov.*
16. *Pnorisa bifoveolata* Karsch 1893 = *Phorenula bifoveolata* (Karsch 1893). *Comb. nov.*
17. *Stauroderus wernerianus* Karny 1907 = *Phorenula werneriana* (Karny 1907). *Comb. nov.*
18. *Berengueria obliquifrons* I. Bolívar 1912 = *Phorenula obliqui-*

- frons* (I. Bolívar 1912). *Comb. nov.* The species was described on the basis of male and female, both from Kambove, Belgian Congo, but different years of collecting. Here the male is designated as the type.
19. *Dnopherula plagiata* Uvarov 1953 = *Phorenula plagiata* (Uvarov 1953). *Comb. nov.*

Dnopherula Karsch 1896.

1896. *Dnopherula* Karsch, Stett. Ent. Zeit.: 259.
 1909. *Ticra* I. Bolívar. Bol. Soc. esp. Hist. Nat., 9: 294.
 1909. *Berengueria* I. Bolívar, l. c.: 356 (*Syn. n.*).
 Type-species: *Dnopherula callosa* Karsch 1896. Type-locality: Milanji, Nyasaland.

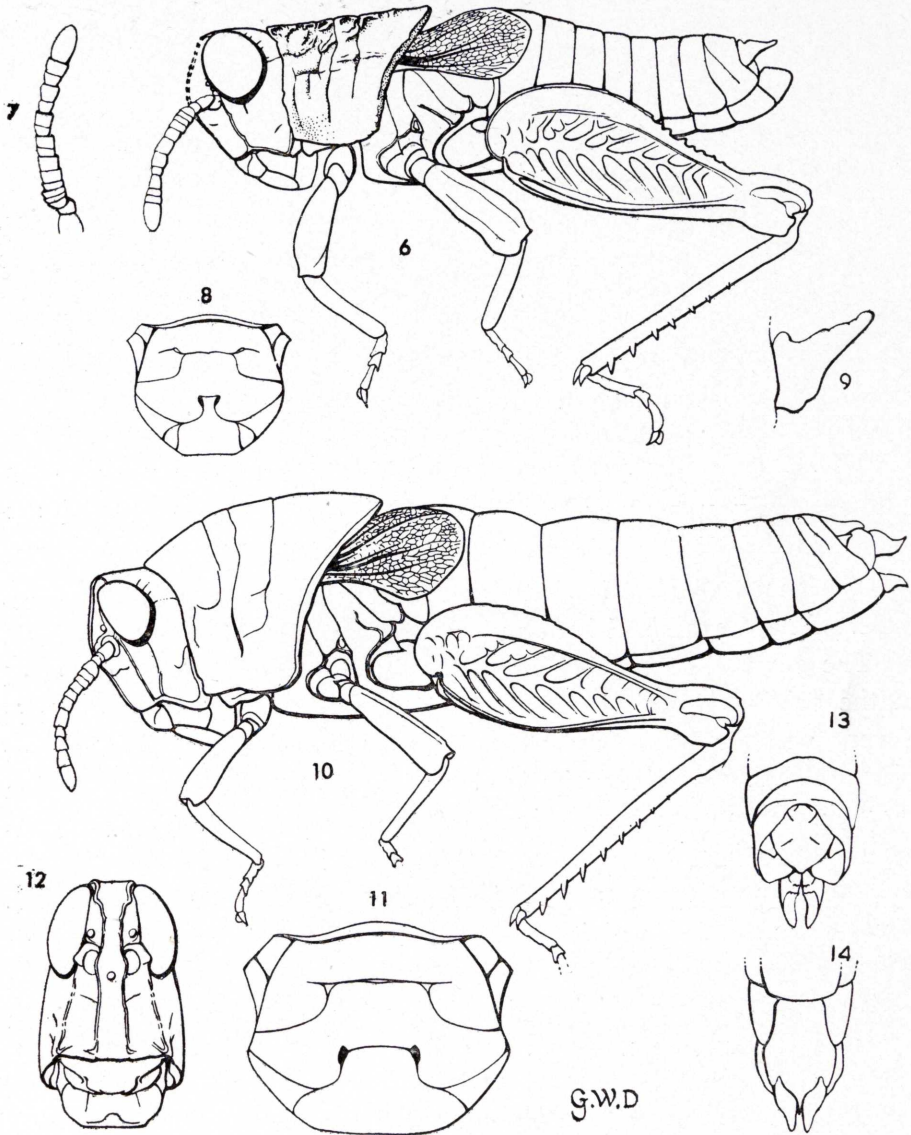
The main difference of *Dnopherula* from *Phorenula* is the shape of fastigial foveolae (see key above). The genera are very closely allied and other characters are of specific value only. Uvarov in 1953 also considered the genus as "extremely allied to *Aulacobothrus* and the main difference consists in the more thick-set habitus of *Dnopherula*, which finds its expression in the very strongly transverse mesosternal lobes, even in the male sex".

A study of all available species of the genus *Phorenula* and *Dnopherula* proved that this character cannot be regarded as a generic one, since it is present in the type-species of the genus *Phorenula* (*Ph. dorsata* I. Bol.) and all studied species.

The genus *Ticra* I. Bolívar 1909 was synonymised with *Dnopherula* by Uvarov (1953), who found the type-species of both genera conspecific.

I. Bolívar first mentioned the genus *Berengueria* in his key (1909), where he placed it next to *Phorenula* differentiating them by the slope of the frons. Uvarov (1953) still retained the genus *Berengueria* on the same basis and on the basis of the shape of lateral carinulae of vertex, but remarked that *Berengueria* "is closely allied to *Aulacobothrus* on one side, and to *Dnopherula* on the other". Comparing now all known species of *Berengueria* and *Dnopherula*, including the types of the type-species of both genera, it was found that the species of these two genera share all characters which were regarded as generic ones. Both of them possess very shallow, rugulose fastigial foveolae located in the same position. The frontal ridge in *Berengue-*

ria rotundifrons is only slightly broader and less narrowed towards apex than in other species of *Dnopherula*, so that it is not possible to regard it as a generic character. Less developed and shorter lateral carinulae of vertex and sometimes indistinct median carinula



Figs. 6-14.—*Pamphagella comoroensis* Brunner, ♂ type, ♀ paratype: 6, male, lateral view (head, dotted line, broken); 7, male, antenna; 8, male, meso- and metasternum; 9, male, left cercus; 10, female, lateral view; 11, female, meso- and metasternum; 12, face, female; 13, end of abdomen from above, female; 14, ditto, from below.

are also such slight characters that they may be regarded only as specific ones.

The following species are now regarded as belonging to this genus (the generic names are quoted as in the original descriptions).

1. *Dnopherula callosa* Karsch 1896.
2. *Dnopherula citrina* Miller 1932.
3. *Dnopherula marshalli* Miller 1932.
4. *Dnopherula crucigera* Uvarov 1953.
5. *Berengueria rotundifrons* I. Bolívar 1912 = *Dnopherula rotundifrons* (I. Bolívar 1912). *Comb. nov.* The species was described on the basis of male and female from two localities. Here, the male specimen from Kalumba, Belgian Congo is designated as the type.

***Pamphagella comoroensis* Bruner 1910.**

1910. *Pamphagella comoroensis* Bruner, Veltzkow Reise, Stuttgart, 2: 629, f. 8. Type ♂. «Anjouan, Comoren, Circle de Bombao, 500 m.» Zoologisches Museum der Universität, Berlin.

The genus and species were described from one male and one female. I have examined both and I designate the male as the type.

The genus does not belong to the family *Pamphagidae*, as stated in the original description, but to *Catantopinae* of *Acrididae*. It is a very peculiar genus, remotely related to the genus *Parepistaurus* Karsch 1896. To clarify its interrelation with this and other genera it would be necessary to study its phallic complex, which I was unable to do owing to the poor preservation of the specimen.

The shape of pronotum in the male and the female are very different (Figs. 6, 10) and it is not ruled out that they may belong to different species.

The figure in the original description is very inaccurate and both sexes are figured here.