

South African Psyllids.

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Arytaina acaciae-baileyanae (Froggatt).

Psylla acaciae-baileyanae Froggatt.

(Plate I. Figures 1a-1g, 2, 3, 4, 5.)

Male, length of body 1.16 to 1.35 mm.; female, 1.34 to 1.55 mm. Male, forewings 1.17 to 1.24 mm. long, .48 to .5 mm. wide; female, 1.3 to 1.6 mm. long, .52 to .64 mm. wide. Male, width of head plus eyes .34 mm., minus eyes .22 mm.; female, width of head plus eyes .37 mm., minus eyes .23 mm. Female, length of head from posterior margin of vertex to tip of genal cones .19 mm.; male, .18 mm. General colour (specimens just captured) somewhat obscured by a mealy white pulverulence more or less covering the whole insect, except the eyes and wings. The colour markings of specimens in alcohol are as follows:—Head and thorax yellowish brown; posterior margin of vertex black, with a dark brown fovea in the centre of each side of the middle line; sutures of head and thorax dark brown to black; clypeus generally mostly dark brown; terminal segment of labrum black; basal half to two-thirds of the antennae yellowish brown, the other third brown, becoming black at the tip; eyes dark reddish brown. Thorax laterally and ventrally with irregular, rather indistinct, dark brown areas, more pronounced in the metathorax; pronotum generally shaded dark brown, especially on the sides. Abdomen sea-green or very pale yellow, each of the five first segments having dorsad a broad more or less distinct dark brown, transverse broad band, in the centre of which, running parallel with each band, is a very narrow black line; each of the first four or five segments ventrad have two large more or less distinct dark brown areas, one on each side of the middle line, often more distinct and connecting with each other to form a continuous band in the first segment, more rarely connected in the others; along the middle line laterad are three or four smaller dark brown areas, one in each of the first three or four segments, contiguous with or surrounding a spiracle, on each side of the abdomen; genitalia pale yellow, shaded dark brown at the base and tip. Legs pale yellow, terminal segments of tarsi black. Wings maculated.

Head, including eyes, as wide as the thorax, deflexed, pulverulent; vertex flat, punctate, glabrous, large, broader than long, with a fovea on each side of the middle line, in each of which is a small circular dark brown sunken spot, with a more minute dark spot posterior to each of these and farther out from the middle line; ocellar regions slightly elevated; genal cones short, broad, rounded at apex, hardly, but very nearly contiguous at base, but apparently so in pinned specimens on account of the pulverulence, much more deflexed than vertex, practically vertical, with short pubescence,

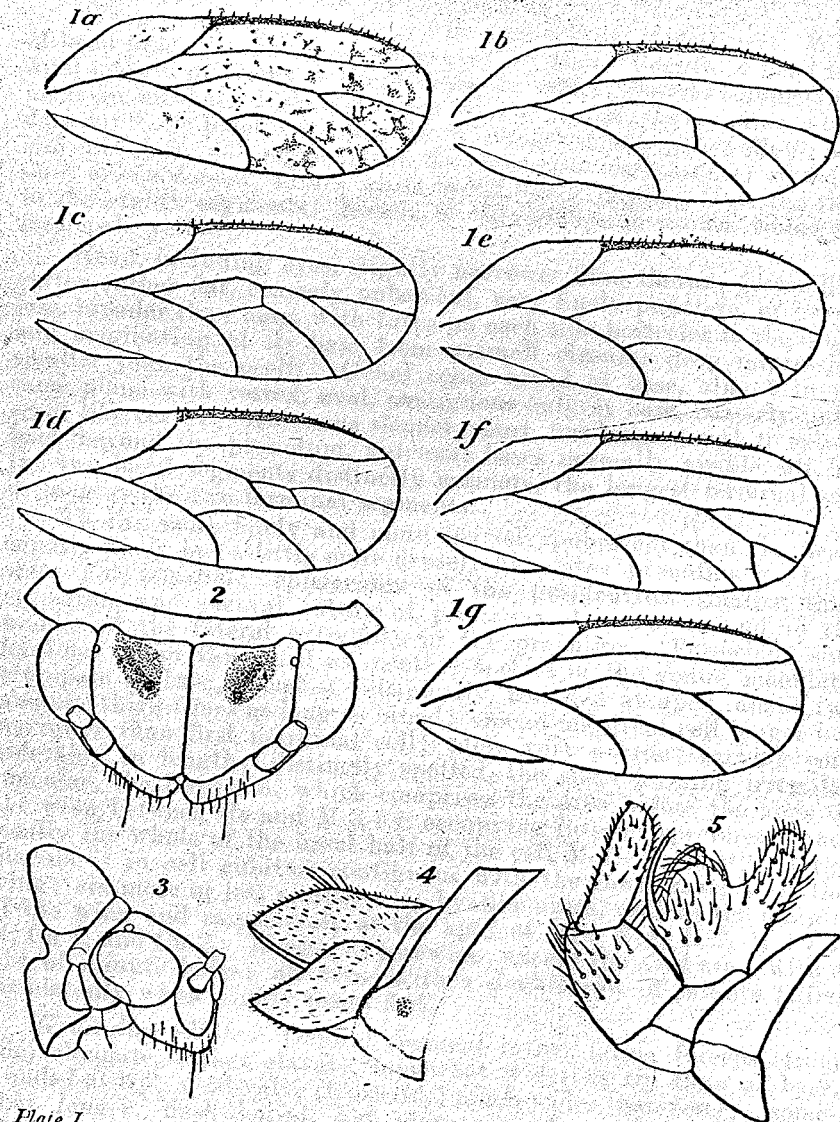


Plate I.

punctate, each gena having one or two long setae near the apex, on the under side; clypeus large. Antennae .55 to .6 mm. long, a little less than twice the width of the head plus eyes, and not long enough to extend back to the hind margin of the thorax, distinctly carinate except the two basal segments; terminal segments no wider than the preceding; terminal setae subequal in length, both acutely pointed, the longest no longer than or not quite as long as the terminal segment.

Thorax large, broad, rather strongly arched, often pulverulent, glabrous; pronotum long (transversely), narrow longitudinally and rather flat; propleurites short; praescutum rather short transversely. Hind tibiae with no basal spur. Forewings relatively small, slightly more than twice as long as broad, broadly rounded at apex, subhyaline, maculated, with very few or no very small maculae in the basal third, small irregular maculae in the middle third, and larger irregular ones in the apical third of the forewings, the maculae varying in intensity in different individuals, occasionally but rarely wanting; normal venation as in fig. 1 a, but either the right or left wing of either sex occasionally varying as in figs. 1 b, c, d, e, f, g (eight specimens of seventy examined had these variations); pterostigma long, a little wider at base, with about twenty minute hairs along the margin.

Genitalia.—Male: Genital segment relatively large, forceps (from side) of peculiar shape (see fig. 5), with a large, blunt, forward and upward curving spine-like posterior process, considerably wider than the anal valve at base.

Female: Genital segment of relatively medium size, rather short, acute at tip; dorsal plate equal in length with the ventral, having several setae before the apex longer than the others.

Described from ten males and ten females collected at Elsenburg, Cape Province, on *Acacia baileyana*, by the writer, 4th May, 1923. Specimens were also collected by Dr. S. H. Skaife on *Acacia* at Cedara, Natal. Paratypes in the writer's collection, Elsenburg.

Froggatt evidently does not give a detailed description of the adults of *Psylla acaciae-baileyanae*, as he makes no mention of the minute hairs on the pterostigma, the variation in wing venation, the one or two long setae on the genae, and the peculiar features of the male genitalia. The male genitalia of my specimens appear to be different from Froggatt's figure, but his illustration is not very detailed. But, since his descriptions of the egg, nymph stages, colour, and characters of the adult in practically all other respects appear to be identical with those found in my specimens, collected from the same species of tree, which presumably is indigenous to Australia or Tasmania, I assume that they belong to the same species. Froggatt states in the Proc. Linn. Soc., N.S.W., XXVIII, 1903, p. 315, "The Psyllids infesting Acacias seem to confine themselves to particular species and are constant in their habits." It has not yet been possible to obtain specimens from Australia to confirm this conclusion.

Since the genal cones are short and broadly rounded, and because the pleurites of the pronotum are sub-equal in length, with the pleural suture as in *Aphalara*, this species should be placed under the genus *Arytaina*, and not under *Psylla*.

Professor Crawford, of the University of Hawaii, kindly verified the classification of this species for me.

Euphalerus acokantherae (new species).

(Plate II. Figures 1, 2, 3, 4, 5.)

Wing (male) 2.5 mm. long, 1.05 mm. wide at widest part. Width of head plus eyes .55 mm., minus eyes .35 mm. Length of head from hind margin of vertex to tip of cones .35 mm. General colour (specimens in alcohol), light yellowish brown; genae pale yellow above, dark-brown to black ventrad; vertex and pronotum pale yellow; eyes and two terminal segments of the antennae dark-brown; abdomen dark brown dorsad, with a white broad line extending from the third to the eighth segments; femora of legs yellowish brown, tibiae and tarsi pale yellow.

Head, including eyes, slightly narrower than thorax, descending, vertex rather flat, coarsely pubescent, very finely punctate, or granulate, broader than long, with fovea on each side posterior to the centre and originating at its base from a small circular deep impression, smaller than the ocelli. Genal cones broad at base, almost in the same plane with vertex, oval, contiguous only at base, coarsely pubescent like vertex. Antennae slender, short, but long enough to extend back beyond the pronotum, antennal bases normally visible, all but the two basal segments distinctly carinate, the longest terminal seta as long as the two terminal segments.

Thorax more finely and more sparsely pubescent than the head, equally finely but a little more densely punctate; pronotum not long, sides not parallel; episternum of the propleurites smaller than epimeron, and pleural suture of prothorax does not extend to the middle of the lateral extremity of the pronotum. Forewings subhyaline, rather thickened as in other species of the genus, maculate, attenuate at base, broadest subapically, rounded at apex, about two and one-third times as long as broad; second marginal cell longer but narrower than first marginal cell; pterea very narrow, varying considerably in length; distinctly spotted, the spots forming irregular maculae, the largest of which comprises the area before the apex of the wing between Rs and M 3+4, occupying in some specimens practically the whole of the basal half of the cell M 1+2; another large macula is in cell cubitus, contiguous with the inner margin of the wing; six more or less semicircular hyaline areas, each at the margin of the wing and respectively at the apex of cells R 1, R 2, M 1+2, M, Cu 1, and Cu 2. Margin of forewing, except the anal area, with a row of minute hairs; all veins with a double row of minute hairs, visible only when highly magnified.

Genitalia.—*Male*: Genital segment rather large, forceps (from side) elongate, rather clavate, somewhat wider at tip than at base, rounded at tip; anal valve (from side) much wider than forceps, somewhat longer, flask-shaped, but more curved posteriorly, flat and attenuate at tip.

Female: Genital segment large, long, acute at tip, dorsal plate a little longer than the ventral.

Described from seventeen specimens (ten males and seven females) collected at Durban Botanic Gardens, Natal, on *Acokanthera venanata*, by C. P. van der Merwe, on 20th November, 1916.

This species is evidently closely related to *Euphalerus citri* (Kuwayama) (see Record Ind. Mus., Vol. VII, 1912, p. 424), but differs from it chiefly in the form of the genitalia, the coarseness of

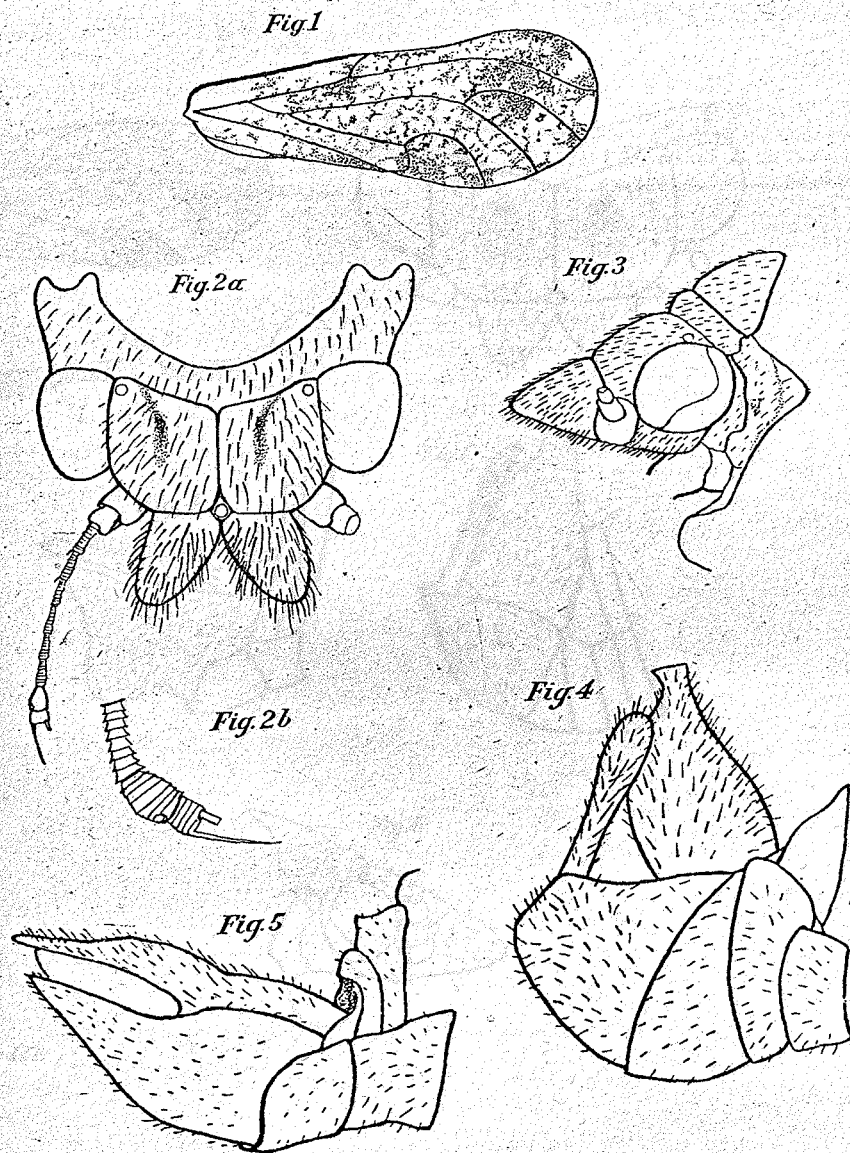


Plate II.

the pubescence of the head, the degree of contiguity of genal cones and their shape, and the arrangement of the maculae on the wings. It should be noted that the propleurites cannot be considered to be typical of the tribe Ayrtaini, to which the genus belongs, as the episternum is considerably narrower than the epimeron, and the pleural suture of the prothorax does not extend to the middle of the lateral extremity of the pronotum (see fig. 1 of this article and compare with Plate I, fig. i, Bull. 85, Smithsonian Institute, U.S. National Museum). Type and paratypes in writer's collection, Elsenburg, Cape Province.

Euphalerus natalensis (new species).

(Plate III. Figures 1, 2, 3, 4, 5, 6.)

Length of body, male 1.65, female 1.9 mm.; length of forewing, male 2.05, female 2.08-2.2 mm.; width of forewing at widest part, male .92, female .95-1 mm.; width of head .61 mm. General colour dark brown (colour markings not distinct because specimens have been in alcohol several years): head yellow, with dark brown foveae; thorax with four indistinct yellowish longitudinal lines on the scutum, praescutum and pronotum marked with pale yellow areas, dorsal sclerites of metathorax yellowish; abdomen dark brown above, yellowish with dark brown markings below; legs yellowish with black spines and claws; female genitalia yellowish, dark brown at tip; male genitalia mostly dark brown; antennae yellow, the two terminal segments dark brown; wings sub-opaque, with dense maculae.

Head moderately deflexed, not as broad as thorax, granulose; vertex flat, truncate in front, wider than long, coarsely pubescent, with a circular fovea on each side of the middle suture near the centre, posterior margin deeply arcuate, posterior ocellar areas not raised, area along middle line slightly raised. Genal cones short and broad, shorter than length of vertex, narrowly rounded at apex, contiguous at base, divergent, not depressed below plane of vertex, coarsely pubescent.

Thorax broad and deep, moderately arched, finely punctate, sparsely pubescent. Pronotum moderately long, flat on dorsal surface, propleurites fairly long and sub-equal. Hind tibiae with no tooth at base, with about eight stout, short spines at apex. Forewings sub-opaque, much maculated, the first marginal cell being almost completely covered with one large macula, maculae denser in apical region, veins with a double row of minute hairs; margin of wing with a row of hairs; first marginal cell broader and shorter than the second; no pterostigma in most specimens, and only a slight indication of one in a few; vein R 1 soon disappearing a very short distance after it turns near the costa. Antennae very short and rather stout, not longer than width of head, including eyes; third segment much longer than the others, which are short and sub-equal in length, fifth and seventh segments narrower than the others, the ninth and tenth segments wider than those preceding, the tenth with two terminal spines, the one stouter and shorter than the other, and no longer than the tenth segment. Eyes of medium size, somewhat recessive. Abdomen small.

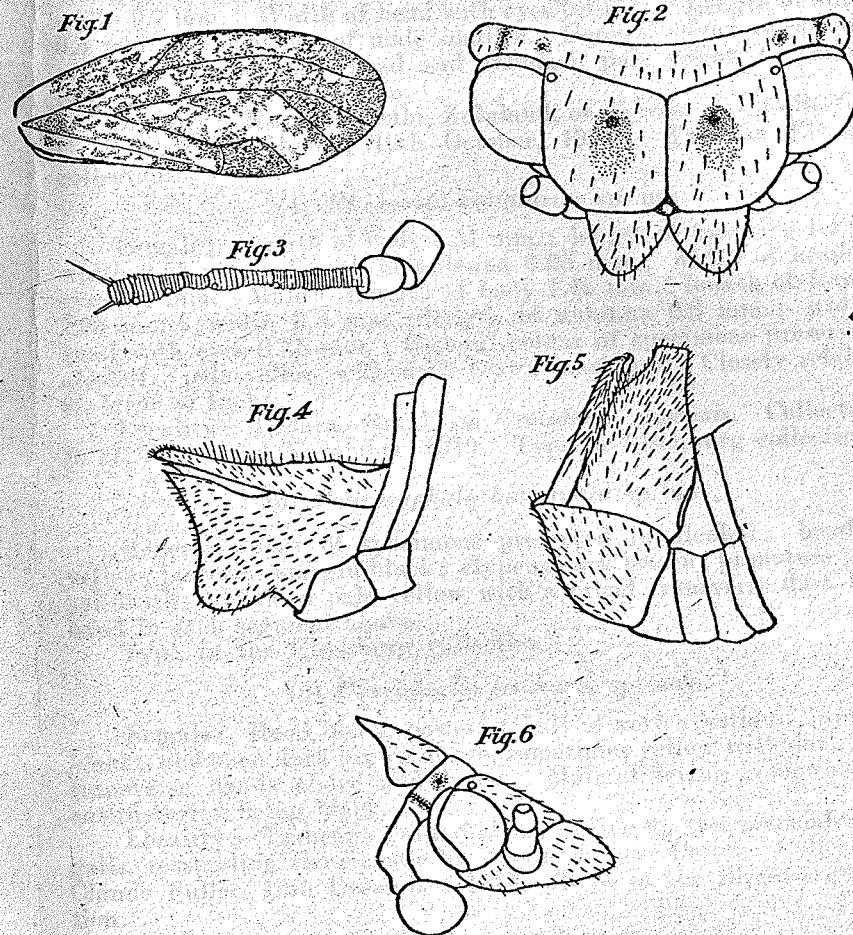


Plate III.

Genitalia.—*Male*: Genital segment relatively large; forceps long, slender, with sides parallel, rounded and narrower at tip, with numerous hairs as long as the width of the forceps when viewed from the side; anal valve a little longer than forceps, stouter, sides not parallel, narrower and truncate at tip, covered with short hairs.

Female: Genital segment short, thick, pubescent; dorsal valve longer than the ventral, rounded at apex, with several somewhat longer hairs before the apex; ventral valve acute at apex, with a prominent, stout, projecting downward protuberance, rounded at its apex.

Described from four males and four females collected on *Rhus excisa* Thunb., at New Hanover, Natal, by C. B. Hardenburg, 28th May, 1916. Specimens also collected by C. P. van der Merwe in Natal, April, 1917.

This species is very similar to *Gonanoplicus guttulatus* End., especially in respect to wing venation and arrangement of maculae, but the anal valve of the male genitalia differs in shape from Enderlein's illustration of his species.

Euphalerus natalensis would be placed in the genus *Gonanoplicus* End., if the latter were considered valid. After consultation with Prof. Crawford, the writer agrees with him that Enderlein's *Gonanoplicus guttulatus* is quite similar to *Euphalerus citri*, is related to other species of *Euphalerus*, and it agrees in generic characters with Schwarz' description of this genus. [Compare the description of the genus *Euphalerus* Schwarz, *Philippine Journ. Sci.* XV, No. 2, Aug., 1919, p. 169, with the description of the genus *Gonanoplicus* End., *Wissench. Erg. der Schwedischen Zoöl. Exped. nach dem Kilimandjaro, dem Meru, 1905-1906, Hemiptera*, p. 143, and see *Euphalerus citri* (Kuwayama), *Records of Indian Museum VII, Pt. V, No. 34, Dec., 1912, p. 424.*]

ADDENDA.

At a later date descriptions and illustrations of the following new species will be published, together with a reclassification of *Rhinocola eucalypti* Maskell, which now falls to the genus *Eurhinocola*:—

- (1) *Arytaina mopanei* sp. nov.
(2) *Euphalerus punctulatus* sp. nov.

Female: Length of body 3.7 mm.; length of forewing 3.16 mm.; width 1.36 mm. *Male*: Length of body 3.6 mm.; length of forewing 2.6 mm.; width 1.05 mm. Width of head with eyes: female 0.95 mm.; male 0.88 mm. General colour of most specimens preserved in alcohol: pale yellow.

Locality: Messina, near Limpopo River, Transvaal, very abundant on mopane trees. Collected by Claude Fuller, 25th November, 1916. Types in Elsenburg collection.

- (2) *Euphalerus punctulatus* sp. nov.

Female: Length of body 3.4 mm.; length of forewing 2.5 mm.; width 1.1 mm. Width of head with eyes .65 mm.; length of antenna 0.48 mm. General colour of specimens preserved in alcohol: thorax reddish brown, head and abdomen yellow; body with a white mealy secretion.

Locality: Durban, Natal, on *Sclerocarya caffra*. Collected by C. P. van der Merwe, 24th October, 1922. Type in Elsenburg collection. (This species has also been found on *Chorda caffra* and *Clausena maequalis*.)

- (3) *Euphalerus carissae* sp. nov.

Female: Length of body 1.35 mm.; length of forewing 1.65 mm.; width 0.7 mm. Width of head with eyes 0.4 mm. Length of antenna 0.4 mm. Dimensions of male smaller. General colour of specimens preserved in alcohol: head and abdomen pale yellow to yellowish brown, thorax darker brown.

Locality: Kwambonambi, Zululand, on *Carissa* sp. Collected by C. P. van der Merwe, 10th October, 1922. Type in Elsenburg collection.

- (4) *Rhinocola crotalariae* sp. nov.

Female: Length of body 1.51 mm.; length of forewing 1.4 mm.; width 0.55 mm.; length of antenna 0.65 mm.; width of head with eyes 0.4 mm. *Male*: Length of body 1.45 mm.; length of forewing 1.25 mm.; width 0.5 mm.; length of antenna 0.6 mm.; width of head with eyes 0.35 mm. General colour of specimens preserved in alcohol: pale yellow with dark brown markings. Closely related to *R. targioni* Licht.

Locality: Cedara, Natal, on *Crotalaria capensis*. Collected by S. H. Skaife, 1st November, 1919. Type in Elsenburg collection.

- (5) *Paurocephala bicarinata* sp. nov.

General colour of specimens preserved in alcohol: head pale yellow, posterior margin black; clypeus dark brown; pronotum pallid, yellowish; abdomen pale yellow with a broad transverse dark brown band in each segment above.

Type in the Elsenburg collection.

- (6) *Pauropsylla trichaeta* sp. nov.

Female: Head black, posterior half of vertex yellow; pronotum black; abdomen dark brown above, sometimes yellow with dark brown transverse bands above and below. *Male* differing somewhat, the entire vertex being black.

Locality: Tzaneen, Transvaal, on native fig tree associated with galls, resembling those made by *Trioza merwei* Pettey. Collected by Claude Fuller, 10th December, 1918. Type in the Elsenburg collection.

- (7) *Mesohomotoma africana* sp. nov.

Female: Length of body 3.4 mm.; length of forewing 4.6 mm.; width, at widest part, 1.7 mm. *Male*: Length of body 2.3 mm.; length of forewing 4.2 mm., width 1.4 mm. General colour of specimens preserved in alcohol: pale yellow.

Locality: Durban. Collected by C. P. van der Merwe, 15th April, 1922.

EXPLANATION OF PLATES.
(All figures much enlarged.)

PLATE I.

Arytaina acaciae-baileyanae (Froggatt).

- Fig. 1a. Normal forewing, showing maculae.
 Figs. 1b, 1c, 1d, 1e, 1f, 1g. Variations in wing venation found sometimes in either forewing of either sex. Maculae not included.
 Fig. 2. Head, front view.
 Fig. 3. Head, lateral view.
 Fig. 4. Female genitalia, lateral view.
 Fig. 5. Male genitalia, lateral view.

PLATE II.

Euphalerus acokantherae (n.sp.).

- Fig. 1. Forewing.
 Fig. 2a. Front view of head; Fig. 2b, distal segments of antenna.
 Fig. 3. Lateral view of head.
 Fig. 4. Male cauda.
 Fig. 5. Female cauda.

PLATE III.

Euphalerus natalensis (n.sp.).

- Fig. 1. Forewing.
 Fig. 2. Head, front view.
 Fig. 3. Antenna.
 Fig. 4. Genitalia, female.
 Fig. 5. Genitalia, male.
 Fig. 6. Head, side view.