

# NEW SOUTH AFRICAN PSYLLIDS.

By F. W. PETTEY, Ph.D.,

Entomologist, Elsenburg School of Agriculture and Experiment Station.

The following is a description of some new South African Psyllids, kindly collected by Mr. Claude Fuller, Mr. C. P. van der Merwe, Prof. J. C. Faure, and Dr. Stacy Skaife. The old species, *Rhinocola eucalypti* Maskell, has been reclassified, with a more detailed description and illustrations of the adult.

The writer wishes to acknowledge the very valuable assistance of Prof. D. L. Crawford of the University of Hawaii in the determination and classification of the species.

*Eurhinocola eucalypti* (Maskell) — *Rhinocola eucalypti* Maskell.  
Trans. N.Z. Inst. XXII., 1889.

(Pl. XII, figs. 1, 15a, b, c; Pl. XIII, figs. 23, 38.)

General colour somewhat obscured by a thin, white, mealy substance on the head and thorax, thinner on the abdomen. Head and thorax dark brown dorsally with a purplish hue, except that the lateral areas of the pronotum and the lateral margin of the scutum and the wing attachments are yellow. Antennae yellow, the basal and three terminal segments brown. Eyes reddish-brown; tibiae of legs and hind coxae yellowish, the other parts of legs brownish; metacoxal spurs pale yellow. Abdomen dark brown, the posterior margin of each abdominal segment yellow dorsally, yellow laterally, dark brown ventrally; with a triangular pale yellow area bordering the posterior margin of each segment; genitalia dark brown, dorsal valve of female yellowish-brown at apex.

Head: large; including eyes, as broad as the thorax; closely adpressed to prothorax, and concealing the propleurites; rather deflexed. Vertex a little broader than long, narrowing considerably anteriorly, depressed posteriorly, roundly emarginate at anterior margin between antennae, raised or emarginate laterally, with posterior ocelli on the prominent lateral raised surface close to the eyes; finely punctate, not pubescent or pubescence very minute and sparse; shagreened; a tiny circular deep fovea on each side of the median line. Genae short, contiguous on inner margin, not continuing in plane with vertex; suture between genae and vertex

indistinct; with fairly numerous short hairs, somewhat longer at apex. Eyes rather small; triangular; viewed from front, recessive. Antennae short; rather stout; a little longer than width of head; the third and eighth segments longest, subequal, longer than the fourth and fifth combined; the fourth, fifth, seventh, ninth and tenth subequal; the sixth a little longer than the fourth or fifth; the ninth slightly dilated; the tenth with two unequal spines at the apex, the longest of which is not longer than the tenth segment.

Thorax: comparatively large; robust; short; finely punctate. Pronotum tapering to a point laterally; widest in the middle; short transversely; with a tiny fovea just behind the posterior ocelli; praescutum arched, rather small; scutum large, broad, rather flat transversely.

Legs: rather small; femora distinctly grooved for receiving tibiae; hind tibiae with no basal spine, and with about six spines at apex; farsi short, subequal; metacoxal spurs small, short, stout.

Abdomen: sparsely pubescent ventrally.

Female: Genitalia large; as long as the rest of the abdomen; with numerous short hairs; not deflexed; acuminate; ventral valve shorter and more acute than the dorsal. Male Genitalia: abdomen constricted at base of genitalia; genitalia large, pubescent; anal valve large, two segmented; the basal two-thirds broader than the apical third which comprises the terminal segment; claspers large but shorter than anal valve, simple, acute at tip, with long spines on the posterior inner margin and shorter ones on the sides.

Wings: narrowly elongate-ovate; longer than the body; somewhat coriaceous; the forewing more opaque than the hind; forewings with a row of distinct hairs along the anterior margin, extending about to the tip of  $M_1 + 2$ ; anterior and posterior margins straight and almost parallel; a double row of minute hairs on all veins; veins R,  $R_s$ , and M straight and almost parallel; first marginal cell considerably larger than the second;  $M + Cu$  distinctly longer than R and a little longer than  $R + M + Cu$ ; pterostigma present and long. Venation of hind wings distinct except near margin of wing; venation as illustrated.

Measurements of female, (Male somewhat smaller): length of body 1.69 mm.; length of forewing 1.8 mm.; greatest width .67 mm.; width of head including eyes .57 mm.; length of antennae .63 mm.

Locality: Elsenburg, Cape Province, 13th September, 1923; on *Eucalyptus globulus*.



*Arytaina mopani*, sp. nov.

(Pl. XII, figs. 2, 16a, b, c; Pl. XIII, figs. 24, 25.)

General colour of most specimens in alcohol, pale yellow. Head pale yellow; eyes reddish-brown; ocelli yellowish-brown; antennae pale yellow, segments four to eight inclusive, brown at tips; nine and ten dark brown; terminal segment of labrum dark brown. Thorax pale yellow; with a narrow, brown, lateral suture line, extending dorsoventrally, dividing the mesothorax from the metathorax. Legs pale yellow; spines at apex of tibiae and on first tarsal segments of the hind legs, and the claws of all the legs, black. Abdomen pale yellow; genitalia of male pale yellow; of female pale yellow with genital plates at apex brown. Wings hyaline.

Two female specimens differ from the others as follows: One has numerous, scattered, very small dark brown spots on the vertex, genae, thorax, and wings; four broad reddish-brown longitudinal stripes on the scutum; a brownish transverse stripe on each segment of the abdomen, more distinct and darker brown above; dorsal valve of genitalia brown, and the ventral valve yellow, except the apical third which is black; the forewings with numerous small brown maculae, much more numerous in the apical fourth and along the inner margin; the first marginal cell, cell M, the second marginal cell, and cell R with a more or less semicircular hyaline area bordering the outer margin of the wing. The other similar to the one just described except that the wings have only a few much scattered, very small, brown maculae.

Head: somewhat deflexed, not quite as broad as the thorax, including the eyes. Vertex about twice as wide as long; slightly rugose, not pubescent; emarginate (curved towards genae) at posterior margin; flat; each half somewhat elevated at its anterior inner angle bordering the median ocellus; a distinct broad fovea in the centre of each half, deepest in the middle of each half, on the same plane as genae. Genae slightly depressed, rather short, broadly rounded at apex, concave near base of antennae, divergent near apex, coarsely pubescent, each with one or two longer hairs at the apex just outside the middle of each gena and somewhat central, but directed forward. Frons not visible. Middle ocellus depressed a little below vertex; posterior ocelli in outer posterior angles of vertex, and scarcely raised above plane of vertex. Antennae slender longer than head and thorax combined; sparsely pubescent; third segment longest; segments four to seven inclusive, subequal; segments nine and ten, combined, shorter than eight,

which is shorter than seven; ten terminated by two rather short, subequal spines. Eyes of normal size, slightly recessive.

Thorax: of medium depth; broad; somewhat arched; very finely punctate, not pubescent. Pronotum flat; not extending laterally farther down than the middle of the eye; with two foveae on each side, the innermost of which is behind each posterior ocellus; praescutum with two rather large semicircular depressions, one on each of the middle line and on the anterior margin; middle line of scutum indistinct.

Legs: fairly stout; long; pubescent; hind tibia without basal spur, with about six small black spines at apex, arranged on the anterior margin; metacoxal spurs well developed, slender, conical, at least twice as long as wide at base; tarsal segments subequal.

Female genitalia: Genital segment of medium size; not very long; stout; minutely pubescent except several very long hairs before the apex on the dorsal valve; dorsal valve longer than the ventral and blunter at tip; ventral valve swollen ventrally, the hairs more numerous on the swollen area, longer and more scattered at the acute apex.

Male genitalia: Genital segment of medium size; minutely pubescent except a cluster of long hairs on the anterior margin of the ventral valve; forceps slender, cone-shaped, narrowly rounded at apex, shorter than the anal valve; basal half of anal valve wider than the apical half which is abruptly narrower posteriorly at the middle of the valve.

Forewings: rather long; slender; rounded at apex; widest some distance before the apex; all veins with a double row of small hairs; margin of wing with minute hairs except inner margin at base (anal area);  $C + Sc$  very wide, thick and opaque, and covered with minute scattered hairs; pterostigma opaque, long, narrow, and covered with minute scattered hairs; both marginal cells of about equal length; stem  $R$  longer than  $M + Cu$  and shorter than  $R + M + Cu$ ;  $M + Cu$  a little less than half as long as  $R + M + Cu$ . Venation of hind wing as illustrated;  $M + Cu$  stem wanting;  $Cu$  branching from  $R + M + Cu$  shortly before  $M$ .

Measurements: 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. Female: width of head plus eyes 0.95 mm.; male 0.88 mm.

Locality: Messina, Northern Transvaal, 25th November, 1915. Described from six males and six females; collected by Claude Fuller on the Mopane tree (*Copaifera mopane*) and at lights. (Type in Collection of the Division of Entomology, Elsenburg.)



This species is probably the same as that figured in Livingstone's "Missionary Travel and Researches in South Africa." Livingstone's mention reads: "A winged insect — a species of *Psylla* — covers the Mopane trees with a sweet gummy secretion. The natives collect this in great quantities, and use it as food." The Mopane trees were thickly infested with this insect in November, 1915, and clouds gathered around the lights after dark.

*Diaphorina punctulata* (Petley) = *Euphalerus punctulatus* Petley, S.A. Dept. Agric. Ent. Mem. 2, 1924.

(Pl. XII, figs. 6, 18a, b, c; Pl. XIII, figs. 27, 28.)

General colour of specimens in alcohol, head and abdomen, pale yellow; thorax, reddish brown. Body covered with mealy white powder. Head pale yellow above, with reddish brown eyes and reddish yellow ocelli; genae more or less dark brown below; antennae pale yellow, the two basal segments brown, the two terminal segments black; the hind margin of the vertex and the anterior margin of the pronotum black; pronotum with two dark foveae on each side. Anterior third of praescutum black, the black area divided at least posteriorly by a whitish middle line; scutum with two broad longitudinal dark brown stripes on each side of the middle, the outermost stripes, — which are sometimes reddish brown in the middle, — are the longest; the posterior dorsal sclerites marked with black; the lateral sclerites marked with black and brown; coxae and part of trochanter of fore and middle legs dark brown to black; metacoxae brown with pale yellow or whitish spurs; femora of all legs more or less brown; tibiae and tarsi pale yellow; spines on hind legs black; ventral sclerites between fore and middle legs black. Female and male genitalia yellowish, more or less brown at apex. Fore wings much maculated; sub-opaque; the maculae dark brown and arranged as in figure; five more or less semicircular or lunulate white areas, two in the first marginal cell, and one in the second and in cell Cu; a triangular white or hyaline area near the apex in cell R, but not bordering the outer margin of the wing. Hind wing hyaline.

Head and thorax coarsely punctate, the depressions distinct and circular, a hair in the centre of each depression.

Head: slightly deflexed; including eyes, about as broad as thorax. Vertex about twice as wide as long; flat; not rugose; with a short coarse pubescence; coarsely punctate; posterior

border deeply emarginate, a small distinct narrow fovea, deepest behind the middle. Genae on same level as vertex, directed forward, contiguous at base, distinctly longer than wide, bluntly rounded at tip, coarsely pubescent, with short hairs of the same length as those on the vertex. Antennae a little shorter than the width of head plus eyes; rather stout; sparsely pubescent; segments three to eight inclusive, subequal in length; segments nine and ten shorter and thicker; segments five and seven narrower than any of the others; segment ten with two terminal spines, the one shorter than the other. Eyes not recessive, of medium size.

Thorax: somewhat arched; of medium breadth and depth; coarsely and finely punctate; distinctly but minutely pubescent, the hairs about as long as those on the head. Pronotum flat, but as wide in the middle as at the sides, the lateral margin terminating at about the middle of the eye; with two foveae on each side, and a smaller and less distinct one just behind the posterior ocellus; praescutum not as wide as pronotum; with two small angular ridges on the posterior margin, one on each side of the middle line, pointing backwards and outwards; scutum with no middle line.

Legs: of medium size; each femur on the under side with a distinct longitudinal groove for receiving the tibiae; hind tibiae with no basal spur, with about eight short black spines on the margin at the apex, the posterior margin at the apex free of spines; tarsi subequal, the basal segment of the hind tarsi with two spines; metacoxal spurs well developed, pointed.

Abdomen pubescent.

Female Genitalia: Genitalia of medium size; the dorsal valve slightly longer than the ventral, and less pointed; short hairs of equal length, arranged, when viewed from above, in two rows, each row along the side of the middle line, and the hairs pointing outwards; ventral valve with no prominent ventral swelling, and very minutely pubescent.

Forewings: more than twice as long as wide; rounded at apex; widest before the apex, narrow at base; first marginal cell shorter and wider than the second; stem R almost three times longer than  $M + Cu$ , and almost twice the length of  $R + M + Cu$ ;  $M + Cu$  shorter than  $R + M + Cu$ , the latter not straight; no pterostigma, or pterostigma practically wanting. Veins with two rows of hair, visible only when highly magnified because of their minuteness and the opaque nature of the wing; one row of hairs on the anterior margin up to the tip of vein Rs. Venation of hind wing as illustrated.



Measurements: Female: length of body 3.4 mm.; length of forewing 2.5 mm., width 1.1 mm.; width of head plus eyes 6.5 mm.; length of antennae 0.48 mm.

*Locality:* Durban, Natal, 24th October, 1922. Described from six females and one male, collected by C. P. van der Merwe on *Sclerocarya caffra*. The species has also been found on *Cordia caffra* and *Clausena inaequalis*, in Natal.

(Type in collection of the Division of Entomology, Elsenburg.)

This species differs from *Diaphorina natalensis* chiefly in respect to the comparative length of the genae, the comparative size of the marginal cells, the length of the stem R, the length of segment three of the antennae, and the characteristics of the female genitalia. It is very similar to *D. guttulatus* (Enderlein), but differs chiefly in respect to the comparative length of segment three of the antennae, and characteristics of genitalia. Enderlein does not mention the presence of hair on the veins, the angular ridges on the praescutum, and the coarse punctures on head and thorax in his species.

*Diaphorina carissae* (Petty) = *Euphalarus carissae* Petty, S.A. Dept. Agric. Ent. Mem. 2, 1924.

(Pl. XII, figs. 9, 12, 19a, b, c; Pl. XIII, figs. 30, 31.)

General colour of specimens in alcohol, obscured by mealy white powder on the body; pale yellowish brown to yellow head and abdomen, thorax darker brown. Head yellowish with brown foveae; eyes dark reddish brown; antennae pale yellow with the two terminal segments dark brown and the two basal segments brownish; pronotum brown, darker brown at lateral margin; praescutum brown, with an indistinct pale yellow median longitudinal stripe; scutum brown with four indistinct pale yellow longitudinal stripes, the outermost being the longest and most distinct, the two of each side connected anteriorly; scutellum pale yellow; thorax brown ventrally; abdomen brown dorsally, pale yellow on the under side; genitalia yellowish brown; legs pale yellow; forewings maculated, sub-opaque, maculae brownish and arranged as in figure.

Head and thorax punctate.

Head: somewhat deflexed; including eyes, not as broad as widest part of thorax. Vertex a little more than twice as wide as long; flat; punctate; with a short coarse pubescence; posterior border not deeply emarginate; with a circular prominent fovea

in the middle line of each half of the vertex posterior to the centre of each half. Genae on same level as vertex, but slightly more deflexed; short, a little more than half as long as the vertex; contiguous at base; considerably divergent; narrowly rounded at tip; coarsely pubescent; with short hairs of about the same length as on the vertex, but a little more numerous. Antennae about as long as width of head including eyes; rather stout; sparsely pubescent; third segment longer than any of others; third to the ninth subequal in length; fifth and seventh somewhat narrower; ninth the widest; tenth with two spines, one shorter than the other. Eyes slightly recessive, of medium size.

Thorax: somewhat arched; of medium depth and breadth; punctate; pubescent, the hairs shorter and more sparse than those on head. Pronotum flat; about as wide in the middle as at the sides; the lateral margin terminating below the middle of the eye, with two foveae on each side, the one nearest the lateral margin being the largest and most distinct; praescutum almost as wide as pronotum, with no angular ridges on the posterior margin.

Legs of medium size; with no grooves on femora as in *Diaphorina punctulata*; hind tibiae with no basal spur, with about seven short black spines on the margin at the apex, the posterior margin at the apex free of spines; tarsi subequal, except those of front legs, the basal segment of the hind tarsi with two spines; metacoxal spurs distinct, conical.

Abdomen slightly pubescent, with minute hairs.

Female Genitalia: Of medium size; the dorsal valve longer than the ventral, and having short hairs of equal length, except near the apex where they are shorter; ventral valve pubescent, with shorter hairs than on the dorsal valve. Male Genitalia: Genital segment rather large, with hairs of medium length, except on the ventral valve where they are shorter and less numerous; forceps slender, rather thumb-shaped; a little narrower at apex; anal valve at the posterior apical margin, basal half wider than apical half.

Forewings: more than twice as long as wide; broadly rounded at apex; widest before the apex; narrowly oval; the first marginal cell a little shorter and a little wider than the second; stem R about twice as long as  $M + Cu$ , and less than twice as long as  $R + M + Cu$ ;  $M + Cu$  a little shorter than  $R + M + Cu$ , the latter straight; pterostigma wanting. Veins with two rows of hairs, visible only when highly magnified; one row of hairs on the anterior margin up to the tip of vein Rs. Venation of hind wing as illustrated.



Measurements of female (Dimensions of male similar): length of body 1.35 mm.; length of forewing 1.65 mm.; width .7 mm.; width of head, including eyes, .4 mm.; length of antennae .4 mm.

*Locality*: Kwambonambi, Zululand, 10th February, 1922. Described from one male and five females, collected by C. P. van der Merwe.

(Type in collection Division of Entomology, Elsenburg.)

This species is almost identical with *guttulatus* (Enderlein) in respect to maculation and venation of the forewings, the antennae, and the relative proportions of vertex and genae; but it is much smaller, and differs somewhat in colour and in the shape of the male genitalia, as far as may be determined from the illustrations of Enderlein's species. Enderlein unfortunately does not figure the head of his species, and he does not mention the presence of hairs on the veins of the forewings.

*Rhinocola crotalariae* Pettey, S.A. Dept. Agric. Ent. Mem. 2, 1924, (Pl. XII, figs. 4, 7; Pl. XIII, figs. 21a, b, c, and 37.)

General colour of specimens in alcohol, pale yellow with dark brown markings. Vertex pale yellow with irregular dark brown markings, median suture, posterior and lateral margins, and a broad transverse line on the anterior margin visible from the under side, dark brown. Eyes red, the two basal segments of antennae pale yellow and dark brown; third segment pale yellow; fourth and sixth mostly dark brown; fifth and seventh mostly pale yellow, dark at apex, apical half of eighth black; ninth and tenth black. Thorax pale yellow, marked with dark brown, particularly the anterior margins of the pronotum and praescutum. Legs mostly pale yellow; front tibiae shaded brown; other parts of legs slightly shaded brown, especially the distal tarsal segments. Wings with brown markings on and between the veins. Abdomen pale yellow, with a broad transverse band on each segment above, and with two dark brown large spots on each segment below, one on each side of the middle; the two dark spots of the first segment often connected anteriorly, and in some specimens the brown areas of the under side connect in each segment to form a transverse band; genitalia of male pale yellow with shaded brown areas; genitalia of female pale yellow, shaded brown at base and apex.

Head: as wide as thorax, slightly deflexed. Vertex more than half as long as broad; flat; with two shallow rectangular foveae, one on each of the median line, each with a deep middle line;

very finely pubescent; genal cones wanting; front ocellus at extremity of frons which is visible only from the under side; clypeus large. Antennae rather short and rather stout; longer than width of head, and extending not quite as far back as posterior margin of thorax; third segment more than twice as long as others; fourth to ninth subequal; tenth with two small subequal setae, no longer than the tenth segment.

Thorax: not strongly arched; very finely pubescent. Pronotum broad, i.e., long transversely; with two transverse foveae on each side, the innermost larger than the outermost; pleurites short; scutum with no middle suture.

Legs slender, of medium length; metacoxal spurs wanting; hind tibiae with no basal spines, and with about ten small dark brown spines at the apex in a row along the anterior margin; hind basal tarsi with two tiny spines at apex.

Abdomen slightly pubescent.

Female Genitalia: Genital segment not quite as long as the rest of the abdomen; valves rather finely pubescent, the dorsal valve having several longer setae before the apex; dorsal valve roundly acute at apex; ventral slightly shorter than dorsal and more pointed at apex. Male Genitalia: Anal valve about one-third longer than the forceps, widest at base, gradually narrowing towards the apex, curved backwards near the apex, and truncate at the apex; forceps, viewed from the side, apparently two-lobed, one lobe pointed at apex, the other rounded; ventral valve with a concave posterior margin, pubescent; with several longer setae on the posterior upper margin.

Forewings: rather thickened, maculated as shown in figure; a row of hairs along the anterior margin; veins stout and maculated, with a few minute hairs; marginal cells large, Rs rather straight, stems Rs, M + Cu, and R + M + Cu about equal in length, pterostigma present. Hind wings hyaline, more delicate; venation indistinct as figured.

Measurements: Length of body, male 1.45 mm.; female 1.51 mm. Length of forewing, male 1.25 mm.; female 1.40 mm. Width of forewing, male 0.50 mm.; female 0.55 mm. Width of head, including eyes, 0.35 mm.; female 0.40 mm. Length of antennae, male 0.60 mm.; female 0.65 mm.

Locality: Cedara, Natal, 1st November, 1919. Described from six males and six females; collected by S. H. Skaike on *Crotalaria capensis*.

(Type in collection Division of Entomology, Elsenburg.)

Prof. Crawford has called my attention to the fact that this species is closely related to *Rhinocola targioni* Licht. Crawford



in his paper, "Notes on Psyllidae," Ent. News. XXXI., p. 69, states: "*Rhinocola* has been made to embrace a large number of unrelated species, many of which must eventually be referred to other genera. . . . For a species of *Rhinocola* (*R. ericae*), Enderlein erects the new genus, *Strophingia*. This seems scarcely justifiable, since *R. ericae* and *R. targioni* are similar, and not generically distinct."

*Paurocephala bicarinata* Pettey, S.A. Dept. Agric. Ent. Mem. 2, 1924.

(Pl. XII, figs. 11, 17a, b, c; Pl. XIII, fig. 36.)

General colour of specimens in alcohol, head pale yellow, posterior margin black. Frons yellowish brown. Clypeus dark brown. Terminal segment of labrum black. Eyes reddish. The two basal segments of antennae pale yellow; intermediate segments pale yellow to brown; two terminal segments black. Pronotum pale yellow, almost white, with two small indistinct brown spots on each side; praescutum yellowish, sometimes black along the margin, with four rectangular dark brown areas; scutum pale yellow with a black longitudinal middle line (a suture?), and with two broad, dark brown or brown, longitudinal lines on each side of the middle line; dorsal sclerites of metathorax black or brown, sometimes pale yellow in the centre. Abdomen pale yellow above and below, with a broad, transverse dark brown band in each segment above. Legs pale yellow, with black claws; femora sometimes brown. The males somewhat darker than the females.

Head: including eyes, as wide as thorax; deflexed; appearing short and very wide. Vertex flat dorsally; posterior margin arcuate, elevated at posterior ocelli; with two not very prominent foveae, one on each side of the median line, posterior to the centre; reticulately rugose; very finely pubescent; rounded downward in front, on the same plane with genae. Genae not depressed but concealed when head is viewed dorsally, because of their retraction towards the thorax; swollen beneath antennal sockets; coarsely pubescent, with two or three longer hairs on the inner margin near apex. Frons visible in front, and depressed between genae; with anterior ocellus at apex on same level as vertex and just visible when vertex is viewed dorsally. Antennae about as long as head and thorax combined; slender; tenth, or terminal, segment very short, about half as long as ninth, and having two unequal spines, the longest of which is about as long

as the ninth segment; the two last segments about half as long as the eighth and slightly broader. Eyes large, recessive.

Thorax: thick dorso-ventrally; well-arched. Pronotum finely rugose, very finely pubescent; praescutum and scutum finely punctate, very finely pubescent; praescutum with two short, angular, prominent carinae on the posterior margin, one on each side of the middle, extending backwards and outward; middle line of scutum distinct.

Legs comparatively slender; hind tibiae without basal spur, with about eight short black spines at the wider apex, four on the inner margin and four on the outer; metacoxal spurs small, cylindrical, slender, two or three times as long as wide.

Female Genitalia: Genital segment very large, deflexed, considerably longer than the abdomen in some specimens; dorsal valve longer and less acutely pointed than the ventral, densely and minutely pubescent; with several longer hairs before the apex; ventral plate densely and minutely pubescent. Male Genitalia: Genital segment rather large, densely and minutely pubescent; forceps shorter than the anal valve, claviform; anal valve narrower at apex, widest in the middle, truncate at apex, sometimes projected forward over abdominal segments, sometimes backward towards forceps.

Forewings: comparatively long; narrow; rounded at apex; widest some distance before apex; hyaline; all veins having two rows of minute hairs, one row along each margin; one row of minute hairs along the margin of the wing; pterostigma long and narrow, with scattered minute hairs; stenus  $R + M + Cu$ ,  $M + Cu$ ,  $Cu$  and  $R$  subequal and rather long.

Measurements: Length of body, male 3.63 mm.; female 3.2 mm. Length of forewing, male 3.40 mm.; female 3.7 mm. Width of forewing, male 2.0 mm.; female 1.7 mm.

*Locality*: Unknown. The specimens are labelled "Citrus Tree Psylla, Pretoria, 25th March, 1912," but this label is regarded as without any great significance. Described from two males and three females.

(Type in collection Division of Entomology, Elsenburg.)

This species was referred to Professor D. L. Crawford for classification of the genus. He states: "The shape of the head, the wing venation (including pterostigma), the antennae, etc., are sufficiently like other species referred to *Paurocephala* to justify the disposal of this species under this genus." The species appears to differ from Crawford's description of the genus in having no prominent, erect, conical tubercle dorsal on the metascutum.



*Pauropsylla trichaeta* Pettey, S.A. Dept. Agric. Ent. Mem. 2, 1924.

(Pl. XII, figs. 13, 14, 20a, b, c; Pl. XIII, 32, 34.)

Colour of female: Head black with posterior half of vertex yellowish; ocelli yellowish brown; eyes pale yellow or brown; all segments of antennae yellow except the three terminal segments which are black; pronotum black; praescutum dark brown, with yellowish lateral and posterior margins, or entirely yellowish brown; scutum and scutellum mostly black or dark brown; prothorax and mesothorax mostly black ventrally and laterally; metathorax yellowish; legs yellow except the terminal tarsal segments which are black, hind femora sometimes brown; abdomen dark brown dorsally, sometimes yellow with dark brown dorsal and ventral transverse bands; genitalia yellowish with brown apex. The male differs somewhat, the entire vertex being black, the genitalia brown with yellow forceps, and the anal valve yellow at apex, the abdomen yellow with dorsal and ventral transverse brown bands, and the hind femora brown. Wings clear.

Head: short; much deflexed; not quite as broad as thorax; more than twice as wide as long. Vertex shiny, not punctate; with fine scattered pubescence; much elevated at posterior ocelli; extending forward at antennal bases and covering the frons, inclosing the anterior ocellus so that the latter appears to be on the vertex; a linear fovea between the raised ocellar area and the elevated median area. Genae swollen beneath antennal bases; with longer ventral pubescence; without cones. Clypeus small. Eyes large. Front ocellus visible from above. Antennae slender; a little longer than width of head; third segment longest; eighth, ninth, and tenth shortest and widest; terminal segment with two long stout setae, one considerably longer and more curved than the other; ninth segment with a smaller but distinct seta.

Thorax; broad; strongly arched; robust; the surface shiny, with fine scattered pubescence. Pronotum considerably hidden by the much arched praescutum.

Legs slender; hind legs long; hind tibia with three black spines at apex, one on the outer and one on the inner margin; metacoxal spurs slender, cone-shaped, comparatively small; trochanter of front legs with stout seta on apical ventral margin.

Abdomen moderately large. Male genital segment small; forceps slender, simple, widest a little before the apex, roundly acute at apex; anal valve somewhat longer and wider than forceps, truncate at apex. Female genital segment comparatively short, the ventral valve a little shorter than the dorsal, both acutely pointed at the apex.

Forewings: broad distally; more than half as broad as long; clear; rather thin and delicate; with hairs along the anterior margin; pterostigma wanting; veins slender, not pubescent, the first marginal cell larger than the second, but both comparatively small, the stem of media and cubitus very short. Venation of hind wings as figured, with a peculiar thickening in the anal area covered with hairs.

Measurements: Length of body, male 2.25 mm.; female 2.30 mm. Length of forewing, male 1.90 mm.; female 2.10 mm. Width of forewing, male 1.09 mm.; female 1.25 mm. Length of antennae, male 0.85 mm.; female 0.89 mm. Width of head, with eyes, male and female 0.58 mm.

*Locality:* Tzaneen, Transvaal, December, 1918. Described from numerous specimens, collected by J. C. Faure on a native tree: insects in pits in foliage similar to those caused by *Trioza merwei*.

Specimens collected on *Ficus* sp. at Durban, Natal, 26th November, 1921, by C. P. van der Merwe, seem to be this species; they vary in size and colour, the head, thorax and abdomen of most being yellow. (Type in Collection Division of Entomology, Elsenburg.)

This species is closely related to *Pauropsylla udei* Rubs., but apparently differs from it in having a shiny, smooth vertex and thorax, a straight R+M+Cu vein, a shorter radius, and a wider first marginal cell.

*Mesohomotoma africana* Pettey, S.A. Dept. Agric. Ent. Mem. 2, 1924.

(Pl. XII, fig. 10; Pl. XIII, figs. 22a, b, c, 33, 35.)

General colour of specimens in alcohol, pale yellow. Head pale yellow; beak black at apex. Antennae pale yellow; third to eighth segments inclusive, dark brown to black at apex; ninth to tenth black. Eyes dark reddish brown. Thorax pale yellow. Legs pale yellow, except the second tarsal segments which are yellowish brown with black claws; the terminal half of spines at apex of hind tibiae black. Abdomen pale yellow; genitalia pale yellow, the dorsal and ventral plates of female brownish, the forceps of the male brownish at apex.

Head: somewhat narrower than thorax at its widest part; very slightly deflexed; deeply cleft in front. Anterior and lateral



margins of vertex elevated into a narrow rim, with two deep linear grooves extending longitudinally and slightly divergently, extending from the middle of each half of the vertex, from the posterior elevated rim to the middle of the elevated rim of the vertex bordering the base of each antenna; anterior outer angle of the vertex acute and forming a small hornlike epiphysis projecting slightly over the space between the eye and the antenna base; vertex sparsely but distinctly pubescent. Anterior ocellus at front margin of apex, a little above apex of frontal cleft and visible from above. Genae not swollen into cones beneath, but projecting forward at antennae bases, forming frontal cleft. Frons small but visible between genae. Antennae slender, longer than head plus thorax; third segment the longest; fourth longer than fifth; fifth and sixth subequal; both longer than seventh or eighth which are subequal; ninth and tenth comparatively very short; tenth with two unequal stout setae at apex.

Thorax: sparsely pubescent, hairs shorter than on vertex; somewhat arched; not very broad. Pronotum long (longitudinally); anterior margin truncate; extending laterally a little below the middle of the eyes; with a large fovea located on each side at a point just back of the middle of the eyes, and a less distinct more linear one near the lateral margin of the pronotum.

Legs of medium size; hind tibiae with a rather large spur at base, and with about five rather large spines on the apical margin, one on the outer margin, four on the inner margin; the basal tarsal segment of the hind legs with one small black spine at apex.

Abdomen of male pubescent, comparatively short and slender; genital segment comparatively large; forceps very slender, acutely pointed at apex, pubescent; anal plate of peculiar shape, with three processes (viewed from side), all of different shape, pubescent; penis long, prominent. Abdomen of female short, pubescent, stouter than the male, the genital segment comparatively thick and stout, and longer than the rest of the abdomen; dorsal plate longer than the ventral, thick, suddenly becoming narrower at the apical third, finely pubescent, hirsute on the thick swelling just before the narrow apical third; the hairs as long as the apical third; the ventral plate somewhat shorter than the dorsal, acute at apex, finely pubescent, except before the apex where there are a few longer hairs.

Wings: hyaline, with two black spots on the front margin of the forewings, one at the tip of  $R_1$ , the other at the tip of  $R_s$ ; forewings long, about three times as long as broad, pseudovein connecting  $R_s$  with  $M$  at the point of forking of  $M$  1 + 2 and

M 3 + 4; both marginal cells large, the second much larger than the first. A row of small hairs along the anterior margin of the forewing; veins of forewing with two rows of microscopic hairs; a linear clouded area extending from the margin of the wing inwards, one in the middle of the second marginal cell, the other in the middle of cell M.

Measurements: Length of body, male 2.3 mm.; female 3.4 mm. Length of forewing, male 4.2 mm.; female 4.6 mm. Width of forewing, male 1.4 mm.; female 1.7 mm.

*Locality*: Durban, Natal, 15th April, 1922. Described from four males and four females; collected by C. P. van der Merwe.

(Type in Collection Division of Entomology, Elsenburg.)

This species is apparently closely related to *Mesohomotoma indica* Crawford, differing somewhat in colour characters, in characters of the male genitalia and the comparative length of M + Cu and R + M + Cu of the forewing. The point of forking of M 1 + 2 and M 3 + 4 in comparison with its relation to the position of Cu 1, is nearer the apex of the wing in *Mesohomotoma africana*.

*Diaphorina natalensis* (Petzey) = *Euphalarus natalensis* Petzey,  
S.A. Dept. Agric. Ent. Mem. 2, 1924.

*Diaphorina acokantherae* (Petzey) = *Euphalarus acokantherae*  
Petzey, S.A. Dept. Agric. Ent., Mem. 2, 1924.

Since the publication of the two species I have examined specimens of *Diaphorina putonii* Lw., kindly forwarded by Mr. Laing of the British Museum. Mr. Laing, in a letter comparing *Euphalarus* with *Diaphorina*, states: "*Euphalarus* is a much more robust insect, with the thorax strongly arched, the head more nearly at right angles to the body, and the tegmina more rounded and less linear." It is concluded that both the above species belong to the genus, *Diaphorina* Lw.



## PLATE XII.

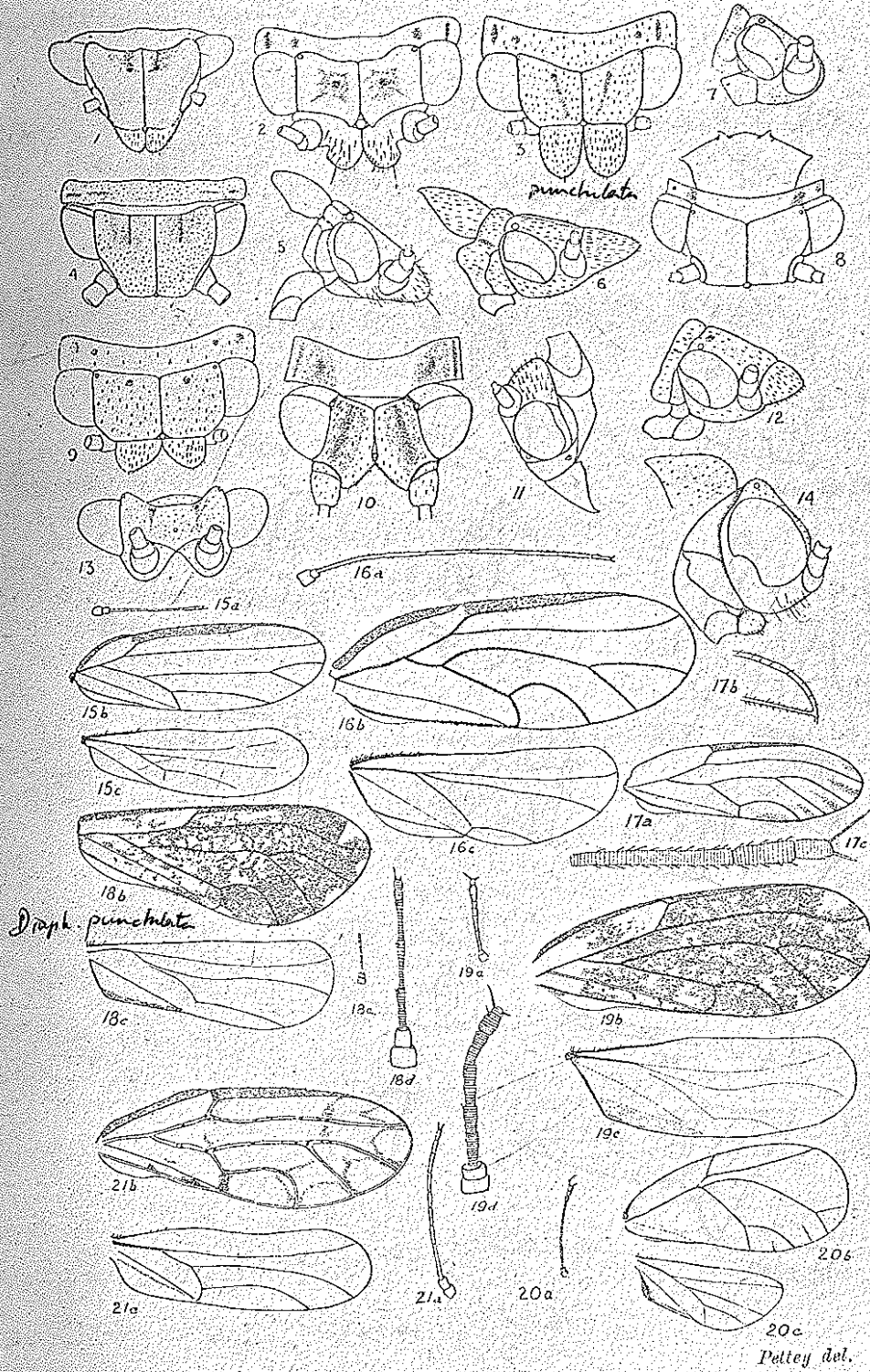
1. *Eurhinocola eucalypti* (Maskell).
2. *Arytaina mopani*, sp. nov.
3. *Diaphorina punctulata* (Petty).
4. *Rhinocola crotalariae* (Petty).
5. *Arytaina mopani*, sp. nov.
6. *Diaphorina punctulata* (Petty).
7. *Rhinocola crotalariae* (Petty).
8. *Paurocephala bicarinata* (Petty).
9. *Diaphorina carissae* (Petty).
10. *Mesohomotoma africana* (Petty).
11. *Paurocephala bicarinata* (Petty).
12. *Diaphorina carissae* (Petty).
13. *Pauropsylla trichaeta* (Petty).
14. *Pauropsylla trichaeta* (Petty).
- 15a. *Eurhinocola eucalypti* (Maskell). Antenna, showing comparative  
[length of forewing.
- 15b. " *eucalypti* (Maskell). Forewing.
- 15c. " *eucalypti* (Maskell). Hind wing.
- 16a. *Arytaina mopani* sp. nov. Antenna, showing comparative length with  
[forewing.
- 16b. " *mopani* sp. nov. Forewing.
- 16c. " *mopani* sp. nov. Hind wing.
- 17a. *Paurocephala bicarinata*, Petty. Forewing.
- 17b. " " Section of forewing, highly magnified.
- 17c. " " Terminal segments of antenna,  
[highly magnified.
- 18a. *Diaphorina punctulata* (Petty). Antenna, showing comparative length  
[with forewing.
- 18b. " " Forewing.
- 18c. " " Hind Wing.
- 19a. *Diaphorina carissae* (Petty) Antenna.
- 19b. " " Forewing.
- 19c. " " Hind wing.
- 20a. *Pauropsylla trichaeta*, Petty. Antenna, showing relative length of  
[forewing.
- 20b. " " sp. nov. Forewing.
- 20c. " " sp. nov. Hind wing.

## PLATE XIII.

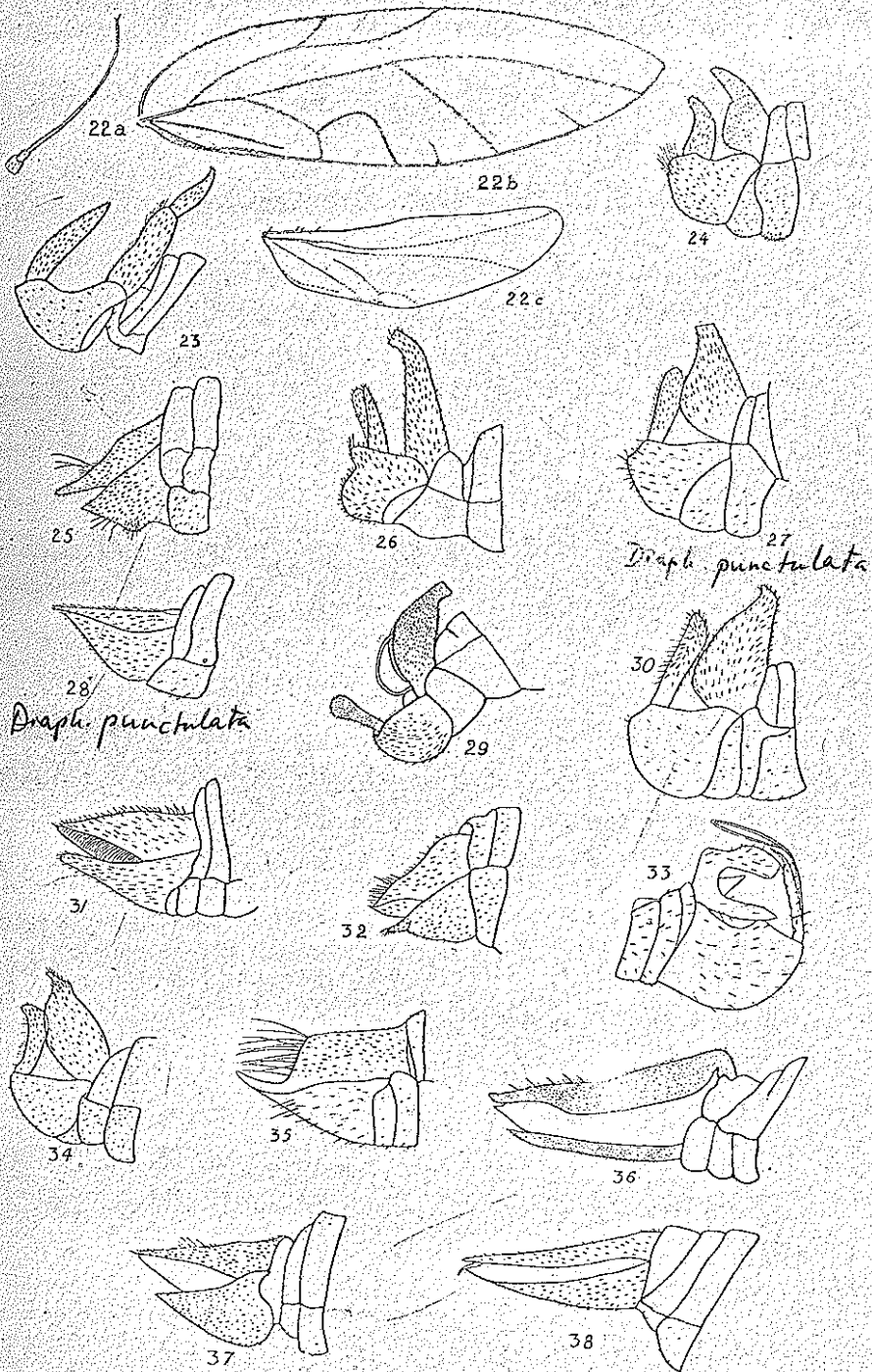
- 21a. *Rhinocola crotalariae*, Pettey. Antenna.  
 21b. " " Forewing.  
 21c. " " Hind wing.  
 22a. *Mesohomotoma africana*, Pettey. Antenna, showing comparative length  
 [with forewing.  
 22b. " " Forewing.  
 22c. " " Hind wing.  
 23. *Eurhinocola eucalypti* (Maskell). Male.  
 24. *Arytaina mopani*, sp. nov. Male.  
 25. *Arytaina mopani*, sp. nov. Female.  
 26. *Rhinocola crotalariae*, Pettey. Male.  
 27. *Diaphorina punctulata*, (Pettey) Male.  
 28. " " Female.  
 29. *Paurocephala bicarinata*, Pettey. Male.  
 30. *Diaphorina carissae*, (Pettey). Male.  
 31. " " Female.  
 32. *Pauropsylla trichaeta*, Pettey. Female.  
 33. *Mesohomotoma africana*, Pettey. Male.  
 34. *Pauropsylla trichaeta*, Pettey. Male.  
 35. *Mesohomotoma africana*, Pettey. Female.  
 36. *Paurocephala bicarinata*, Pettey. Female.  
 37. *Rhinocola crotalariae*, Pettey. Female.  
 38. *Eurhinocola eucalypti* (Maskell). Male.



Plate XII.



Pelley del.



Potter del.